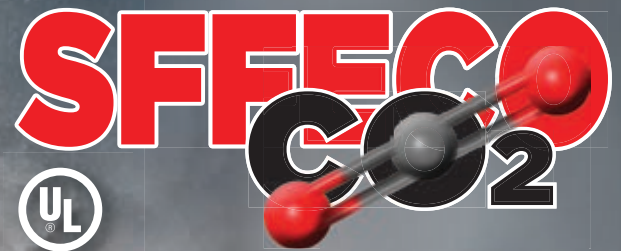




شركة المصنع السعودي لأجهزة الإطفاء  
SAUDI FACTORY FOR FIRE EQUIPMENT Co.

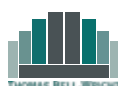
Empowering  
a **Safer Future** for  
the Kingdom



Carbondioxide  
Fire Suppression System

Technical  
Data  
Sheets

Quality Approvals for Various Products and Services



## Content

Item	Page
Extinguishing Agent	3
Extinguishing Agent Cylinder	4
Master Valve- Solenoid Valve	5
Master Valve- Differential Type	6
Master Valve- Slave Valve	7
Master Valve (Primary)	8
Slave Valve (Secondary)	9
Discharge Hoses	10
Non-Return Valve	11
Directional Valve	12
Lock out Valve	13
Inline Check Valve	14
Bleeder Valve	15
Safety Release Valve	16
Pressure Switch	17
Discharge Nozzle-Dome Type	18
Discharge Nozzle-Open Type	19
Discharge Nozzle-Reset Type	20
Canister	21
Manual Actuator	22
Pressure Operated Siren	23
Time Delay Unit	24
Single Row Cylinder battery frame unit with Manifold	25
Double Row Cylinder battery frame unit with Manifold	26
Air Connection Assembly	27
Weight Loss Unit - Mechanical	8

## Extinguishing Agent

### Carbondioxide (CO2)

#### Description

Carbon Dioxide is an odorless, colorless, electrically non-conductive, non-corrosive, and non-deteriorating inert suppression agent. Carbon Dioxide is approximately 50% heavier than air, and is normally present in the atmosphere at about 0.03% by volume. Carbon Dioxide is instrumental in controlling respiration and other vital responses in animals and humans, but it WILL NOT support life.

Carbon Dioxide is a standard commercial product commonly used for carbonating beverages, fast-freezing food products, purging pipes and tanks, medical purposes, and a multitude of additional tasks. It is also used for fire fighting purposes: i.e. hose reels, portable hand extinguishers, and engineered fixed pipe systems. Carbon Dioxide is available in most large cities and seaports throughout the world.

Carbon Dioxide extinguishes fire by reducing the oxygen content of the protected space and/or local flame front to a point where it will not support combustion. Oxygen reduction below 16% by volume will extinguish most fires. Surface or "flash" type fires (oils, paints, etc.) are quickly extinguished. Deep-seated or "smoldering" type fires (paper, baled cotton, clothing, etc.) are extinguished by the prolonged action of a high concentration of Carbon Dioxide. Retaining the agent within the protected space reduces the fire's ability to re-ignite. In addition, Carbon Dioxide has a cooling effect on the surrounding atmosphere that has been found to be a benefit to fire extinguishment.

