PDS3 Pilot Cabinet series

Part number	Part name	No. of cylinders	PDS Pilot Part no.	Cabinet material	Activation			Hazard Area		Variants
					Manual	Solenoid	Delayed	ATEX	IECEx	
308590	PDS3 80M Pilot Cabinet	2	308582	Steel	X					-8
308594	PDS3 80MS Pilot Cabinet	2	308584	Steel	X	X				-8
308501	PDS3 80M Pilot Cabinet ATEX	2	308586	Steel	X			X		
308501-01	PDS3 80M Pilot Cabinet ATEX Single	1	308582	Steel	X			X		
308502	PDS3 80MS Pilot Cabinet ATEX	2	308584	Steel	X	X		X	X	-8 -31
308510	PDS3 80M Delay Cabinet	2	308280 308582	Steel	X		X			
308511	PDS3 80MS Delay Cabinet	2	308280 308584	Steel	X	X	X			-8
308512	PDS3 80MS Pilot Cabinet ATEX Delay	2	308280 308586	Steel	X	X	X	X		
308520	PDS3 80M Pilot Cabinet AISI316	2	308582	Stainless steel	X					
308522	PDS3 80MS Pilot Cabinet ATEX AISI316	2	308586	Stainless steel	X	X		X		-8
308523	PDS3 80MS Pilot Cabinet ATEX Delay AISI316	2	308280 308586	Stainless steel	X	X	X	X		
308202	Cabinet only	N/A		Steel						
308206	Cabinet only	N/A		Stainless steel						

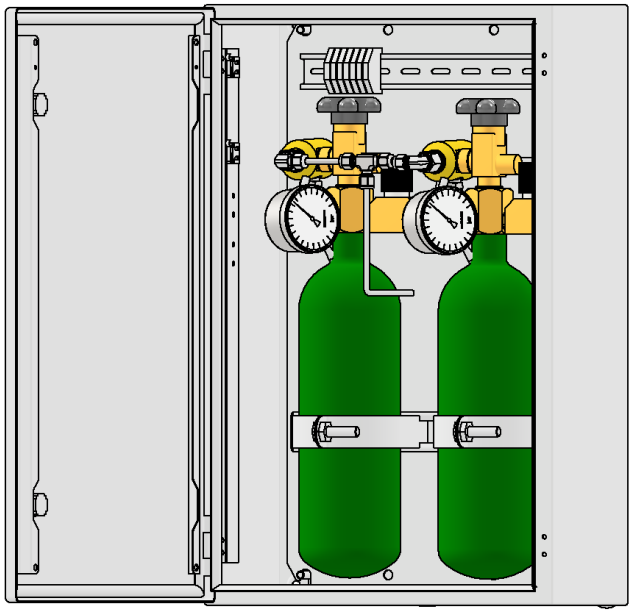
Variants:

Partnumber-8: Customized variant
Partnumber-31: Fireproof cabling internal

Note:

ATEX is used exclusively in Europe
IECEx is used worldwide
Fireproof cabling is according to IEC60331

For information regarding solenoids, see datasheets for relevant cylinder type.



General

PDS3 Pilot series is a remote pneumatic activation system for fire extinguishing. It meets the requirements of SOLAS FSS Code Chapter 5. 2.2.2, as well as DNV Statuary Interpretations Section 3, Chapter II-2.

The PDS3 Pilot cabinet series can be used in combination with the PDS II-Pull Unit(308382) to activate the pneumatic pressure source (a primary and a backup supply) that with the zone kit is routed to open the zone valve and the discharge valves or used in combination with Delay Pilot(308280).

This description is a general system description for the PDS system, if detailed information is required, please see the datasheets for the individual parts.

