



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

Empowering  
a **Safer Future** for  
the Kingdom

# Technical Data Sheets

**SFFECO-227** PRIME  
**HFC-227ea**  
CLEAN AGENT  
FIRE SUPPRESSION SYSTEM

# PRIME SERIES

Clean Agent  
Fire Extinguishing  
Systems



Quality Approvals for Various Products and Services



## The Global Standard in Fire Safety

Since 1983, SFFECO has been the trusted name and a recognized global leader in manufacturing top-tier fire-fighting equipment. We don't just offer products; we provide total fire safety solutions like fire doors, fire cabinets, fire pumps, fire extinguishing systems, etc. Our commitment to excellence is certified by multiple international standards, including ISO 9001 (Quality), ISO 14001 (Environmental), and ISO 45001 (Health & Safety). With state-of-the-art facilities in Riyadh and Dubai, we ensure every product meets rigorous international quality standards.

## One-Stop-Shop for Fire Protection

SFFECO is your single source for everything in fire protection and fire-fighting. Represented in over 100 countries through a vast network of dealers, our innovative approach and comprehensive, end-to-end product range deliver the full spectrum of solutions you need. We're dedicated to keeping you safe and updated, constantly integrating the latest fire-fighting technology into our knowledge and services. Choose SFFECO and get certified quality, global reach, and pioneering innovation—all in one place.



### Quality Services

SFFECO is deeply committed to ensuring superior performance and accuracy in every product it delivers. This dedication is maintained through continuous, close collaboration with a wide array of stakeholders, including key certification bodies, government regulatory agencies, industry partners, and leading technology associations. This concerted effort focuses on the development and delivery of truly innovative and high-quality fire-fighting solutions. The commitment to excellence is rigorously upheld through extensive product testing and evaluation, alongside a strict, ongoing process for continued product quality compliance, guaranteeing that SFFECO's equipment operates with assured reliability when it matters most.

SFFECO is dedicated to providing fire safety products of the highest quality and performance. We achieve this by working closely with certification bodies, government regulatory agencies, industry partners, and technology associations. This collaboration ensures our innovative products are backed by extensive product testing and evaluation, and maintained through continuous quality compliance.

As global leaders since 1983, SFFECO believes in manufacturing quality products and offering exceptional service standards worldwide. Our primary goal is to reward our customers by keeping their investments safe and secure. Our manufacturing plant has steadily grown and is now equipped with modern hi-tech equipment and staffed by highly skilled professionals. With optimal ISO-certified operations, we consistently roll out products that match global standards to serve the needs of the growing fire safety market.



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## Extinguishing Agent Cylinder UL/FM

### SFFECO Prime 227 (Drawn) 22L, 40L, 80L, 140L, and 180L

#### Approvals



- 1) Listed system covered by UL-file EX15997 (SFFECO Prime 227). Extinguishing agent cylinders must only be filled by refilling companies which are listed in UL-file EX15997.
- 2) Valve type B and B25 without UL / ULC approval
- 3) Part of the system approval