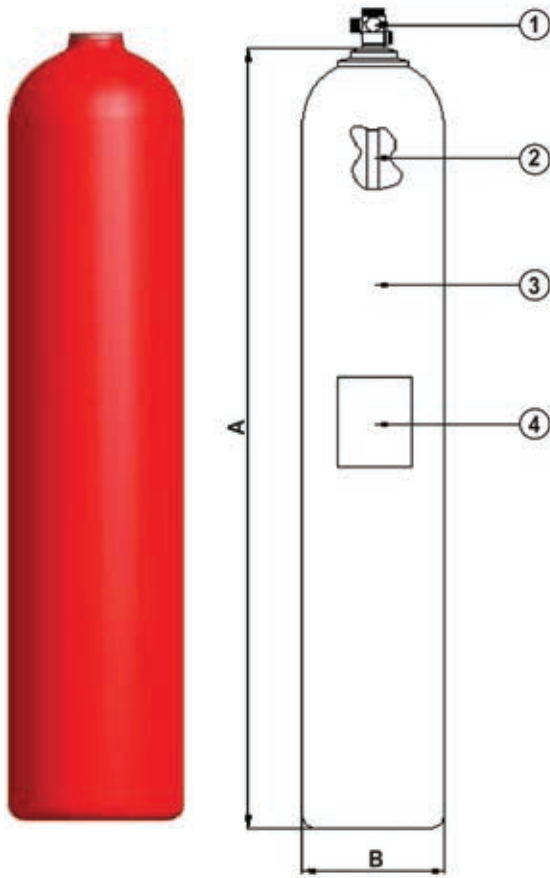
#### Specification

Chemical Name	Carbon Dioxide
Chemical Formula	CO <sub>2</sub>
Molecular Weight	44.01
Critical Temperature	31.00C
Boiling Point	-109.30F
Vapor Pressure @ 68OF	832 PSIG
Vapor Density @ 68OF	1.53
Solubility in Water @ 68OF	87.8% by Volume
Appearance and Odor	Colorless Gas, Slight Pungent Odor

## Extinguishing Agent Cylinder – 68 LTRS.

**Size: 45 KG**

**P/N: SFR-CDES-CY-45**



**Description:**

The CO<sub>2</sub> cylinder is the main storage unit of a carbon dioxide extinguishing system. It holds carbon dioxide in a pressurized condition until the system is activated. The cylinder is designed to safely contain the extinguishing agent and release it quickly when required. It forms the core component of the system, ensuring that the required quantity of CO<sub>2</sub> is available for effective fire suppression.

**CO<sub>2</sub> Cylinder - 68 LTRS.**

Make	SFFECO
Standard	IS: 7285
Material	37Mn
Cylinder Diameter	267 mm
Cylinder Neck Thread	3/4" NGT
Filling Density	0.667 Kg/Ltrs. Maximum
Temperature Rating	-20°C to +54.4°C
Test Pressure	250 Bar / 340 Bar
Working Pressure	150 Bar / 200 Bar

Size : A=1450mm, B= 270mm  
Capacity : 45 Kgs

**DESIGN DATA**

Water Capacity:	68 Liters
Filling Density:	0.667 Kg/Litre maximum
Storage Pressure:	60 Bars
Working Pressure:	150 Bar / 200 Bar
Test pressure:	340 Bar
Weight (Empty):	80 Kg. (Approx.)
Gross Weight:	130 Kg. (Approx.)

## Master Valve- Solenoid Valve

Size: 3/4"

P/N: SFR-CDES-DC-01



Master Valve - Solenoid Valve	P/N: SFR-CDES-DC-01
Standard	UL 2127, NFPA 12
Material	Brass
Threads	Inlet: 3/4" NGT, Outlet: 7/8" UNF
Electric Operation	24 VDC
Temperature Ratings	-18°C to +54.4° C
Test Pressure	207 Bar

## Master Valve – Differential Type

Size: 3/4”

P/N: SFR-CDES-DC-02



Master Valve – Differential Type	P/N: SFR-CDES-DC-02
Standard	UL 2127, NFPA 12
Material	Brass
Threads	Inlet: 3/4” NGT, Outlet: 7/8” UNF
Electric Operation	24 VDC
Temperature Ratings	-18°C to +54.4° C
Test Pressure	207 Bar

## Slave Valve

Size: 3/4"

P/N: SFR-CDES-DC-03



Master Valve- Slave Valve	P/N: SFR-CDES-DC-03
Standard	UL 2127, NFPA 12
Material	Brass
Threads	Inlet: 3/4" NGT, Outlet: 7/8" UNF
Temperature Ratings	-18°C to +54.4° C
Test Pressure	207 Bar

## Master Valve (Primary)

Size: 3/4"

P/N: SFD-CDES-DC-04A



Master Valve (Primary)	P/N: SFD-CDES-DC-04A
Standard	UL 2127, NFPA 12
Material	Brass
Threads	Inlet: 3/4" NGT, Outlet: 7/8" UNF
Temperature Ratings	-18°C to +54.4° C
Electric Operation	24 VDC
Test Pressure	207 Bar

