



global research, manufacturing, sales and service:

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Distributor:

**inertec<sup>®</sup>01**  
FIRE SUPPRESSION SYSTEMS

*IG-01 (Argon)*

**inertec<sup>®</sup>55**  
FIRE SUPPRESSION SYSTEMS

*IG-55 (Argon/Nitrogen)*

**inertec<sup>®</sup>100**  
FIRE SUPPRESSION SYSTEMS

*IG-100 (Nitrogen)*



**SRI**

**Safe,  
Effective,  
Environment-friendly**

**Vds** SCHADENVERHÜTUNG

**2015  
Edition**



# Leading The Fight Against Fire

## Integrated Solutions

Steel Recon Industries **SRI** is a Malaysian company offering a comprehensive range of fire fighting products, equipment and technology solutions worldwide since 1974. SRI is wholly owned by the SRII Group with a vast network of over 70 distributors spanning across Asia Pacific, Middle East, Europe, Africa and the Americas. Our innovative product designs and advanced manufacturing facilities have garnered international recognition from clients worldwide, underlining our commitment in providing the most reliable fire fighting equipment and solutions internationally. SRI's state of the art facility allows us to produce premium quality products at competitive prices to suit our customers' needs. Our specialized teams of fire protection engineers, support specialists and skilled technicians employ strong emphasis in continuous product improvement including systems and product modifications, which underlines our endless commitment in providing the best for our clients.

SRI is committed in providing the most comprehensive and reliable fire fighting equipment and systems parallel to our vision in protecting lives and properties. Our customers can be assured of the best in design, manufacturing, delivery, installation, training and technical support.

## Quality & Standards

SRI's wide range of fire fighting products are manufactured to international standards:

- British Standard (BS)
- European Standard (EN)
- Australian Standard (AS)
- Singapore Standard (SETSCO)
- Loss Prevention Certification Board Standard (LPCB)
- VDS Schadenverhütung Standard (VdS)
- Malaysian Standard (MS)

SRI's products are also endorsed by various acclaimed organizations:

- Kiwa Nederland BV (KIWA)
- British Standards Institution Kitemark (BSI Kitemark)
- Fire and Rescue Department of Malaysia (BOMBA)

We are ISO9001 certified by Quality Assurance Services, Australia (QAS) and obtained further certification by IQNet.

## Fire Suppression Systems

SRI has incorporated fire suppression systems technology into its extensive range of products. The inclusion of these systems has strengthened SRI's commitment as a one stop fire protection and solutions centre to all our customers.

SRI's range of fire suppression systems include:

- \* SR-200 System (HFC-227ea)
- \* CO<sub>2</sub> System
- \* Foam System
- \* Inertec System (Ag & N<sub>2</sub> Inert Gases)
- \* Fire Detection System
- \* Kitchen System (KitchenShield)

## Research & Development

SRI maintains its stance and thorough commitment to continuous products and services improvements, incorporating technology, sustainability and total solutions for its customers worldwide.



## Introduction

With the phase out of the most commonly used but environmentally damaging *Halon 1301* and  $\text{CO}_2$  fire suppressant, *inert* gases are becoming the global alternatives of choice in view of the following:

- Proven safety for people, property and the environment are natural requirements in addition to the desirable properties of effectiveness, cleanliness and zero secondary damage.
- Inert gases are the best choice for extinguishing agents as they extinguish fires by oxygen depletion by lowering the normal oxygen concentration in the air from 21% to about 12%, below the limit required for combustion while still providing a safe and breathable atmosphere.
- The composition of naturally occurring gases of **inertec**<sup>®</sup> is a preferred choice as it provides users with all the advantages of an internationally accredited and environmentally friendly protection solution without the high costs of traditional implementation of equivalents.