Specifications

Pressure

Fill:	80 bar @ 15°
Burst disc:	330 ±20 bar
Temperature:	-20 to +65°C
Connections	
Outlet:	For ø6mm tube, Centre bottom
Refilling:	1/4” ISO228
Switch rating	250Vac 3A (5A resistive)
Materials:	Steel, Brass, Stainless steel, EPDM
Cabinet surface:	Steel cabinet/RAL7035, Stainless cabinet AISI316/Brushed (G240)
	Mounting plate – Galv. steel
Cabinet Integrity:	IP66 (NEMA4)
Dimension	
H×W×D:	600×380×210
Weight:	approx. 20 kg (Variant with 1 cylinder is approx. 15 kg)

Markings

Name plate on front door: Fire Eater Logo, PDS3, Production date: yyyy-mm

Dimensioning

The maximum pipe length must satisfy the equation:

$$L \leq \frac{P_{PDS} \cdot V_{PDS} - P_{act} \cdot (V_{PDS} + V_{act})}{P_{act} \cdot 100 \cdot \frac{\pi}{4} D_{in}^2}$$

P_{act} = Required actuator pressure [bar], (SV22 = 35 bar)
P_{PDS} = Pressure in PDS system [bar]
D_{in} = Internal diameter of the tube/pipe [cm]
L = Pipe length [m]
V_{act} = Volume of actuator[cm^3], (SV22 = 8; add 1000 when using delay unit;)
V_{PDS} = Volume of PDS cylinder [cm^3], (std=2000)

Installation

Cabinet

The cabinet should be mounted via the four mounting holes on the backside

The cabinet should be mounted tightly against a flat and even surface to ensure IP rating 66. If this is not possible additional sealing around holes is required.

Pipe work

Only ø6mm (outside diameter) stainless pipes are to be used. Tube must comply with EN 10217-7, Max. working pressure 400 bar.

After installation of the cabinet, insert a straight section of tube through the rubber bushing placed in the bottom of the cabinet and into the compression ring fitting coming from the pilot cylinders.

Tubes must be deburred inside and outside.
The tubes must simply be inserted into the fitting. Make sure that they rest firmly on the shoulder of the fittings and that the nut is tightened by fingers. Hold the fitting body steady with a backup wrench and tighten the nut 1-1/4 turn.

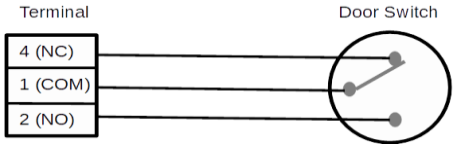
Caution: When working with stainless steel only tools appropriate for this work should be used, make sure that the stainless material is not being exposed to ferrous steel by, for example grinding or cutting.

Electrical

If signals to alarm horns and/or control panels are to be connected they are connected to the terminals placed inside the cabinet. (Notice: The cabinet is not an ATEX junction box. If used in Ex area, a separate junction box must be used for all cable connections when isolation barriers are used).

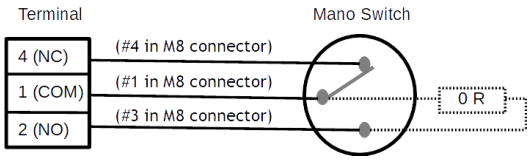
Door switches:

To identify which door switch is connected, simply follow the cables from the switch.
Connections are:



Pressure switch:

As standard a terminator with ∞ - 0k0 resistance is fitted. Other terminators are available. Connections are:



Operating

When the INERGEN System needs to be activated, follow these steps.

1. Locate the area where the fire is
2. Perform a head count to ensure everybody has cleared the area

   Notice that INERGEN works by depleting the oxygen in the area where it is released. INERGEN does not generate any decomposition products nor is it poisonous.
   When the INERGEN is released, an oxygen level of 10-12% will be present in the protected area, which is sufficient to breathe and think rationally.
   Rules require that personnel should only be exposed for this oxygen level for max. 10 minutes.
3. Locate the PDS3 Pilot cabinet which corresponds to the zone where the fire is and open the cabinet door (When the door is opened alarm must sound and ventilation must be shut down)
4. Wait aprox.30 seconds for ventilation to run out
5. Remove safety pin or seal from Handwheel valve (if fitted)
6. Open the PDS3 pilot cylinder(s) Handwheel Valve
7. Leave area
8. Inspect that the fire has been extinguished
9. Contact an authorized Fire Eater service agent to have the system reestablished

Test & service

Correct operation of the system is to be tested annually.