## Slave Valve (Secondary)

Size: 3/4"

P/N: SFR-CDES-DC-05



Slave Valve (Secondary)	P/N: SFR-CDES-DC-05
Standard	UL 2127, NFPA 12
Material	Brass
Threads	Inlet: 3/4" NGT, Outlet: 7/8" UNF
Temperature Ratings	-18°C to +54.4° C
Test Pressure	207 Bar

## Discharge Hose

**Size: 1/2"**

**P/N: SFR-CDES-DC-06**



**Check Valve with Flexible Discharge Hose  
Size: 1/2"**

**P/N: SFR-CDES-DC-07**



**Flexible Interconnecting Hose  
Size: 1/4"**

**P/N: SFR-CDES-DC-08**



Hose Type	Flexible Discharge Hose	Check Valve with Flexible Discharge Hose	Flexible Interconnecting Hose
P/N:	SFR-CDES-DC-06	SFR-CDES-DC-07	SFR-CDES-DC-08
Standard	UL 2127, NFPA 12	UL 2127, NFPA 12	UL 2127, NFPA 12
Material	Hose: Flexible Wire Braided Rubber End Fittings: Stainless Steel	Hose: Flexible Wire Braided Rubber End Fittings: Stainless Steel	Hose: Flexible Wire Braided Rubber End Fittings: Stainless Steel
Threads	7/8" UNF (F) x 7/8" UNF (F)	3/4" BSP (M) X 7/8" UNF (F)	3/8" BSP (M) X 3/8" BSP (M)
Temperature Ratings	-18°C to +54.4° C	-18°C to +54.4° C	-18°C to +54.4° C
Test Pressure	173 Bar	173 Bar	173 Bar

**Non-Return Valve**



**P/N: SFR-CDES-DC-09**

**Size: 1/2"**



**P/N: SFR-CDES-DC-10**

**Size: 3/4"**

Non-Return Valve	P/N: SFR-CDES-DC-09	P/N: SFR-CDES-DC-10
Standard	UL 2127, NFPA 12	UL 2127, NFPA 12
Material	Stainless Steel	Stainless Steel
Threads	7/8" UNF (M) x 1/2" BSP (M)	7/8" UNF (M) x 3/4" BSP (M)
Temperature Ratings	-18°C to +54.4° C	-18°C to +54.4° C
Test Pressure	173 Bar	173 Bar

## Directional Valve

Size: 1”

Size: 1¼”

Size: 1½”

Size: 2”