## ...The Natural Solution

The Montreal Protocol in 1987\* and more recently, the Kyoto Protocol\*\* of 2005 required that in addition to protecting lives and properties from fire, safeguarding the environment now plays an equally important role in the development of today's fire suppression agents. As a result, **SRI** introduced the **inertec**<sup>®</sup> fire suppression systems which meets all the three objectives of a responsible and modern fire protection system; **Protect Lives, Protect Properties and Protect the Environment.**

- **inertec**<sup>®</sup> is a gaseous clean fire suppressant comprised of nitrogen, argon or both, which are naturally occurring gas. As **inertec**<sup>®</sup> is derived from a gas present in the atmosphere, it exhibits no ozone depleting potential, does not contribute to global warming, nor does it contribute unique chemical species with extended atmospheric lifetimes and because it is totally composed of an atmospheric gas, it does not pose the problems of toxicity associated with the chemically derived Halon alternatives.
- **inertec**<sup>®</sup> fire suppression systems are developed to meet and exceed international standards and have been approved by **VdS** SCHADENVERHÜTUNG

\* The Montreal Protocol (1987) calls for a planned reduction and phase-out in the production and consumption of ozone depleting substances.

\*\* The Kyoto Protocol (2005) treaty is an international agreement to reduce the greenhouse gas emissions causing climate change. The Kyoto Protocol commits 38 industrialized countries to cut their key greenhouse gas emissions to specific levels by the year 2012.

## Protecting Life

Although early warning detection systems normally allow people to evacuate from the protected area well before any kind of fire suppression agent is discharged, any unforeseen circumstances may prevent immediate escape. This is why it is important that your fire suppression agent is safe to use in automatic total flooding systems for possible and normally occupied areas.

- Almost all fires are extinguished at the oxygen concentration level of below 15%. **inertec** fire suppression systems reduces the oxygen concentration to around 12%, a level which is acceptable to human exposure over short periods of time.
- One of the advantages of the **inertec** fire suppression agent is that it won't produce a fog, so that occupants are not visibly impaired on the way to the exit. Furthermore, the **inertec** fire suppressants are not toxic, and more importantly, they **will not** decompose into toxic or corrosive by products. Halocarbon alternative agents can create dangerous levels of hydrogen fluoride when they contact with fire.
- Inertec fire suppression agent can be used in a human exposure areas (According to NFPA2001)



## Protecting Property

**inertec** fire suppressants are ideally suited to protecting property.

Upon deployment, **inertec**

- ◆ Produces no condensation or temperature shocks that can cause harm to equipment
- ◆ Produces no harmful or decomposition by products upon contact with heat or fire
- ◆ Produces no residue, colourless, odourless, electrically non-conductive and no clean up is required.
- That's why **inertec** fire suppression systems are ideally suited for the protection of sensitive electronics and delicate high value irreplaceable assets.
- With virtually the same density as air, **inertec** fire suppressants spreads quickly throughout the protected area and holds its concentration longer to snuff out fires in their early stages. Most other heavier than air Halon alternative agents sink to the floor and seep under doors and wells.
- SRI **inertec** fire protection system is effective to suppress the following type of fires:-

Class of fire (NFPA 2001)	Class of fire (Asia)	Type of fire	Heat Sources
A	A	Surface Fires	Wood, paper, fabric, etc
B	B	Flammable Liquid Fires	Gasoline, Kerosene, etc
	C	Flammable Gas Fires	LPG, Propane, hydrogen, etc
C	E	Energized Electrical Equipment Fires	Electrical component, switches, etc.

## Protecting The Environment

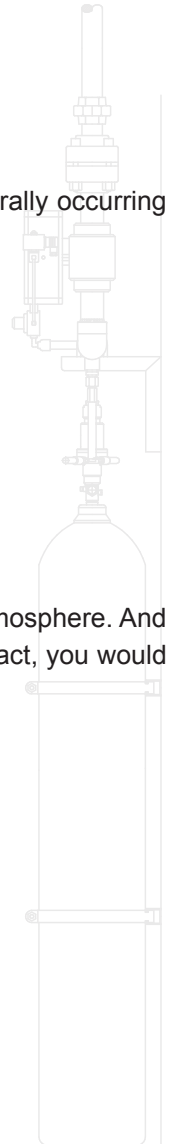
**inertec** fire suppressants are completely environment friendly. They are composed entirely of naturally occurring gases which exists in the air we breathe;

- ◆ **inertec**01 IG-01 (100% Argon)
- ◆ **inertec**55 IG-55 (50% Argon/50% Nitrogen)
- ◆ **inertec**100 IG-100 (100% Nitrogen)

In fact, the **inertec** gases presents no negative environmental impact which means...