#### Maintenance

see technical description valve B0481 DN49 / B0482 DN33  
part no. 887866

Pressure at 21 °C (70 °F)	Steel-cylinder <sup>6)</sup>						Nominal volume  l (lbs)	Part no.		Amount filled <sup>4)</sup>			Empty weight  approx. kg (lbs)
	UN/π	EAC	TC	DOT	ABS	LR		Valve type <sup>5)</sup>		min.  CE kg (lbs)	max.		
								A / A25	B / B25 (not UL / ULC)		CE / UL / ULC / FM	CE / UL / ULC / FM	
bar (psi)									kg (lbs)	kg (lbs)	kg (lbs)		
25 (360)	•	•	-	-	-	-	22.0 (55)	926210	926211	8.8 (19.5)	11 (24.3)	25.0 (55.2)	50 (110)
	•	•	-	-	-	-	40.0 (100)	926212	926213	16 (35.3)	20 (44.1)	45.6 (100.5)	59 (130)
	•	•	-	-	-	-	80.0 (200) <sup>7)</sup>	926236	926237	32 (70.6)	40 (88.2)	91.2 (201.0)	104 (229)
	•	•	•	•	•	•	80.0 (200) <sup>8)</sup>	926234	926235	32 (70.6)	40 (88.2)	91.2 (201.0)	99 (218)
	•	•	•	•	•	•	140.0 (350)	926238	926239	56 (123.5)	70 (154.4)	159.6 (351.8)	131 (289)
	•	•	•	•	•	•	180.0 (450)	926240	926241	72 (158.8)	90 (198.5)	205.2 (452.3)	179 (395)
42 (610)	•	•	-	-	-	-	22.0 (55)	926214	926215	8.8 (19.5)	11 (24.3)	25.0 (55.2)	50 (110)
	•	•	-	-	-	-	40.0 (100)	926216	926217	16 (35.3)	20 (44.1)	45.6 (100.5)	59 (130)
	•	•	-	-	-	-	80.0 (200) <sup>7)</sup>	926244	926245	32 (70.6)	40 (88.2)	91.2 (201.0)	104 (229)
	•	•	•	•	•	•	80.0 (200) <sup>8)</sup>	926242	926243	32 (70.6)	40 (88.2)	91.2 (201.0)	99 (218)
	•	•	•	•	•	•	140.0 (350)	926246	926247	56 (123.5)	70 (154.4)	159.6 (351.8)	131 (289)
	•	•	•	•	•	•	180.0 (450)	926248	926249	72 (158.8)	90 (198.5)	205.2 (452.3)	179 (395)
50 (725)	•	•	-	-	-	-	22.0 (55)	926218	926219	8.8 (19.5)	11 (24.3)	23.1 (50.9)	50 (110)
	•	•	-	-	-	-	40.0 (100)	926220	926221	16 (35.3)	20 (44.1)	42 (92.5)	59 (130)
	•	•	-	-	-	-	80.0 (200) <sup>7)</sup>	926252	926253	32 (70.6)	40 (88.2)	84 (185.1)	104 (229)
	•	•	•	•	•	•	80.0 (200) <sup>8)</sup>	926250	926251	32 (70.6)	40 (88.2)	84 (185.1)	99 (218)
	•	•	•	•	•	•	140.0 (350)	926254	926255	56 (123.5)	70 (154.4)	147 (324)	131 (289)
	•	•	•	•	•	•	180.0 (450)	926256	926257	72 (158.8)	90 (198.5)	189 (416.6)	179 (395)

#### 4) Order informations

The order has to be specified with the filling quantity.  
The extinguishing agent HFC-227ea part no. 889298  
must be ordered additionally.

#### 5) Valve type A / A25 (25 bar):

Valve B0482-A DN33 / B0481-A DN49  
Valve B0482-A25 DN33 / B0481-A25 DN49 (for 25 bar)

#### Valve type B / B25 (25 bar):

(Valves with integrated electrical release)  
Valve B0482-B DN33 / B0481-B DN49  
Valve B0482-B25 DN33 / B0481-B25 DN49 (for 25 bar)

#### 6) Approval with collective certificate by:

- UN/π, notified body according to European directive 2010/35/EU
- EAC, notified body according to techn. regulations TR ZU 032/2013
- UN, design of steel cylinder as UN Pressure Receptacles
- TC (Transport Canada)
- DOT (US Department of Transportation)
- ABS (American Bureau of Shipping)
- LR (Lloyd's Register)

<sup>7)</sup> 80.0 l - Exting. agent cylinder with øD = 267 mm (10.51")

<sup>8)</sup> 80.0 l - Exting. agent cylinder with øD = 406 mm (15.98")

## Extinguishing Agent Cylinder UL/FM

### SFFECO Prime 227 (Drawn) 22L, 40L, 80L, 140L, and 180L

#### Technical data

Extinguishing agent .....HFC-227ea

Min. fill ratio:

- CE .....0.4 kg/l (25.0 lbs/ft<sup>3</sup>)
- UL / ULC / FM .....0.5 kg/l (31.1 lbs/ft<sup>3</sup>)

Max. fill ratio, 25 bar / 42 bar (360 psi / 610 psi):

- CE / UL / ULC / FM .....1.14 kg/l (71.1 lbs/ft<sup>3</sup>)

Max. fill ratio, 50 bar (725 psi):

- CE / UL / ULC / FM .....1.05 kg/l (65.5 lbs/ft<sup>3</sup>)

Operating temperature range:

- .....-20 °C to +50 °C (-4 °F to 122 °F)
- UL / ULC / FM .....-18 °C to +50 °C (0 °F to 122 °F)

Cylinder filled .....by a qualified filling centre

Filling report .....with order no. and cylinder no.