P/N: SFR-CDES-DC-11

P/N: SFR-CDES-DC-12

P/N: SFR-CDES-DC-13

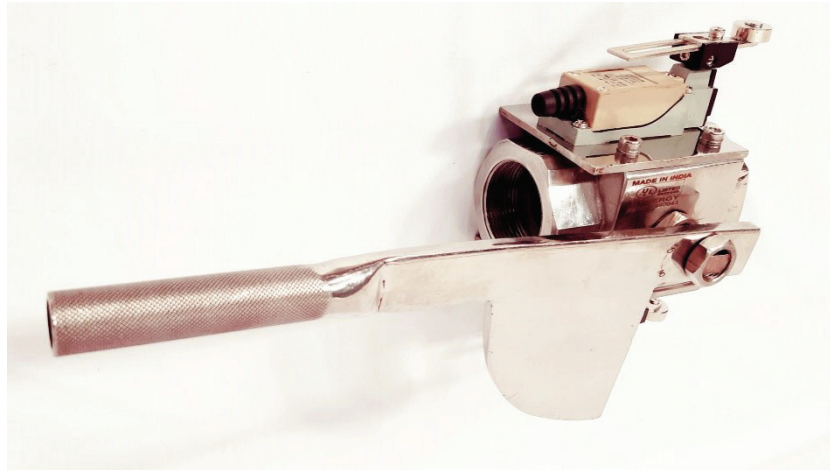
P/N: SFR-CDES-DC-14



Directional Valve	P/N: SFR-CDES-DC-11	P/N: SFR-CDES-DC-12	P/N: SFR-CDES-DC-13	P/N: SFR-CDES-DC-14
Standard	UL 2127, NFPA 12	UL 2127, NFPA 12	UL 2127, NFPA 12	UL 2127, NFPA 12
Material	Body : Stainless Steel, Pipes : M.S. Seamless (SCH.80)	Body : Stainless Steel, Pipes : M.S. Seamless (SCH.80)	Body : Stainless Steel, Pipes : M.S. Seamless (SCH.80)	Body : Stainless Steel, Pipes : M.S. Seamless (SCH.80)
Ends	1” Flanged	1 ¼” Flanged	1 ½” Flanged	2” Flanged
Temperature Ratings	-18°C to +54.4° C	-18°C to +54.4° C	-18°C to +54.4° C	-18°C to +54.4° C
Test Pressure	173 Bar	173 Bar	173 Bar	173 Bar
Operating Pressure	>10 bar	>10 bar	>10 bar	>10 bar

## Lock out Valve

Size: 1"	P/N: SFR-CDES-DC-15
Size: 1¼"	P/N: SFR-CDES-DC-16
Size: 1½"	P/N: SFR-CDES-DC-17
Size: 2"	P/N: SFR-CDES-DC-18



Lock out Valve	P/N: SFR-CDES-DC-15	P/N: SFR-CDES-DC-16	P/N: SFR-CDES-DC-17	P/N: SFR-CDES-DC-18
Standard	UL 2127, NFPA 12	UL 2127, NFPA 12	UL 2127, NFPA 12	UL 2127, NFPA 12
Material	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Threads	1" BSP (F)	1 1/4" BSP (F)	1 1/2" BSP (F)	2" BSP (F)
Temperature Ratings	-18°C to +54.4° C	-18°C to +54.4° C	-18°C to +54.4° C	-18°C to +54.4° C
Test Pressure	173 Bar	173 Bar	173 Bar	173 Bar

## Inline Check Valve

Size: 1"	P/N: SFR-CDES-DC-20
Size: 1¼"	P/N: SFR-CDES-DC-21
Size: 1½"	P/N: SFR-CDES-DC-22
Size: 2"	P/N: SFR-CDES-DC-19



Inline Check Valve	P/N: SFR-CDES-DC-20	P/N: SFR-CDES-DC-21	P/N: SFR-CDES-DC-22	P/N: SFR-CDES-DC-19
Standard	UL 2127, NFPA 12	UL 2127, NFPA 12	UL 2127, NFPA 12	UL 2127, NFPA 12
Material	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Threads	1" BSP (F)	1 1/4" BSP (F)	1 1/2" BSP (F)	2" BSP (F)
Temperature Ratings	-18°C to +54.4° C	-18°C to +54.4° C	-18°C to +54.4° C	-18°C to +54.4° C
Test Pressure	173 Bar	173 Bar	173 Bar	173 Bar

## Bleeder Valve

**Size: 2"**

**P/N: SFR-CDES-DC-23**



Bleeder Valve	P/N: SFR-CDES-DC-23
Standard	UL 2127, NFPA 12
Material	Stainless Steel
Threads	3/8" BSP (M)
Temperature Ratings	-18°C to +54.4° C
Test Pressure	173 Bar
Leakage Pressure	Leaks up to 5 Bar

## Safety Release Valve

Size: 3/8"

P/N: SFR-CDES-DC-24



Safety Release Valve	P/N: SFR-CDES-DC-24
Standard	UL 2127, NFPA 12
Material	Stainless Steel
Threads	1/2" BSP (M)
Temperature Ratings	-18°C to +54.4° C
Test Pressure	173 Bar
Operating Pressure	170 ± 5 Bar

## Pressure Switch

Size: 1/2"

P/N: SFR-CDES-DC-25



Pressure Switch	P/N: SFR-CDES-DC-25
Standard	UL 2127, NFPA 12
Material	Stainless Steel
Threads	1/2" BSP
Temperature Rating	-18°C to +54.4° C
Test Pressure	173 Bar
Operating Pressure	5 Bar