- ◆ **ZERO** ozone depletion potential
- ◆ **ZERO** global warming potential
- ◆ **ZERO** atmospheric lifetime

When a **inertec** fire suppressant is used, it's components are simply returned to the surrounding atmosphere. And because **inertec** is not a synthetic chemical, it is not subject to potential future use restriction. In fact, you would have to ban air in order to ban **inertec**.



Because **inertec** comprise of only Argon and / or Nitrogen, it achieves zero ODP and GWP unlike other halon replacement agents which are HFC based and are classified as Greenhouse gases in the same category as CO<sub>2</sub> which contribute to Global warming.

It is with these considerations in mind that the use of CO<sub>2</sub> is avoided in **inertec** thus avoiding possible limited product lifetime dictated by changes in global environment legislation. Your **inertec** fire suppressant could be used forever as there will never be any environmental restrictions on the use of Argon and / or Nitrogen, which is the biggest element of air.

**Comparison Chart - Inertec Fire Suppression Agents to Halon 1301**

Agent	Chemical Formula	ODP	GWP (100 Years Time Horizon)	Atmospheric Lifetime (years)	Storage Pressure	Minimum design concentration
Halon 1301	CF3Br	10	6,900	65	25/42 Bar	5
Inertec01	100% Ar	0	0	0	200 Bar	40
Inertec55	50% N2 50% Ar	0	0	0	200 Bar	38
Inertec100	100% N2	0	0	0	200 Bar	37

Source :

“Scientific Assessment of Ozone Depletion : 1998.” World Meteorological Organisation, Global Ozone Research and Monitoring Project.  
Report No.44 : 1998.

# System Design and Operation

By removing one side of the fire triangle a fire can be suppressed. **inertec** system floods the enclosure to reduce the oxygen concentration level to below 15% and thus suppresses the fire.



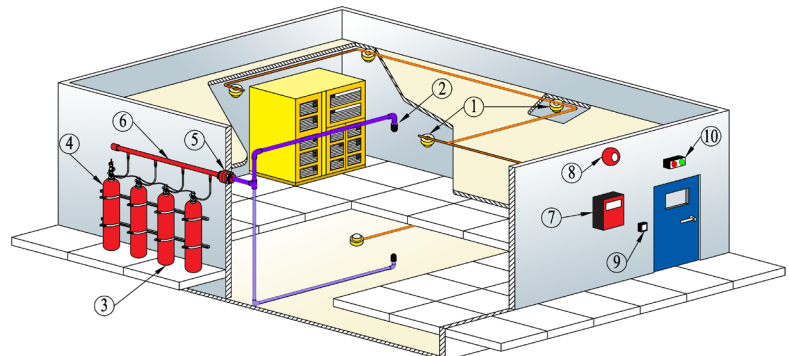
- ◆ Fuels may be in the form of Gases, Liquids or Solids
- ◆ Heat is needed to raise the fuel to its ignition temperature.
- ◆ Oxygen - 15% is required. Air contains 21%.
- ◆ When all 3 elements are present a chain reaction occurs thus causing a fire.

SRI's **inertec** systems are designed, installed and maintained according to NFPA 2001 (Clean Agent Fire Extinguishing Systems and ISO 14520 Gaseous Fire Extinguishing Systems standards).

**inertec** is a total flooding system whereby the required amount of gas is discharged into an enclosed area to extinguish fire. The gas is stored as compressed gas at 200bar or 300bar. The system can be actuated electrically from a control panel or manually actuated from the cylinder bank, and the discharged gas pressure is reduced to less than 60 bar after the manifold. The system is normally designed as such that 95% of the gas will be discharged into the protected area within 60 seconds.