Transport .....see safety data sheet

Valves .....see cylinder valve

#### Technical data steel cylinder (blank):

Steel cylinder made in China .....seamless (drawn)

Working pressure .....max. 60 bar / 60 °C (870 psi / 140 °F)

Finish .....RAL3000 - flame red

(Note: colour, colour type are part of the UL / ULC approval)

Marking and stamping according to:

- UN/π .....acc. to directive 2010/35/EU, ISO 13769
- EAC ...Eurasian Economic Union and regulations TR ZU 032/2013
- UN .....UN Model Regulations
- TC .....TC regulations
- DOT .....DOT regulations
- ABS .....ABS regulations
- LR .....LR regulations

Additional marking:

- Owner marking .....MF
- Owner no. (acc. to order) .....xxxxxxx
- Tare weight .....xxxxxxx

#### Not included in delivery

Adapter M12x1.5 - G1/8 .....887644, see ad-on part cylinder

Contact pressure gauge .....see monitoring device

Clamp for extinguishing agent cyl. ....see cylinder rack

#### Release devices for valve type A / A25 and B / B25:

Pneumatic, Pneumatic/Manual, Manual,

Tackle pneumatic/manual - marine .....see ad-on part cylinder

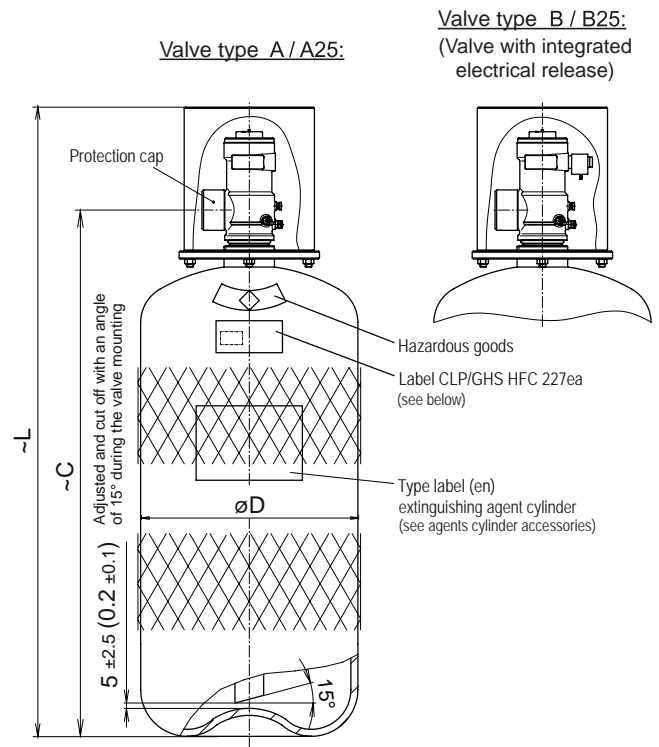
#### Release devices for valve type A / A25 only:

Electrical and

Electrical with mech. blocking device .....see ad-on part cylinder

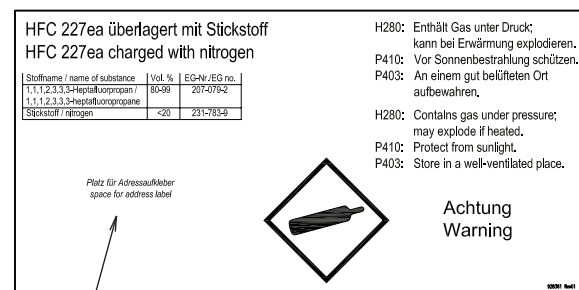
#### Dimension drawing

Dimensions in mm (inch)



Nominal volume	~L	~C	øD ±3 (±0.12)	Nominal diameter valve
22.0 l (60 lbs)	970 (38.19)	749 (29.49)	232 (9.13)	DN33
40.0 l (100 lbs)	1450 (57.09)	1229 (48.39)	232 (9.13)	
80.0 l (220 lbs)	2000 (78.74)	1797 (70.75)	267 (10.51)	
80.0 l (220 lbs)	1090 (42.91)	887 (34.92)	406 (15.98)	DN49
140.0 l (390 lbs)	1570 (61.81)	1367 (53.82)	406 (15.98)	
180.0 l (500 lbs)	1910 (75.20)	1707 (67.20)	406 (15.98)	

