

# Safe, Effective, Environmentally Friendly



**inertec 300**  
Fire Suppression System



**SRI**  
LEADING THE FIGHT  
AGAINST FIRE

# Leading the Fight Against Fire

Established in 1974, Steel Recon Industries Sdn Bhd (SRI) is proudly a Malaysian company that offers a comprehensive range of firefighting products, equipment and technology solutions through a vast network of distributors worldwide.

Always at the forefront of Malaysian firefighting advances, SRI's products are certified by international standard boards such as VdS, LPCB, BSI, UL, FM and SAI Global, underlining our commitment to the provision of the most reliable firefighting solutions for local and global needs.

SRI's products are manufactured in our state-of-the-art facilities which allows us to produce quality products along with the flexibility to cater to specific needs and standards. As we progress into the future, the pioneering spirit that propelled SRI's success continues to drive us. We will lead the way with technology and cutting-edge research, backed by local expertise and nearly 50 years of experience, to deliver unrivalled protection to your people and property.



# Eco-Friendly Extinguishing Agent



**inertec 300**

Fire Suppression System

Inertec-300 is SRI's internationally accredited, environmentally friendly fire protection solution which uses inert gases as an extinguishing agent.



# Inertec-300

The Most Environmental Friendly Protection System

## Why 300 Bar?

Expanding on our Inertec range and technology, Inertec-300 now allows for greater design choices and increased flexibility for your fire protection solution, all in a cost-effective, safe and eco-friendly manner.

Inertec-300 systems can fill more inert gas in each cylinder, translating to lesser hardware and accessories required but still maintaining 95% discharge capabilities into the protected area within 60 seconds.

### Benefits of Inertec-300

- Lesser equipment and cylinders
  - Higher cylinder pressure
  - Larger system
  - Efficient constant pressure flow rate
  - Optional selector valve
- = Cost savings to you!

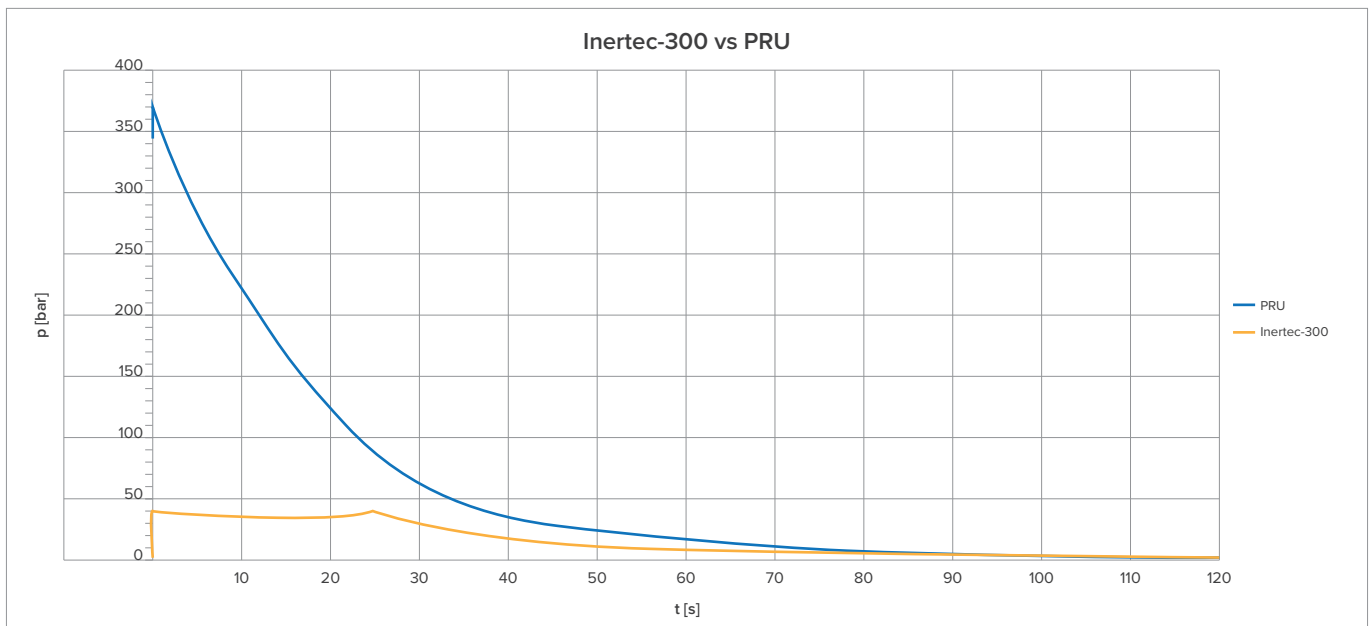
### Why Constant Pressure Regulators instead of Pressure Reducing Unit (PRU) for 300 Bar