Multiple storage options are possible with **inertec** as the system has been designed for long distance delivery. This means that the cylinder banks can be stored remotely from the risk area when storage space is a concern.

1. Smoke / heat detector
2. Nozzle
3. Slave cylinders
4. Master cylinder
5. Pressure reducer unit
6. Manifold
7. Control panel
8. Alarm bell
9. Manual Key Switch (break glass)
10. Discharge light



When two or more areas of protection do not require flooding of gas at the same time, directional or selector valves can be used to allow the same bank of cylinders to protect multiple areas. Such sub-systems can substantially reduce equipment costs and storage area for cylinders. Maintenance and inspection locations can also be reduced accordingly.

### Example of typical calculation for **inertec** total flooding requirement:

Dimensions of room to be protected	10.0m (L) x 5.3m (W) x 3.0m (H)	10.0m (L) x 5.3m (W) x 3.0m (H)	10.0m (L) x 5.3m (W) x 3.0m (H)
Volume of room to be protected	159.0m <sup>3</sup>	159.0m <sup>3</sup>	159.0m <sup>3</sup>
Design Temperature	20°C	20°C	20°C
Extinguishing Design Concentration	40% (for NFPA2001 Class A & C hazards)	38% (for NFPA2001 Class A & C hazards)	37.2% (for NFPA2001 Class A & C hazards)
Flooding Factor	0.5108 (NFPA 2001)	0.48 (NFPA 2001)	0.4652 (NFPA 2001)
Therefore,			
Agent required	Volume of room to be protected x Flooding Factor		
Volume of agent required	81.22m <sup>3</sup> (159 m <sup>3</sup> x 0.5108)	76.32m <sup>3</sup> (159 m <sup>3</sup> x 0.48)	73.97m <sup>3</sup> (159 m <sup>3</sup> x 0.4652)
Agent capacity per 80 litre cylinder	17.1m <sup>3</sup> (27.4kg)	15.8m <sup>3</sup> (22.2kg)	15.2m <sup>3</sup> (17.5kg)
Number of cylinders required	Agent required / Agent capacity per cylinder		
	81.22 / 17.1	76.32 / 15.8	73.97 / 15.2
	4.75	4.83	4.87
Round up to next integer	5	5	5
Therefore the number of cylinders required	5 numbers of 80L cylinders of <b>inertec 01</b>	5 numbers of 80L cylinders (providing coverage up to 76m <sup>3</sup> ) of <b>inertec 55</b>	5 numbers of 80L cylinders of <b>inertec 100</b>

# Fire Suppression System Applications



Item	Part No.	Description	Material	Approval	Approval No.
1	ING011	Valve Series B0480	Brass	VdS	G302023
2	ING012	Manual & Pneumatic Actuator B0442			
3	ING019	Pneumatic Actuator B0442			
4	ING017	Pressure Gauge Type 111.12.040		N/A	N/A
5	ING008	Discharge Hose DN 12	Wire Braided Rubber Hose	VdS	G304026
6	ING001	Check Valve 3/4"	Brass Alloy 352	VdS	G304025
7	ING009	Pressure Reducer Unit DN 50	Steel Alloy	VdS	G305006
8	ING038 ING039	Manifold Single Socket Manifold Double Socket	Sch. 160 Sch. 160	API 5L/ASTM-A 106, GRADE B	
9	ING010	Pilot Hose DN08	Wire Braided Rubber Hose	VdS	G304027
10	ING013	Electromagnetic Actuator B0442	Brass Stainless Steel	VdS	G302023
11	ING024	80L, TPED CE or DOT Cylinder	Chromium Molybdenum Steel	TUV Cert DOT 3AA	0035-154000338-2 DOT 3AA / TPED 1999/36 EC
12	ING046	Cylinder Strap	Steel	N/A	N/A
13	ING044	Cylinder Wall Bracket	Steel Alloy	N/A	N/A

DIRECTIONAL VALVE SYSTEM - OPTIONAL					
Item	Part No.	Description	Material		
14	ING027	Selector Valve DN 50 GB 2	Aluminium Alloy		
15	ING026	Discharge pressure switch model FF4	Brass		
16	CO2003-AD6112	Solenoid valve 2 way model AD6112	Brass		
17	ING033	Pressure regulator model 0-300 Bar, Output-8 Bar	N/A		

## System Components

All system components as listed must be sourced from SRI to ensure effective and safe operation. Installation and maintenance shall be carried out according to the System manuals.