#### Label CLP/GHS HFC 227ea



Address label of the distributor (system manufacturer) according to order

## Valve B0482 – A25 and B0482 – A

### DN33



#### Approvals / CE marking



1) Listed system covered by UL-file EX15997 (SFFECO Prime FK, SFFECO Prime 227)

2) Part of the system approval

#### SAP designation

e.g. part no. 887964: Valve B0482-A25 DN33

#### Maintenance

see technical description valve B0481 DN49 / B0482 DN33 part no. 887866

#### Spare parts

- Bursting disk 63.5 bar for B0482-A25, part no. 915518
- Bursting disk 89 bar for B0482-A, part no. 888026

Designation		Part no.	Working pressure at 21 °C (69.8 °F)	Weight approx.
Valve	B0482-A25 DN33	88 7964	25 bar (360 psi)	4.4 kg (9.7 lbs)
	B0482-A DN33	88 7662	50 bar (725 psi)	

#### Technical data

Extinguish. agent .....FK-5-1-12, HFC-227ea  
 Nominal diameter .....DN33 (1.1/2")  
 (free cross-sectional area  
 at minimum flow path: ..... 697 mm<sup>2</sup> (1.08 square inch))  
 Operating temperature range:  
 .....-20 °C to +50 °C (-4 °F to 122 °F)  
 UL / ULC / FM .....-18 °C to +50 °C (0 °F to 122 °F)  
 Working pressure at 50 °C (122 °F):  
 - Ventil B0482-A25 DN33 .....max. 35 bar (508 psi)  
 - Ventil B0482-A DN33 .....max. 60 bar (870 psi)  
 To be used for steel cylinder .....from 22.0 l to 50.0 l  
 .....(60 lbs to 140 lbs)  
 Valve type .....type 2 acc. to EN 12094-4  
 CE conformity ....acc. to Construction Products Regulation (EU)  
 .....No. 305/2011

#### Material / Finish

Housing, Adapter, Screws .....brass  
 Spindles, Seal retainer .....brass  
 O-ring / Seal of seat .....NBR  
 Bursting disk .....nickel  
 Spring .....steel  
 Damping .....PA 6.6

#### Marking

Approval .....π0029 - CE1134 - VdS  
 Part no. ....887964 / B04820021,  
 .....887662 / B04820023  
 Manufacturing date .....WW/YY  
 Manufacture's sign .....3 stars  
 Working pressure .....25 bar / 50 bar at 21 °C  
 Nominal diameter .....ø33

#### Included in delivery

Valve type B0482-A25/A DN33  
 Technical description valve B0481 DN49 / B0482 DN33 part no. 887866