This is done by opening cabinet doors and verifying that:

1. Alarms sound in the relevant areas
2. Ventilation stops in the relevant zones
3. Gussets, fire dampers etc. close
4. Remove discharge valve actuator (PA8)

With the discharge valve actuator (Solenoid) removed from the discharge valve, correct operation of pipework and valves are tested by connecting the APTB Test tool (305148) to the APTB Test port inside the PDS cabinet. Do not activate the Handwheel Valve(s).

Pressurize the system to 35 Bar using test tool. Verify visually that the zone valve(s)/Pneumatic Actuator is operating properly.

IMPORTANT

After testing the system

1. Discharge valve actuator must be reinstalled
2. Zone valve must be reset
3. Bleed fitting on the control valves must be pushed back

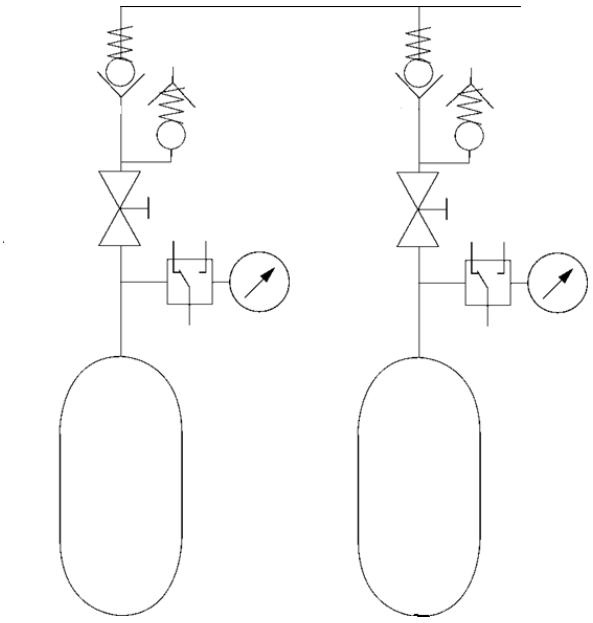
Filling

Only correct adapters should be used, damaged adapters etc. are to be destroyed to prevent accidental use.

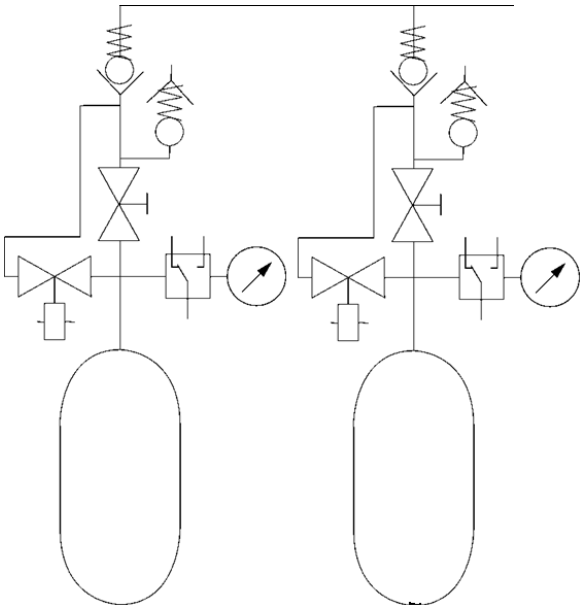
The filling must comply with the requirements of ISO14520-15.
Fire Eater recommendations for this is to:

1. Connect filling equipment
   Remove the non-return valve from the outlet,
   blind the bleed fitting during vacuum operation (place electrical tape on the top)
   Connect filling hose (outlet is ¼" Female ISO 7 thread),
   close hand wheel valves.
2. Verify system integrity
   Evacuate to 100 Pa (1 mbar) vacuum (accuracy 50 – 1000 Pa)
3. Verify free flow
   Open all hand wheel valves and evacuate cylinders
4. Remove moisture
   Keep at 100 Pa for 5 minutes
5. Flush:
   Pressurize with Nitrogen or INERGEN® to 2 bar
   Repeat step 3+4 so that the cylinder is flushed minimum 3 times
   Evacuate to 100 Pa (vacuum) for 5 minutes
6. Fill with Nitrogen or INERGEN®
7. Verify cylinder integrity
   Check for leakage (use soap water):
   a. Cylinder-Valve connection
   b. Burst disc