\* No VdS Approval for Systems with Directional Valves.



# Inertec System Components



## INERTEC VALVE SERIES B0480

<b>Material</b>	
Valve Body	: Brass
Max. Working Pressure	: 250 Bar
Temperature Range	: - 15°C to + 50°C
Inlet Connection	: W 28.8 x 1/14" DIN
Outlet Connection	: W 21.8 x 1/14" DIN
Release Device	
Connection	: M 42 x 1.5
Pressure Gauge	
Connection	: M 10 X1
Burst Disc	: 270 Bar
Approval	: VdS
Approval No.	: G 302023 Typ B0480 – Inert Gases 200 Bar
Part No.	: ING011



## PNEUMATIC RELEASE DEVICE FOR SERIES B0442

<b>Material</b>	
Body	: Brass
Min. Actuating Pressure	: 15 Bar
Max. Working Pressure	: 250 Bar
Valve Connection	: M 42 x 1.5
Pneumatic Connection	: 1/8" BSP
Approval	: VdS
Approval No.	: G 302023 Typ B0442
Part No.	: ING019



## MANUAL / PNEUMATIC RELEASE DEVICE FOR SERIES B0442

<b>Material</b>	
Body	: Brass
Lever	: Stainless Steel
Safety Pin	: Stainless Steel
Min. Actuating Pressure	: 15 Bar
Max. Working Pressure	: 250 Bar
Valve Connection	: M 42 x 1.5
Pneumatic Connection	: 1/8" BSP
Approval	: VdS
Approval No.	: G 302023 Typ B0442
Part No.	: ING012

## CHECK VALVE 3/4"

<b>Material</b>	
Body	: Brass Alloy 352, Stainless Steel
Type	: Steel Ball Check
Max. Working Pressure	: 250 Bar
Inlet Connection	: W 21.8 X 1/14" DIN
Outlet Connection	: 3/4" BSPT
Approval	: VdS
Approval No.	: G 304025 Typ 3/4"
Part No.	: ING001



## ELECTROMAGNETIC RELEASE DEVICE FOR SERIES B0442

<b>Material</b>	
Body	: Brass, Stainless Steel
Actuating Pin	: Stainless Steel
Nominal Voltage	: 24 VDC
Nominal Current	: 1.2 A
Valve Connection	: M 42 x 1.5
Approval	: VdS
Approval No.	: G 302023 Typ B0442
Part No.	: ING013



## DISCHARGE HOSE TYP DN12

<b>Material</b>	
	: Synthetic rubber hose with 2 high tensile steel wire braids reinforcement
Max. Working Pressure	: 280 Bar
Temperature Range	: - 15°C to + 50°C
Hose Connections	: W 21.8 x 1/14" DIN
Approval	: VdS
Approval No.	: G 304026 Type DN12
Part No.	: ING008

## PILOT LINE HOSE TYP DN08

<b>Material</b>	
	: Synthetic rubber hose with 2 high tensile steel wire braids reinforcement
Max. Working Pressure	: 350 Bar
Temperature Range	: - 15°C to + 50°C
Hose Connections	: 1/8" BSP
Fitting Connections	: 1/8" BSP
Adapter Connection	
Inlet	: W 21.8 x 1/14" DIN
Outlet	: 1/8" BSP
Approval	: VdS
Approval No.	: G 304027 Typ DN08
Part No.	: ING010 - Hose, ING022 - Adapter