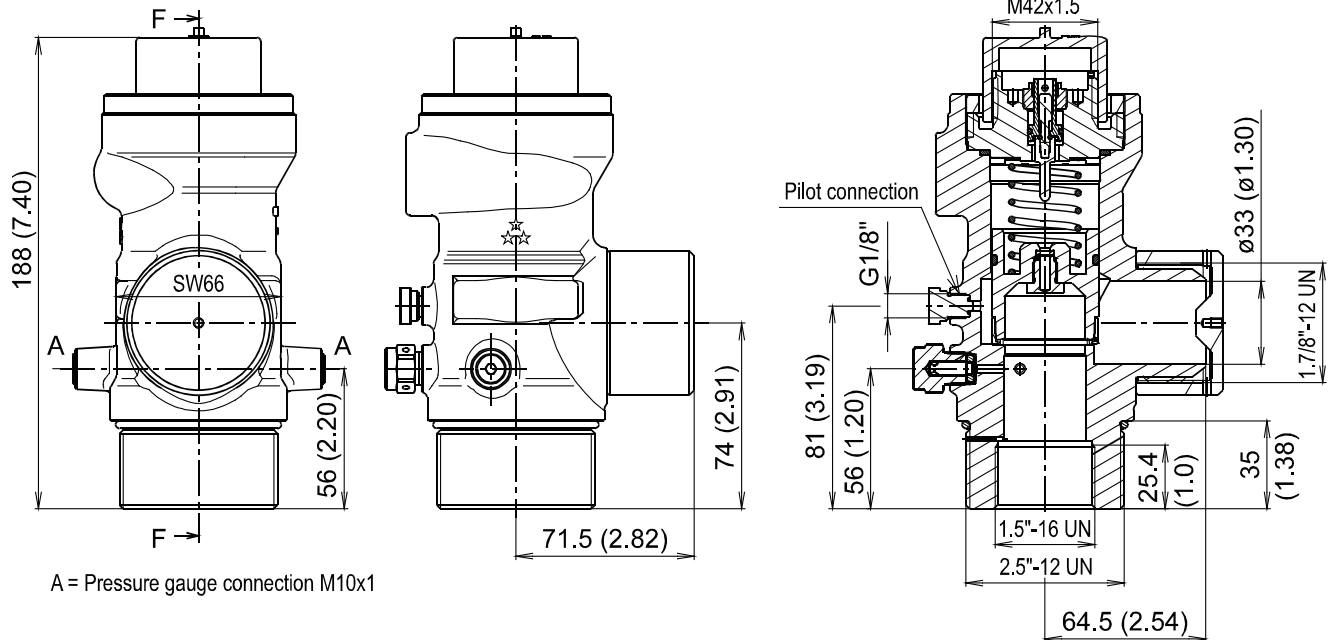
#### Not included in delivery

Adapter M12x1.5 - G1/8 .....887644, see ad-on part cylinder  
 Contact pressure gauge .....see monitoring device  
 Dip tube for valve DN33 .....887657  
 (dip tubes are to be shortened as necessary in acc. to specified dimension given of the extinguishing agent cylinder)  
 Release devices:  
 - Electrical .....see ad-on part cylinder  
 - Electrical with mech. blocking device .....see ad-on part cylinder  
 - Pneumatic .....see ad-on part cylinder  
 - Pneumatic/Manual .....see ad-on part cylinder  
 - Manual .....see ad-on part cylinder  
 - Tackle pneumatic/manual - marine .....see ad-on part cylinder

## Valve B0482 – A25 and B0482 – A

### DN33

**Dimension drawing**  
Dimensions in mm (inch)



## Valve B0481-A25 and B0481-A

### DN49

#### Approvals / CE marking



1134-CPR-1007

1) Listed system covered by UL-file EX15997 (SFFECO Prime FK, SFFECO Prime 227)

2) Part of the system approval



#### SAP designation

e.g. part no. 887966: Valve B0481-A25 DN49

#### Maintenance

see technical description valve B0481 DN49 / B0482 DN33  
part no. 887866

#### Spare parts

- Bursting disk 63 bar for B0481-A25, part no. 915517
- Bursting disk 88 bar for B0481-A, part no. 889295

Designation		Part no.	Working pressure at 21 °C (69.8 °F)	Weight approx.
Valve	B0481-A25 DN49	887966	25 bar (360 psi)	8.9 kg (19.6 lbs)
	B0481-A DN49	887664	50 bar (725 psi)	

#### Technical data

Extinguish. agent .....FK-5-1-12, HFC-227ea  
Nominal diameter .....DN49 (2")  
(free cross-sectional area  
at minimum flow path: .....1515 mm<sup>2</sup> (2.348 square inch))  
Operating temperature range:  
- VdS .....-20 °C to +50 °C (-4 °F to 122 °F)  
- UL / ULC / FM .....-18 °C to +50 °C (0 °F to 122 °F)  
- GL .....-20 °C to +56 °C (-4 °F to 132 °F)  
Working pressure at 50 °C (122 °F):  
- Valve B0481-A25 DN49 .....35 bar (508 psi)  
- Valve B0481-A DN49 .....60 bar (870 psi)  
To be used for steel cylinder .....from 80.0 l to 180.0 l  
.....(220 lbs to 500 lbs)  
Valve type .....type 2 acc. to EN 12094-4  
CE conformity ....acc. to Construction Products Regulation (EU)  
.....No. 305/2011

#### Material / Finish

Housing, Adapter, Screws .....brass  
Spindles, Seal retainer .....brass  
O-ring / Seal of seat .....NBR  
Bursting disk .....nickel  
Spring .....steel  
Damping .....PA 6.6