## Discharge Nozzle-Dome Type

Size: 1/2"

P/N: SFR-CDES-DC-26



Discharge Nozzle-Dome Type	P/N: SFR-CDES-DC-26
Standard	UL 2127, NFPA 12
Material	Stainless Steel
Threads	1/2" BSP (F)
Temperature Ratings	-18°C to +54.4° C
Orifice Size	As per requirement

## Discharge Nozzle – Open Type

Size: 1/2”

P/N: SFR-CDES-DC-27



Discharge Nozzle-Open Type	P/N: SFR-CDES-DC-27
Standard	UL 2127, NFPA 12
Material	Stainless Steel
Threads	1/2” BSP (M)
Temperature Ratings	-18°C to +54.4° C
Orifice Size	As per requirement

## Discharge Nozzle-Reset Type

Size: 1/2"

P/N: SFR-CDES-DC-28



Discharge Nozzle-Reset Type	P/N: SFR-CDES-DC-28
Standard	UL 2127, NFPA 12
Material	Stainless Steel
Threads	1/2" BSP (M)
Temperature Ratings	-18°C to +54.4° C
Orifice Size	As per requirement (Room Size)

## Canister

**P/N: SFR-CDES-AC-01**



Canister	P/N: SFR-CDES-AC-01
Standard	UL 2127, NFPA 12
Material	Stainless Steel
Threads	1/8" BSP (F)
Temperature Ratings	-20°C to +55° C
Test Pressure	207 Bar

## Manual Actuator

Size: M11 x 1.5

P/N: SFR-CDES-AC-02



Manual Actuator	P/N: SFR-CDES-AC-02
Standard	UL 2127, NFPA 12
Material	Stainless Steel
Threads	M11 x 1.5

## Pressure Operated Siren

Size: 1/2"

P/N: SFR-CDES-AC-03



Pressure Operated Siren	P/N: SFR-CDES-AC-03
Standard	UL 2127, NFPA 12
Material	Body : Brass Cover : Stainless Steel
Threads	1/2" BSP (M)
Temperature Rating	-18°C to +54.4° C
Operating Pressure	> 10 Bar

## Time Delay Unit (30 Seconds)

Size: 3/4"

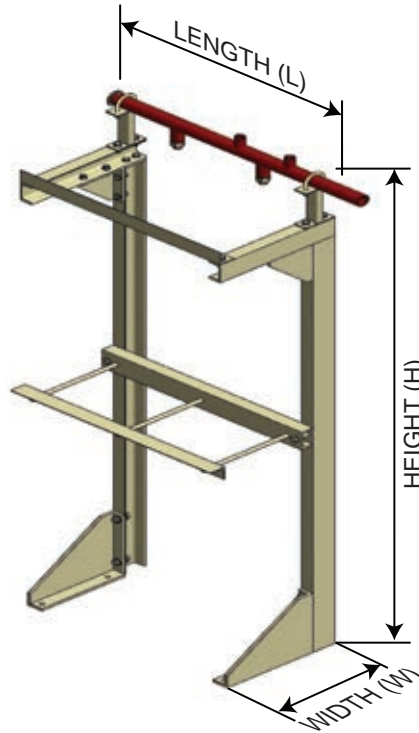
P/N: SFR-CDES-AC-04



Time Delay Unit	P/N: SFR-CDES-AC-04
Standard	UL 2127, NFPA 12
Material	Cylinder : 37Mn Valve : Stainless Steel
Threads	3/4" NGT x 1/2" BSP x 1/2" BSP
Temperature Rating	-18°C to +54.4° C
Test Pressure	Cylinder : 250 Bar Valve : 207 Bar
Time Delay	30 Seconds