## Inertec System Components



### 80 LITER INERTEC CYLINDER

<b>Material</b>	
Cylinder	: Chromium Molybdenum Steel
Filling	: 15.8m <sup>3</sup> / 22.2kg – IG55 15.2m <sup>3</sup> / 17.5kg – IG100 17.1m <sup>3</sup> / 27.4kg – IG01
Filling Pressure	: 200 Bar @ 20°C
Test Pressure	: Minimum 300 Bar
Approx. Weight	: 115 kg (Tare), 137 kg (Gross)
Standard of Compliance	: DOT 3AA / TPED 1999/36/ EC or according to International Standards
Colour	: Red or Grey according to National Regulation
Part No.	: ING024



### DN50 CYLINDER MANIFOLD

<b>Material</b>	
Pipe	: 2" Sch.160 ASTM A106B or API 5L seamless pipe, galvanized
Check Valve Connection:	: 3/4" BSPT
Max. Working Pressure	: 240 Bar
Test Pressure	: 360 Bar
Aproximate Weight	: 11.5kg / m
Part No.	: ING038 / ING039



### PRESSURE REDUCER UNIT DN50

<b>Material</b>	
Flange	: Gun Metal Bronze / Carbon Steel
Orifice Plate	: Brass
Type	: Orifice Restriction
Max. Working Pressure	: 240 Bar
Test Pressure	: 375 Bar
Approval	: VdS
Approval No.	: G 305006
Part No.	: ING009-ST-XXX-NA

### INERTEC PRESSURE GAUGE WITH INTEGRATED PRESSURE SWITCH

Temperature Range	: -15°C to + 50°C
Connection to Valve	: M 10 X 1
Indication Range	: 180 - 360 Bar
Nominal Size	: 50mm
Electrical Data	: -
Contact Pin and Lug	: Gold Plated
Switch Voltage	: 4.5 to 24 VDC / VAC
Switch Current	: 5 mA to 100 mA
Contact Load	: max 3 W
Switch Point	: nominal 180 Bar
Setting	: increasing pressure max 185 bar decreasing pressure min 160 bar
Part No.	: ING018



### INERTEC SELECTOR / DIRECTIONAL VALVE

Type	: Ball valve GB2: 2 way;
Body	: Round
Material	: A105
Size	: GB2: from DN32 up to DN50
O-Rings	: NBR, FPM, MQV, EPDM, FFKM
Operating Pressure	: GB2: 350 Bar
Temp Range	: -10°C to + 100°C depending on seal materials selected
Air for Actuator	: 5.6 Bar
Part No.	: ING027

### SOLENOID VALVE

Operating voltage	: 24VDC,0:75A
Part No.	: CO2003-AD6112



### DISCHARGE NOZZLE TYP 1/2" AND TYP 1"

<b>Material</b>	
Body	: Brass
Orifice Plate	: Brass
Max. Area Coverage/	
Nozzle	: 30m <sup>2</sup> (5m (L) x 6m (W))
Max. Height	: 5m
Working Pressure	: 20 Bar (min), 60 Bar (max)
Available Orifice Diameter	
1/2" Nozzle	: 3mm - 10mm (in 1mm increments)
1" Nozzle	: 11mm - 20mm (in 1mm increments)
Approval	: VdS
Approval No.	: G 305005
Part No.	: ING002 - 1/2" Nozzle, ING004 - 1" Nozzle



### INERTEC PRESSURE GAUGE

Type	: Spring Tube Manometer Temperature
Range	: -15°C to + 50°C
Connection to Valve	: M 10 X 1
Part No.	: ING017

# Approval

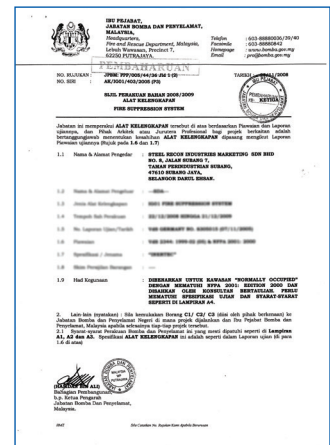
The **inertec** gas extinguishing system is approved by VdS Schadenverhütung (Loss Prevention) Germany to VDS 2452 Gas Extinguishing System Requirements and Test Methods.