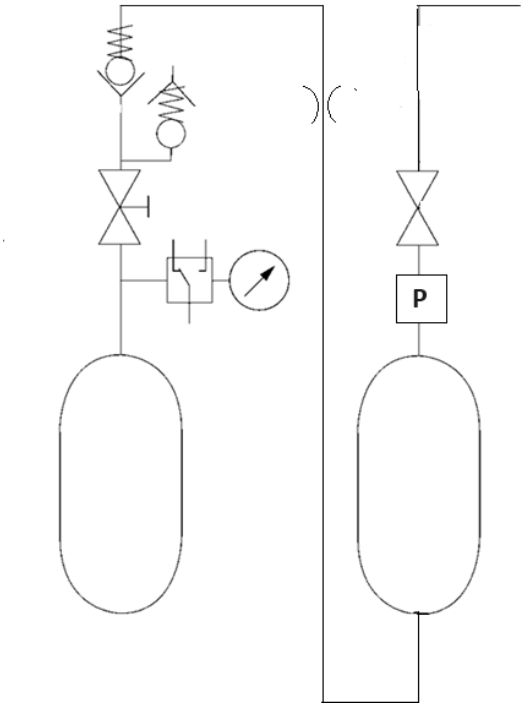
PID Diagrams



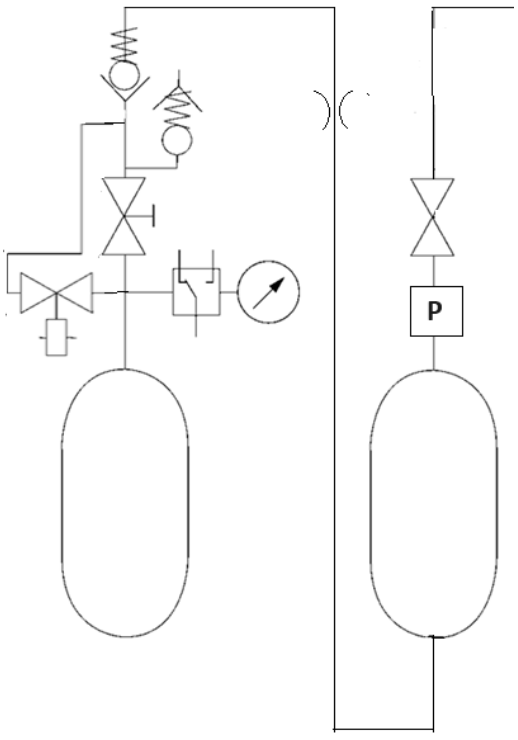
308590, 308501, 308520



308594, 308502, 308512 &308522

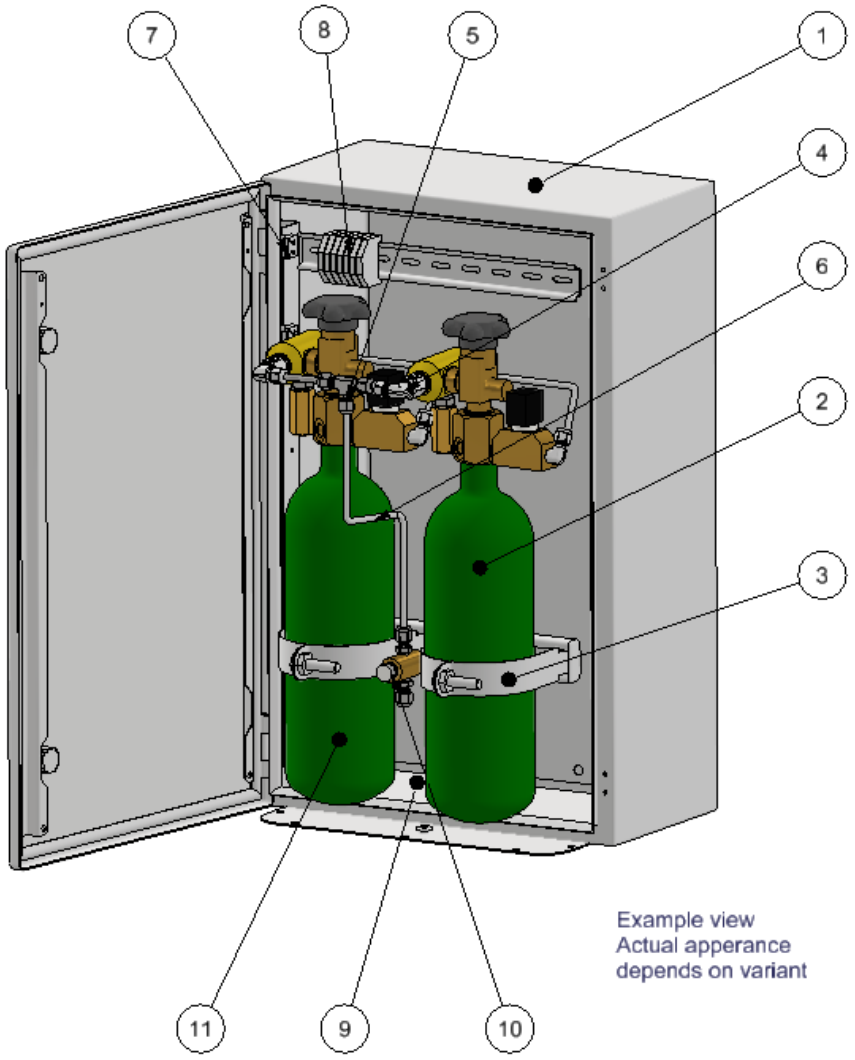


308510



308511 & 308523

Exploded view



Pos.	Item	Description	Material
1	Dependent on variant	PDS II-C Pilot Cabinet	Steel, AISI316
2	Dependent on variant	PDS3 Pilot	Steel, Brass, AISI316
3	400115	Cylinder bracket	Steel
4	301328	Compres fit ø6- ¼" male	AISI316
5	214035	Compres fit ø6 Tee	AISI316
6	102012	Tube Stainless Ø6mm	AISI316
7	308212	PDS II Door switch std	
8	308240	Terminal	
9	702316	Grommet ø6	NBR
10	305183	Testport	
11	Dependent on variant	PDS3 Pilot/Delay unit	Steel, Brass, AISI316

PDS Pilot Cabinet

General

Cabinet for use with Inergen Pilot Discharge System (PDS)

Must be fitted with PDS system,
suitable door switches and accessories (to be ordered separately)

It consists of:

The cabinet