- Better safety as explosive force during discharge is regulated to a constant flow
- Lower cost as same SCH 40 pipe from cylinder to nozzle
- Ease of installation as PRU diameter calculation is not required
- Potential for reduction of pressure relief vent

**Inertec-300, the most natural and environmentally friendly way to protect your valuable assets.**

**Available now in:**

- 300 bar technology
- IG01, IG55, IG100 and IG541
- 80L and 140L TPED cylinders
- Constant pressure regulator



# Protecting What Matters

## How it Works?

SRI's Inertec-300 system is a total flooding system whereby the required amount of inert gas is discharged into an enclosed area to reduce the oxygen concentration until it reaches a level whereby combustion is no longer supported. As inert gas are naturally occurring, Inertec-300 presents no negative environmental impact which means:-

- ZERO Ozone Depletion Potential
- ZERO Global Warming Potential
- ZERO Atmospheric Lifetime

### It is the ideal fire protection solution for a wide range of industries and applications as:

- NO condensation or temperature shocks that can cause harm to equipment
- NO harmful by-products upon contact with heat or fire
- NO residue means no damage to equipment and no downtime
- NO fog: so escape routes remain visible
- SAFE for occupied spaces as it is colorless and odourless
- SAFE for electrical equipment as electrically non-conductive
- COST EFFECTIVE to refill as inert gases are readily available and affordable

Suitable and effective to suppress the following types of fire.

#### CLASS A

TYPE: Surface Fire  
eg: (Wood, Paper, Fabric, Rubber, etc.)

#### CLASS B

TYPE: Oil Based Fire  
eg: (Gasoline, LPG, Kerosene, Methanol, etc.)

#### CLASS C

TYPE: Electrical Fire  
eg: (Electrical components, Switches, etc.)



# Example of Calculation for Inertec-300



Agent	IG01 – 100% Argon	IG55 – 50% Argon and 50% Nitrogen	IG100 – 100% Nitrogen	IG541 – 52% Nitrogen, 40% Argon and 8% CO2
Dimension of room to be protected	10.0m (L)x 5.3m (W) x 3.0m (H)			
Volume of room to be protected (A)	159.0m <sup>3</sup>			
Design Temperature	20°C			
Extinguishant Design Concentration (NFPA 2001) – Class C (A)	41.5%	42.7%	41.9%	38.5%
Flooding Factor (B)	0.5380	0.5581	0.5449	0.4878
Agent required	Volume of room to be protected (A) x Flooding factor (B)			
Volume of agent required (C)	85.54m <sup>3</sup>	88.74m <sup>3</sup>	86.64m <sup>3</sup>	77.56m <sup>3</sup>