All **inertec** gas extinguishing system equipment such as valve, actuator, pressure reducer, nozzle, discharge hose and check valves are certified by VdS.

VdS is a company of the German Insurance Association Gesamtverband der Deutschen Versicherungswirtschaft (GDV). For further details visit [www.vds.de](http://www.vds.de)

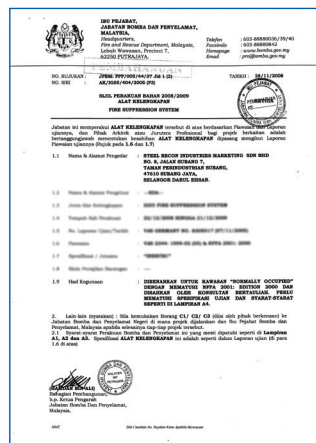


## IG-01 Bomba Cert

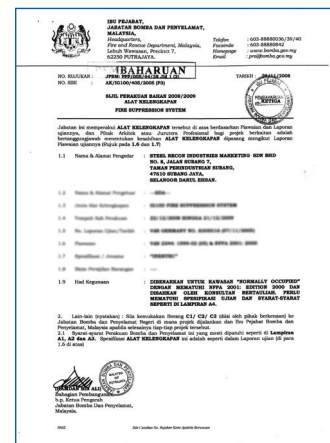


CERTIFICATE OF PRODUCT ACCEPTANCE

## IG-55 Bomba Cert



## IG-100 Bomba Cert



# Inertec Detection System



Item	Part No.	Description	Material	Approval	Approval No.
1	FAS-EP203	Gas Extinguishing Panel EP203	Metal & Plastic	LPCB	176 C
2	FAS-EA318-2	Optical Smoke Detector EA318-2	ABS	LPCB	512a
3	FAS-EA323-2	Heat Detector c/w Base EA-323	ABS	LPCB	512d
4	FAS-198-12V-7AH	Battery - Sealed Lead Acid	Plastic	UL	BAZR2.MH25408
5	FAS194	Alarm Bell	Metal	UL	S3565
6	FAS260	Manual Key Switch	Plastic	N/A	N/A
7	FAS258	Abort Switch	Plastic	N/A	N/A
8	FAS251	Double Flashing Light	LED	N/A	N/A
9	FAS253 / FAS254	Fire Curtain c/w Solenoid Tripping Device	Fabric / Stainless Steel Wire	N/A	N/A
10	FASKSB15	Evacuate Sign	Mild Steel	N/A	N/A

# 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 In Each Zone	: 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

## OPTICAL SMOKE DETECTOR (EN-54)

Voltage Dc	: 12 - 35V
Standby Current (Max) (µA)	: 35 µA
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	: 135°F(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



## SOUNDER

Operating Voltage	: 24VDC
Sound output	: 106 dB(A) at 1 mtr
Min current consumption	20mA
Part No.	: FAS-4A-CS100 : FAS-4A-Y04-24VDC



## GAS RELEASE KEY-SWITCH

Dimension	: 100mm X 100 mm X 90mm
Part No.	: FAS260-LA-28V-RD : FAS260-PS-28V-RD



## 6" ALARM BELL

Operating Voltage	: 24VDC
Alarm Current	: 0.02A
Decibel 10ft	: 92db
Part No.	: FAS-194



## EVACUATE SIGN

Current rating	: 220mA
Dimension	: 260(W)mm x 105(H)mm x 60(D)mm
Indication	: Red
Enclosure	: Mild steel with wrinkle black
Part No.	: FASKSB-15



## DISCHARGE INDICATOR

Operating Voltage	: 24 VDC / 75mA per light on
Dimension	: 190mm x 90mm x 110mm
Part No.	: FAS-251