#### Marking

Approval .....π0029 - CE1134 - VdS  
Part no. (SFFECO / manufacturer) .....887966 / B04810020,  
.....887664 / B04810022  
Manufacturing date .....WW/YY  
Manufacture's sign .....3 stars  
Working pressure .....25 bar / 50 bar at 21 °C  
Nominal diameter .....ø49

#### Included in delivery

Valve type B0481-A25/A DN49  
Technical description valve B0481 DN49 / B0482 DN33  
part no. 887866

#### Not included in delivery

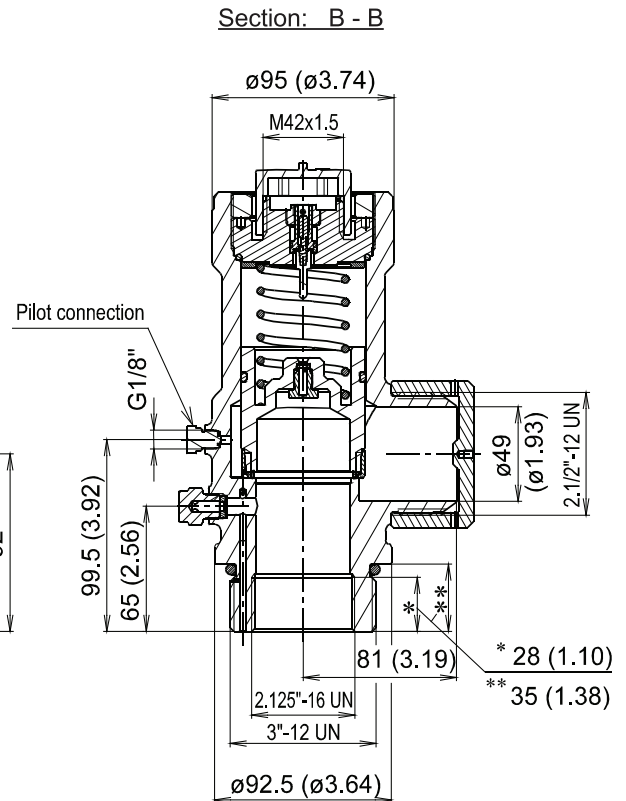
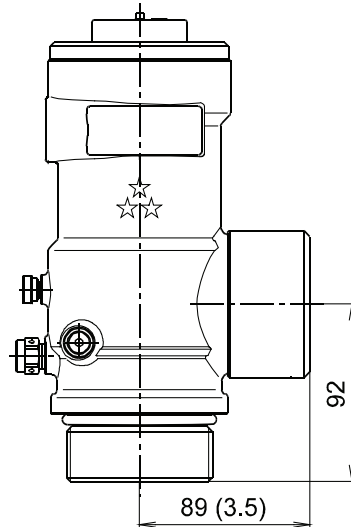
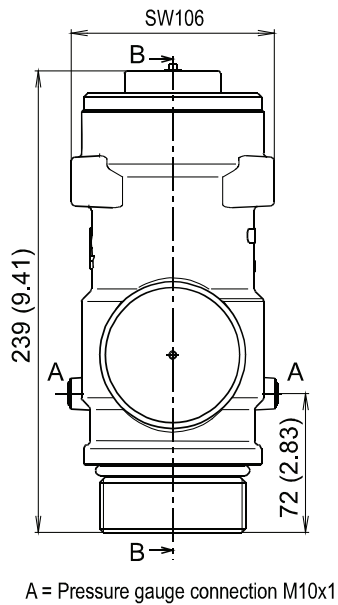
Adapter M12x1.5 - G1/8 .....887644, see ad-on part cylinder  
Contact pressure gauge .....see monitoring device  
Dip tube for valve DN49 .....887659  
(dip tubes are to be shortened as necessary in acc. to specified  
dimension given of the extinguishing agent cylinder)  
Release devices:  
- Electrical .....see ad-on part cylinder  
- Electrical with mech. blocking device .....see ad-on part cylinder  
- Pneumatic .....see ad-on part cylinder  
- Pneumatic/Manual .....see ad-on part cylinder  
- Manual .....see ad-on part cylinder  
- Tackle pneumatic/manual - marine .....see ad-on part cylinder

## Valve B0481-A25 and B0481-A

### DN49

#### Dimension drawing

Dimensions in mm (inch)