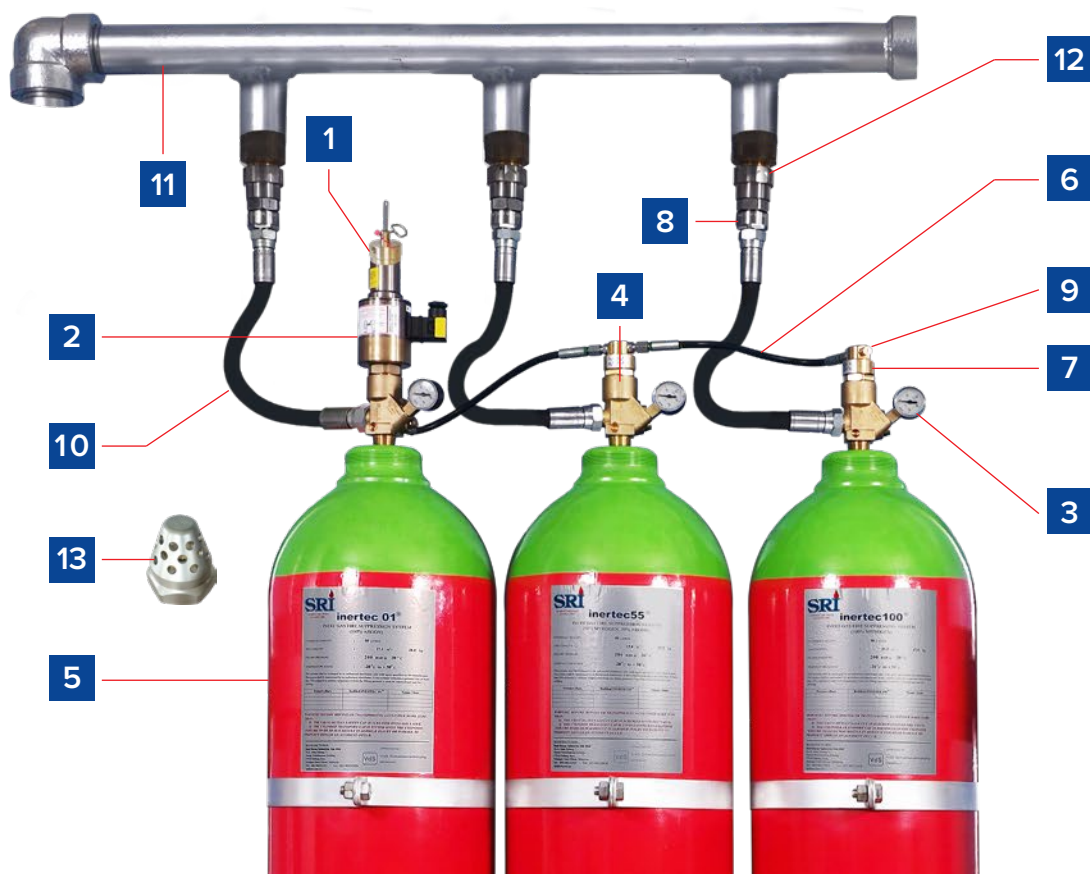
## Calculation for 80L

Agent capacity per 80 litre cylinder (D)	23.9m <sup>3</sup>	22.1m <sup>3</sup>	20.7m <sup>3</sup>	22.9m <sup>3</sup>
Number of 80 litre cylinders required	Volume of agent required (C) / Agent capacity per cylinder (D)			
Round up	4	5	5	4

## Calculation for 140L

Agent capacity per 140 litre cylinder (E)	42.23m <sup>3</sup>	38.93m <sup>3</sup>	36.4m <sup>3</sup>	39.95m <sup>3</sup>
Number of 140 litre cylinders required	Volume of agent required (C) / Agent capacity per cylinder (E)			
Round up	3	3	3	2

# Inertec-300 System Setup



Ref	Description	Part No.
1	Manual & Pneumatic Release Device	ING063
2	Electromagnetic Release Device	ING065
3	Pressure Gauge	ING068
	Pressure Gauge with Switch	ING068 (SC)
4	Inertec Valve Assembly	ING062
5	Master Cylinder capacity – 80L	ING014(80)
	Master Cylinder capacity – 140L	ING014(140)
6	Pilot Line Hose Type DN05	ING084

Ref	Description	Part No.
7	Pneumatic Release Device	ING064
8	Check Valve	ING085
9	Bleed Valve	ING088
10	Discharge Hose Type DN12/DN16	ING083
11	Sch40 Cylinder Manifold	ING090/ING091
12	Constant Pressure Regulator	ING082
13	Discharge Nozzle	ING086



# System Applications

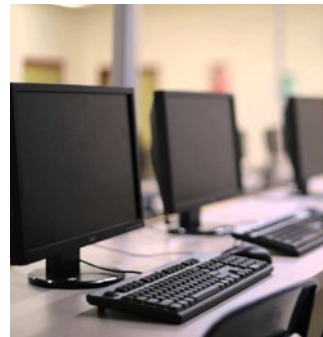
Inertec-300, the most natural and environmentally friendly fire to protect your valuable assets which uses inert gases as an extinguishing agent.