## BATTERY - SEALED LEAD ACID

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



## ABORT SWITCH

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



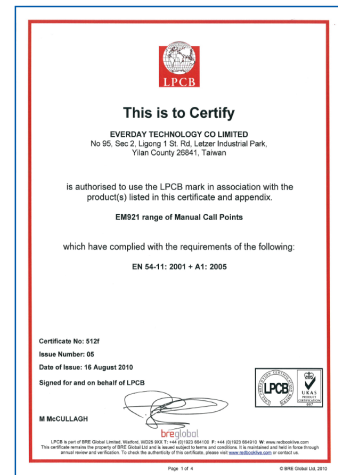
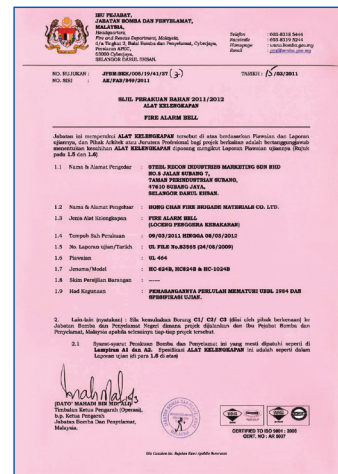
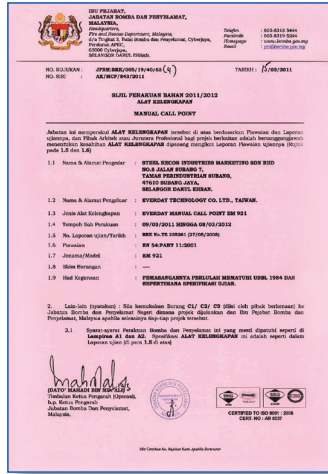
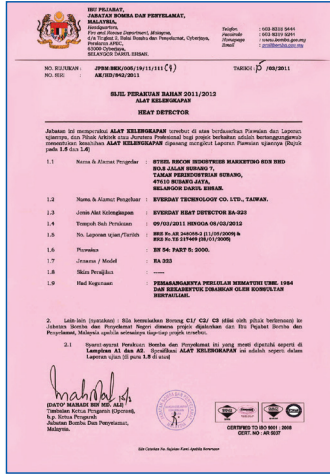
## FIRE CURTAIN

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

# Detection System Approval

The **inertec** detection system components are approved by various bodies such as LPCB, VdS, UL/FM & etc.



## Room Integrity Test



**Blower Door Systems**



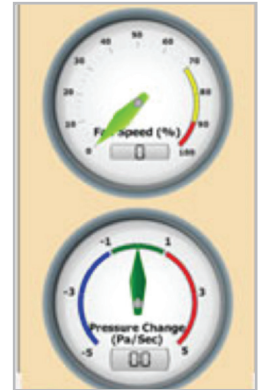
**Calibrated Fans**



**Digital Manometers**



**Accessories**



**Software**

NFPA 2001 requires an enclosure Integrity Test to check for air leaks and holding times as part of the system acceptance procedure. This test can be carried out using a calibrated blower door fan test unit by certified tester.

## Inertec System Application

Inertec fire suppression system protect enclosed areas where there is a need for quick reaction to fire, where people may be present, where fire may strike anytime or where damage from conventional agents cannot be tolerated. Some examples of such areas are:

### **Power Generation, Transmission & Distribution Facilities**

- ▶ Power Plant
- ▶ Substation control room
- ▶ Power Transmission
- ▶ Substation switch room

### **Telecommunications Facilities**

- ▶ Telephone Exchanges
- ▶ Communication Centres
- ▶ Central & Remote Cellular Sites
- ▶ Satellite Ground Stations

### **Commercial & Institutional Facilities**

- ▶ Bank Vaults & Documents Storage
- ▶ Medical Diagnosis Rooms
- ▶ Aviation & Marine Applications
- ▶ Art Galleries & Archives Storage
- ▶ Museums & Libraries
- ▶ Insurance Industry

### **Data Centres & Industrial Applications**

- ▶ Computer Rooms & Electronics
- ▶ Tape & Back Up Storage
- ▶ Pharmaceutical / Medical Facilities
- ▶ Server Rooms & Process Control Rooms
- ▶ Laboratories & Clean Rooms
- ▶ Military Installations



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Business Awards 2010*



*Malaysia  
Power Brand 2010*



*Asia Pacific Super  
Excellent Brand 2010*