## Single Row Cylinder battery frame unit with Manifold

**P/N: SFR-CDES-ME-01-xx(a)**



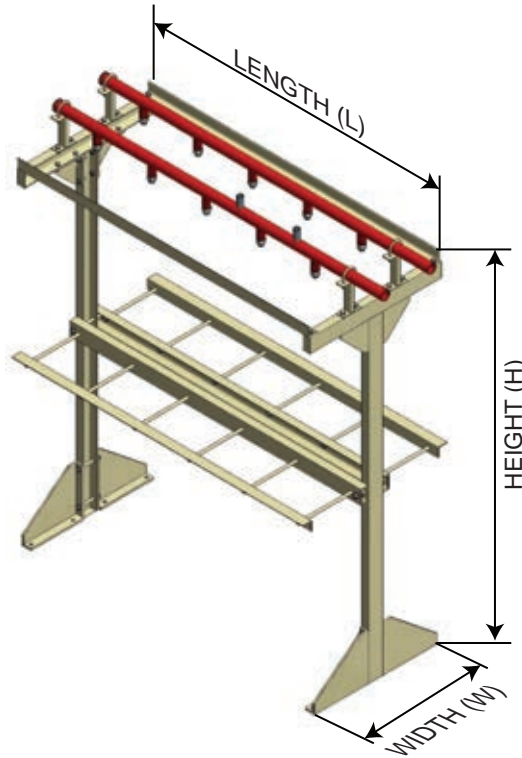
Single Row Cylinder battery frame unit with Manifold	P/N: SFR-CDES-ME-01-xx(a)
Standard	UL 2127, NFPA 12
Material	Battery Frame : Mild Steel Manifold : Seamless (SCH.80)
Temperature Ratings	-18°C to +54.4° C
Test Pressure	173 Bar

(a) Where xx indicates the number of cylinders

NOTE: L, H, & W shall be as per cylinder number, diameter and height.

## Double Row Cylinder battery frame unit with Manifold

P/N: SFR-CDES-ME-02-xx(a)



Double Row Cylinder battery frame unit suitable for 10 cylinder unit with Manifold	P/N: SFR-CDES-ME-02-xx(a)
Standard	UL 2127, NFPA 12
Material	Battery Frame : Mild Steel Manifold : Seamless (SCH.80)
Size	L-1870 x W-860 x H-2050
Temperature Ratings	-18°C to +54.4° C
Test Pressure	173 Bar

(a) Where xx indicates the number of cylinders

NOTE: L, H, & W shall be as per cylinder number, diameter and height.

## Air Connection Assembly

**P/N: SFR-CDES-ME-08**



Air Connection Assembly	P/N: SFR-CDES-ME-08
Standard	UL 2127, NFPA 12
Material	Stainless Steel
Threads	1/2" BSP (F) x 1/2" BSP (F)
Temperature Ratings	-18°C to +54.4°C
Test Pressure	173 Bar

## Weight Loss Unit – Mechanical

**P/N: SFR-CDES-ME-09**



<b>Weight Loss Unit - Mechanical</b>	<b>P/N: SFR-CDES-ME-09</b>
Standard	UL 2127, NFPA 12
Material	Mild Steel
Audio Visual Alarm	Starts on Weight Loss of 10% and above
Temperature Ratings	-18°C to +54.4° C
Operating Voltage	24VDC



Since 1983, SFFECO has been a trusted name in fire protection, known for innovation and quality worldwide.

With state-of-the-art facilities in Riyadh and Dubai, we deliver a complete range of firefighting solutions that meet international standards.

Our innovative approach and comprehensive product portfolio make SFFECO the one-stop destination for reliable fire protection products and services.

## شركة المصنع السعودي لأجهزة الإطفاء SAUDI FACTORY FOR FIRE EQUIPMENT Co.

### FACTORY & HEAD OFFICE - RIYADH

2nd Industrial Area, Al-Kharj Road, Riyadh, KSA, P.O. Box: 58469, Riyadh 11515  
Tel : +966 11 2650070, E-mail: riyadh@sffeco.com.sa

### JEDDAH BRANCH

P.O. Box: 16769, Jeddah - 21474, KSA  
Tel : +966 12 670 6009,  
E-mail: jeddah@sffeco.com.sa

### DAMMAM BRANCH

P.O. Box: 7162, Dammam - 31462, KSA  
Tel : +966 13 8351961,  
E-mail: dammam@sffeco.com.sa

### MADINAH BRANCH

Tel : 0148660959, 0148283256,  
E-mail: madinah@sffeco.com.sa

