

## PDS II 80MS IECeX SIL

### General

The PDS II-C 80MS IECeX SIL Pilot is used for activation of Fire Eater INERGEN systems, where the pilot cylinder is placed in an Ex rated area. It supplies pressure to activate SV22 selector valves and discharge valves either directly or via the PDS II Control Pull Unit [308382].

Activation of the valves is done by gas pressure from the PDS bottles to the valves via stainless steel pipes.

The PDS systems can be placed inside the Fire Eater PDS cabinet (items 308202, 308204, 308206)

### Specifications

#### Outlet:

Type: Compression fitting for  $\varnothing 6$ mm tube  
Flow way:  $\varnothing > 2$ mm

#### Manoswitch:

See datasheet "Ci Manoswitch" for details

Range: 0- 160 bar

The manoswitch is a "Simple Apparatus" according to the ATEX directive.

#### Solenoid:

Power: 8 W

Voltage: 24 VDC

Class: Ex db mb IIC T4, Ex tb IIIC T 130°C, II2 GD, Tamb: -40 to + 80°C

Cable entry: M25 cable gland, Cable diameter:  $\varnothing 7 - \varnothing 9$  mm

Cable:  $3 \times 0.75 \text{mm}^2$  IEC 60331, 3m

Blue wire: 0 V

Brown wire: 24 VDC

#### Materials:

See exploded view

#### Filling:

Agent: Nitrogen

Pressure: 80 bar @ 15°C

#### Dimensions:

Height: ~510 mm

Diameter: 102 mm

Weight: ~5kg (empty)



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Vølundsvej 17  
DK- 3400 Hillerød  
Tel +45 7022 2769  
Fax +45 7023 2769

**Dimensioning**

The maximum pipe length must satisfy the equation:

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

- P<sub>act</sub> = Required actuator pressure [bar], (SV22 = 35 bar)
- P<sub>PDS</sub> = Pressure in PDS system [bar]
- D<sub>in</sub> = Internal diameter of the tube/pipe [cm]
- L = Pipe length [m]
- V<sub>act</sub> = Volume of actuator [cm<sup>3</sup>], (SV22 = 8; add 1000 when using delay unit; )
- V<sub>PDS</sub> = Volume of PDS cylinder [cm<sup>3</sup>], (std=2000)

**Installation**

A suitable bracket around the cylinder which is sufficient to hold the weight and forces when the cylinder is opened.

**Operation / Activation**

Turn the wheel counter clockwise until fully open, or activate the electric circuitry.

**Test & service**

Verify pressure at device according to authorities' requirement or minimum annually.

Correct pressure at discharge/selector valve is verified by using a class 1.0 gauge.

Function test must be performed annually (or to the requirements of the authority having jurisdiction).

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**Filling**

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

The filling has to comply with the requirements of ISO14520-15

Fire Eater recommendations for this is to:

- 0. 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.
  - 1. Verify system integrity
    - Evacuate to 100 Pa (1 mbar) vacuum (accuracy 50 - 1000 Pa)
  - 2. Verify free flow
    - Open all hand wheel valves and evacuate cylinders
  - 3. Remove moisture
    - Keep at 100 Pa for 5 minutes
  - 4. 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
  - 5. Fill with nitrogen or Inergen
  - 6. Verify cylinder integrity
    - Check for leakage (use soap-water):
      - a. Cylinder-Valve connection
      - b. Burst-disc