## Type Label

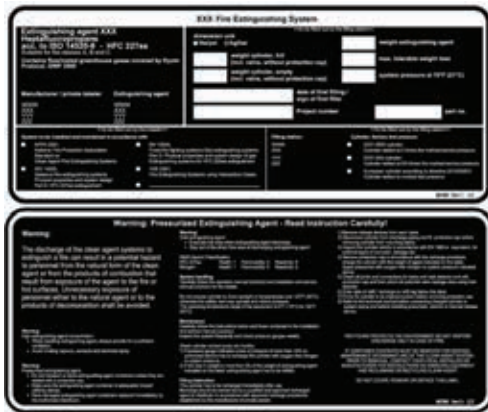
### Extinguishing Agent Cylinder

#### Approvals



1) Type label (de and en) Listed system covered by UL-file EX15997, Material and technical conditions of supply: UL listeted Marking and Labeling System

2) Part of the system approval



#### SAP designation

e. g. part no. 887897: Type label extinguishing agent cylinder HFC-227ea

#### Maintenance

maintenance-free

Designation	Language	Part no.	Weight
Type label extinguishing agent cylinder HFC-227ea	German (de)	887897 <sup>3)</sup>	0.025 kg (0.055 lbs)
	English (en)	887881	
	Spanish (es)	910908 <sup>3)</sup>	

<sup>3)</sup> with UL/ULC/FM installation only additionally to the English type label

#### Technical data

Type label (de), (en):

Material and technical conditions of supply:  
UL listeted Marking and Labeling System

Type label (es):

Material PVC foil self adhesive 0.2 mm thickness

Dimensions (width x height) .....297 x 250 (11.69" x 9.84")  
Script ..... RAL9003 - white  
Ground .....RAL9004 - black  
Glue .....permanent, sticking firmly  
Storage of glue layer .....min. 3 years  
For glass surfaces, plastic surfaces, structured cast metal surfaces, and powdered/varnished surfaces.

## Release Device Electrical

### Approvals / CE marking



- 1) Only in conjunction with valve B0481 / B0482 (G307011) or with valve B0480 (G302023)
- 2) Listed system covered by UL-file EX15997 (SFFECO Prime FK, SFFECO Prime 227)
- 3) Part of the system approval



### SAP designation

e.g. part no. 887667: Release device electrical

### Maintenance

see technical description release device el. part no. 887863  
for use in accordance with UL system approval:  
see technical description electrical release  
part no. 889299

Designation		Part no.	Weight
Release device electrical	with diode <sup>4)</sup>	887667	2.49 kg (5.5 lbs)
	without diode	889323	

### Technical data

Type / part no. manufacturer with diode .....B04425114  
without diode .....B04425130

Nominal voltage .....24 V / DC  $\pm 15\%$

Nominal current .....0.5 A  $\pm 10\%$

IP code .....IP65

Electrical connection .....PG9

Max. permitted test current .....20 mA

Operating temperature range:

- VdS .....-20 °C to +50 °C (-4 °F to 122 °F)
- UL / ULC .....-18 °C to +27,5 °C (0 °F to 81,5 °F)
- FM .....-18 °C to +50 °C (0 °F to 122 °F)
- GL .....-20 °C to +56 °C (-4 °F to 132 °F)

Duration of connection .....100 % duty ratio

Actuation force at the contact with the plunger ..... $\geq 500$  N

Holding force in resting state .....100 N to 250 N

### Marking

part no. manufacturer, manufacturing no., manufacturing date,  
nominal voltage, nominal current, torque

<sup>4)</sup> The electrical connection of the release device is fitted with a diode which allows for the electric circuit and the polarity to be tested afterwards using a test current.

### Application

Electrical actuation of extinguishing agent cylinder valves of type B0481 / B0482 (see cylinder valve, Halocarbon), type B0482 (see cylinder valve, inert gas extinguishing technology). One extinguishing agent cylinder valve each can be opened electrically by applying of the nominal voltage.

### Note

The electrical actuation signal must be present for at least 5 seconds.