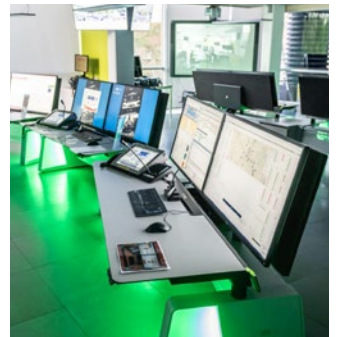
Art Galleries



Archive Storage



Computer Rooms



Control Rooms



Data Centers



Hospitals



Libraries



Museums



Power Plant



Server Rooms



Substation



Telecommunication



# System Components



## 1. Seamless Cylinders

Part No	ING014-CS-080	ING014-CS-140
Cylinder Type	80 Litre Inertec-300 Cylinder	140 Litre Inertec-300 Cylinder
Material	Chromium Molybdenum Steel	Chromium Molybdenum Steel
Filling		
- IG 01	23.9m <sup>3</sup>	42.2m <sup>3</sup>
- IG 55	22.1m <sup>3</sup>	38.9m <sup>3</sup>
- IG 100	20.7m <sup>3</sup>	36.4m <sup>3</sup>
- IG 541	21.4m <sup>3</sup>	40m <sup>3</sup>
Height without Valve	1680 +/- 10mm	1870 +/- 10mm
Empty Weight (Tare)	108kg	224kg
Diameter	279mm	356mm
Test Pressure	450 Bar	450 Bar
Standard of Compliance	TPED/ISO	TPED/ISO
Colour	Red	Red



## 2. Discharge Valve

Part No	ING062
Valve Body	Brass
Max. Working Pressure	360 Bar
Burst Disc	405 Bar
Inlet Connection	W 28.8 x 1/14" DIN (25E)
Outlet Connection	W 21.8 x 1/14" DIN / M24 x 1.5
Temperature Range	- 15°C to + 50°C



## 3. Pressure Gauge

Part No	ING068
Type	Spring Tube Manometer
Indication Range	0 to 400 Bar
Connection to Valve	M12 x 1
Temperature Range	- 15°C to + 50°C

# System Components

## 4. Pressure Gauge with Switch



Part No	ING068 (SC)
Type	NO
Indication Range	0 to 400 Bar
Switch Point	270 Bar
Switch Voltage	4.5 to 24 VDC
Switch Current	5 mA to 100 mA
Contact Load	Max 2.4W
Connection to Valve	M12 x 1
Temperature Range	- 15°C to + 50°C

## 5. Electromagnetic Actuator



Part No	ING065
Body	Brass, Stainless Steel
Nominal Voltage	24 VDC
Nominal Current	0.5 A
Connection to Valve	M36 x 1.5

## 6. Manual / Pneumatic release device



Part No	ING063
Body	Brass
Min. Actuating Pressure	8 Bar
Max Working Pressure	300 Bar
Connection to Valve	M36 x 1.5
Pneumatic Connection	1/8" BSP



## 7. Pneumatic release device

Part No	ING064
Body	Brass
Min. Actuating Pressure	20 Bar
Max Working Pressure	360 Bar
Connection to Valve	M36 x 1.5
Pneumatic Connection	1/8" BSP



# System Components

## 8. DN12/16 Discharge Hose



Part No	ING083
Material	Synthetic Rubber with High Strength Steel Platings
Max Working Pressure	360 Bar
Inlet Connection	W 21.8 x 1/14" DIN / M24 x 1.5
Outlet Connection	3/4" BSP
Hose Length	500mm
Temperature Range	- 15°C to + 50°C

## 9. Pilot Hose



Part No	ING084
Material	Synthetic Rubber Hose with 2 high tensile steel wire braids reinforcement
Max Working Pressure	360 Bar
Hose Connection	M12 x 1.5
Hose Length	400mm
Temperature Range	- 15°C to + 50°C

## 10. Check Valve



Part No	ING085
Body	Stainless Steel
Max Working Pressure	360 Bar
Inlet/ Outlet Connection	3/4" BSP
Temperature Range	- 15°C to + 50°C

## 11. Constant Pressure Regulator



Part No	ING082
Body	Brass
Outlet Pressure	60 Bar
Max Inlet Pressure	360 Bar
Manifold Connection	3/4" BSP
Temperature Range	- 15°C to + 50°C

# System Components



## 12. Discharge Nozzle

Part No	ING086
Body	Brass
Max Working Pressure	90 Bar
Max Area Coverage	30m <sup>2</sup> (5m X 6m)
Max Height	5m
Sizes	1/2", 1", 1-1/2" and 2"



## 13. Manifold

Part No	ING090 / ING091
Material (Pipe)	2" Sch 80 ASTM A106B
Connection	3/4" BSP
Max. Working Pressure	100 Bar
Test Pressure	150 Bar

## Room Integrity Test

The NFPA 2011 requires an enclosure integrity test to check for air leaks and holding times as part of the system acceptance procedure. SRI technicians are certified testers and can assist in carrying out this test using a calibrated door fan test unit.