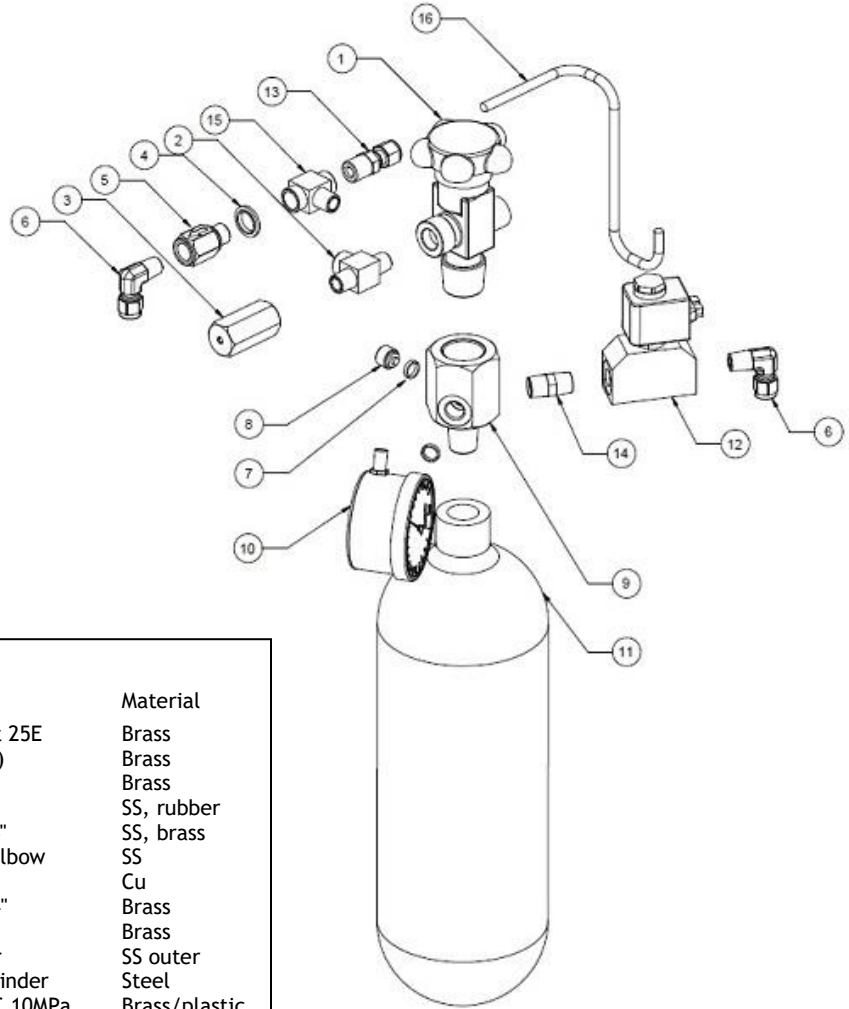
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**Exploded view**

Slight variations may appear



Recommended replacement parts

Pos.	Item	Description	Material
1	603202	HWV 1/4" 200bar Inlet 25E	Brass
2	303209	Tee 1/4" BSP (m-f-m)	Brass
3	305320	Bleed fitting 400bar	Brass
4	777203	Bonded seal 1/4"	SS, rubber
5	305302	Non return valve 1/4"	SS, brass
6	214071	Comp. Fit. 1/4"-Ø6 Elbow	SS
7	212181	Seal 1/4" gauge seal	Cu
8	303101	Plug manoswitch 1/4"	Brass
9	302179	PM adapter W28.8	Brass
10	305360	Manoswitch 0-160bar	SS outer
11	400009	FE-HP027200 PDS cylinder	Steel
12	308145	Valv Soln 1/4" SIL IEC 10MPa	Brass/plastic
13	301328	Compres fit ø6-1/4bspt str	SS
14	302417	Nipple 1/4" -1/4" bspt 135 Bar	Brass
15	303210	Tee 1/4 bspo (f-m-f)	Brass
		Nitrogen	
	303020	Cable kit OK0 2m	
	101138	Cable 3x0.75 IEC331	
	214009	Seal Red	
	214011	Seal wire fine	
		Label: Cylinder w Nitrogen	

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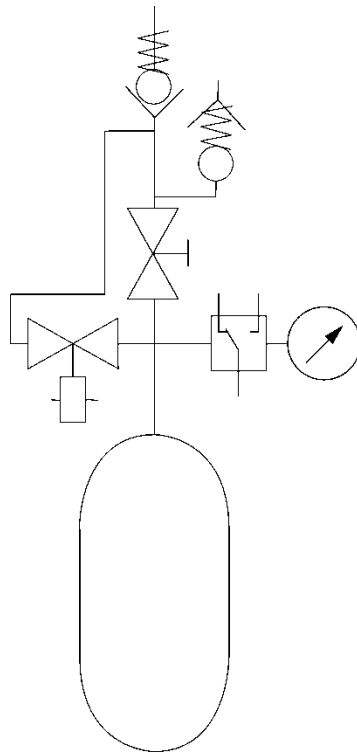



**FIRE EATER A/S**

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**P&ID diagram**



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