Mounting plate & rail for door switches
Rail for cylinder bracket and electrical terminals

Specifications

See page 2

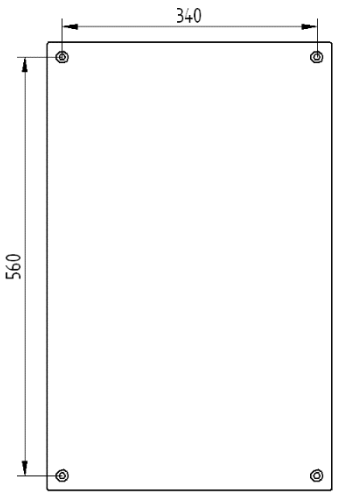
Installation

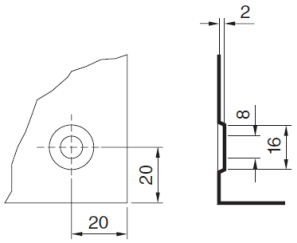
Painted cabinets

The cabinet should be mounted on a wall via the 4 mounting holes on the backside (mounting screws/bolts not supplied – 8mm screws/bolts recommended, 6mm min.)
The cabinet should be mounted tight against a flat and even surface to ensure IP rating 66 is maintained. If mounted against an uneven or rough surface, sealing around the mounting holes or use of mounting brackets should be considered

AISI316 cabinets

The cabinet is supplied without mounting holes unless requested.
The cabinet is installed either by drilling holes in the cabinet or by welding it directly to the fixture where it should be installed.





Standards & approvals

EN62208, UL508A, UL, GL, RMA, LRS, BV and others.