# Detection System Components



## Gas Extinguishing Panel

Main Supply Voltage	: 230 VAC, 50/60 Hz
Internal Power Supply	: 24 VDC NOMINAL
Max. Output Current	: 3A @ 230 VAC
Battery Type	: 2 x 12VDC 7AH
Battery Charge Current	: 0.7A
Sounder Output Rating	: 21-28VDC, fused@200mA per circuit
No. of Auxiliary Outputs	: 6 (Fire, Local Fire, Extract Fan, 1st Stage, 2nd Stage, Fault)
Relay Contact Rating	: 30 VDC, 1A MAX.
Maximum Detectors	: 20 NOS.
Extinguishant Release Output	: 21-28VDC, rated at 1A for 5 mins
No. of Monitored Inputs And Type	: 6 (Manual Release, Flow Switch, Low Pressure, Mode, Hold, Abort)
Operating Environment	: -5°C to +50°C
Dimensions	: 467mm x 293mm x 29mm (lid) / 439mm x 276mm x 70mm (back box)
Standard	: EN 12094-1: 2003 / EN54-2: 1997 + A1: 2006 + A2: 2007 / EN 54-4: 1997 +A1: 2002 + A2: 2006
Approval	: LPCB
Approval No.	: 176C
Part No.	: FAS-EP203



## Battery - Sealed Lead Acid

Nominal Voltage	: 12V
Nominal Voltage	: 12V
Capacity	: 7Ah min at 20 hours Discharging Time
Dimension (L x W x H)	: 15 X 60 X 90 (mm)
Weight	: Max. 2.4kg
Approval	: UL Approved
Part No.	: FAS198-12V-7AH



## Optical Smoke Detector (EN-54)

Voltage DC	: 12 - 35V
Standby Current (Max) (µA)	: 35µA
Alarm Current (Max)	: 70mA
Surge Current	: 40µA
Start Up Time (Max)	: 60 sec
Permissible Current (Max)	: 80mA
Emitting Duty	: 3 - 5 sec
Temperature Range	: -10°C to + 50°C
Humidity	: 0 to 95% RH, Non Condensing
Materials of Body	: ABS
Colour of Body	: White
Approval	: LPCB
Approval No.	: 512a
Part No.	: FAS-EA-318-2



## Rate Of Rise Heat Detector (EN-54)

Heat Sensor Setting	: 135of(57°C) /> 20°F (6.7°C) / Minute
Voltage DC	: 10 - 35V
Start-Up Current (µA)	: 170µA
Standby Current (µA)	: 42µA
Alarm Current (Max)	: 60mA @ 24V
Max RMS. Ripple	: 25% of DC Input
Rate of Rise	: > 20°F (6.7°C) / minute
Temperature Range	: 0°C To +50°C
Materials of Body	: ABS
Colour of Body	: White
Approval	: LPCB
Approval No.	: 512d
Part No.	: FAS-EA-323-2

# Detection System Components



## 6" Alarm Bell

Operating Voltage : 24VDC  
 Alarm Current : 0.02A  
 Decibel 10ft : 92db  
 Part No. : FAS194



## Gas Release Key-switch

Dimension : 110mm W x 80mm H x 47mm D  
 Part No. : FAS260-PS-28V-RD



## Evacuate Sign

Current rating : 220mA  
 Dimension : 260 W x 105 H x 60 D mm  
 Indication : Red  
 Enclosure : Mild steel with wrinkle black  
 Part No. : FAS-260



## Abort Switch

Operating Voltage : 2 Amps @ 28VDC  
 Part No. : FAS-258



## Discharge Indicator

Operating Voltage : 24 VDC / 75mA per light on  
 Dimension : 190mm x 90mm x 110mm  
 Part No. : FAS251-24VDC-WP



## Fire Curtain

Actuated by 24VDC, 0.5Amp tripping device.  
 Install on top of louvers or opening.

Part No.	Description
FAS253-FG-XXX-WH	Fire curtain c/w steel cable
FAS254-NO-24V-RD	Box c/w solenoid tripping device



# Disclaimer

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