### Included in delivery

Release device electrical  
Technical description release device el. part no. 887863

### Not included in delivery

Screw reset tool .....887645

Module for monitoring MVA LÖ (optional):

- Card MVA LÖ .....782239
- Technical description card MVA LÖ .....904653
- Connector plug GDME 3013 with gasket .....761094

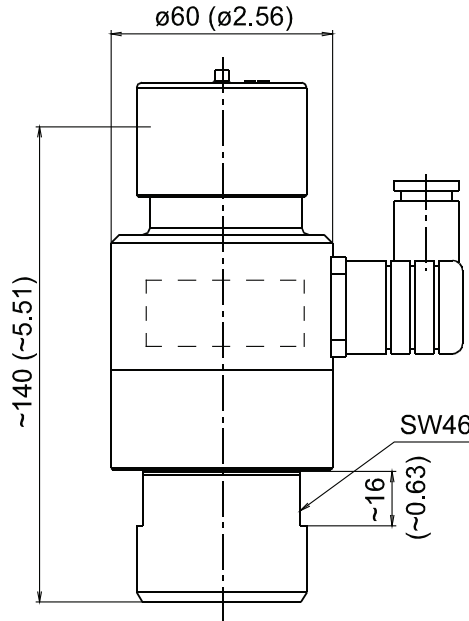
Additionally further release devices can be installed:

- Pneumatic .....see ad-on part cylinder
- Pneumatic/Manual .....see ad-on part cylinder
- Manual .....see ad-on part cylinder
- Tackle pneumatic/manual - marine .....see ad-on part cylinder

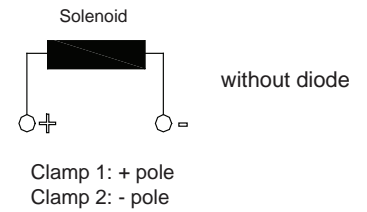
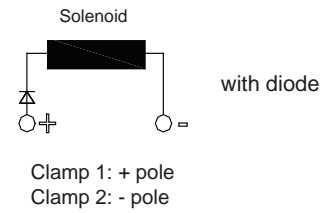
## Release Device Electrical

### Dimension drawing

Dimensions in mm (inch)

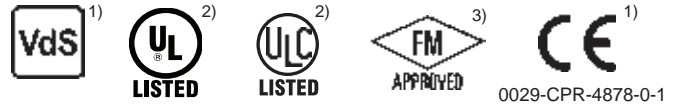


### Terminal connection



## Release Device Electrical

### Approvals / CE marking



1) Only in conjunction with valve B0481 / B0482 (G307011) or with valve B0480 (G302023)

2) Listed system:  
- MX 1230 and MX 200 (UL-File EX5248)

3) Part of the system approval:  
- MX 1230 (FM23FPUS0043) and MX 200 (FM23FPUS0042)

### SAP designation

e.g. part no. 4004595: Release device electrical with diode

### Maintenance

see technical description release device el. part no. 887863

for use in accordance with UL system approval:  
see technical description electrical release  
MX 1230/200 part no. 889299

Designation		Part no.	Weight
Release device electrical	with diode <sup>4)</sup>	4004595	1.84 kg (4.1 lbs)
	without diode	4004508	

### Technical data

Type / part no. manufacturer with diode .....B04425148  
without diode .....B04425149

Nominal voltage .....24 V / DC  $\pm 15\%$

Nominal current .....0.5 A  $\pm 10\%$

Duration of connection .....100 % duty ratio

Electrical connection .....PG9

Max. permitted test current .....20 mA

Operating temperature .....-17 °C to +55 °C (1.4 °F to 131 °F)

Relative humidity .....20 % to 80 %

IP code .....IP65

Mounting tightening torque .....35 - 50 Nm (25,8 - 36,8 lbf ft)

### Marking

part no. manufacturer, manufacturer's sign, manufacturing date (week/year), batch number (WA) last 4 digits, approval mark, nominal voltage, nominal current, torque

<sup>4)</sup> The electrical connection of the release device is fitted with a diode which allows for the electric circuit and the polarity to be tested afterwards using a test current.

### Application

Electrical actuation of extinguishing agent cylinder valves of type B0481 / B0482 (see cylinder valve, Halocarbon), type B0482 (see cylinder valve, inert gas extinguishing technology). One extinguishing agent cylinder valve each can be opened electrically by applying of the nominal voltage.

### Note

The electrical actuation signal must be present for at least 5 seconds.

### Included in delivery

Release device electrical  
Technical description release device el. part no. 887863

### Not included in delivery

Screw reset tool MX 1230/200 .....887645

Module for monitoring MVA LÖ (optional):

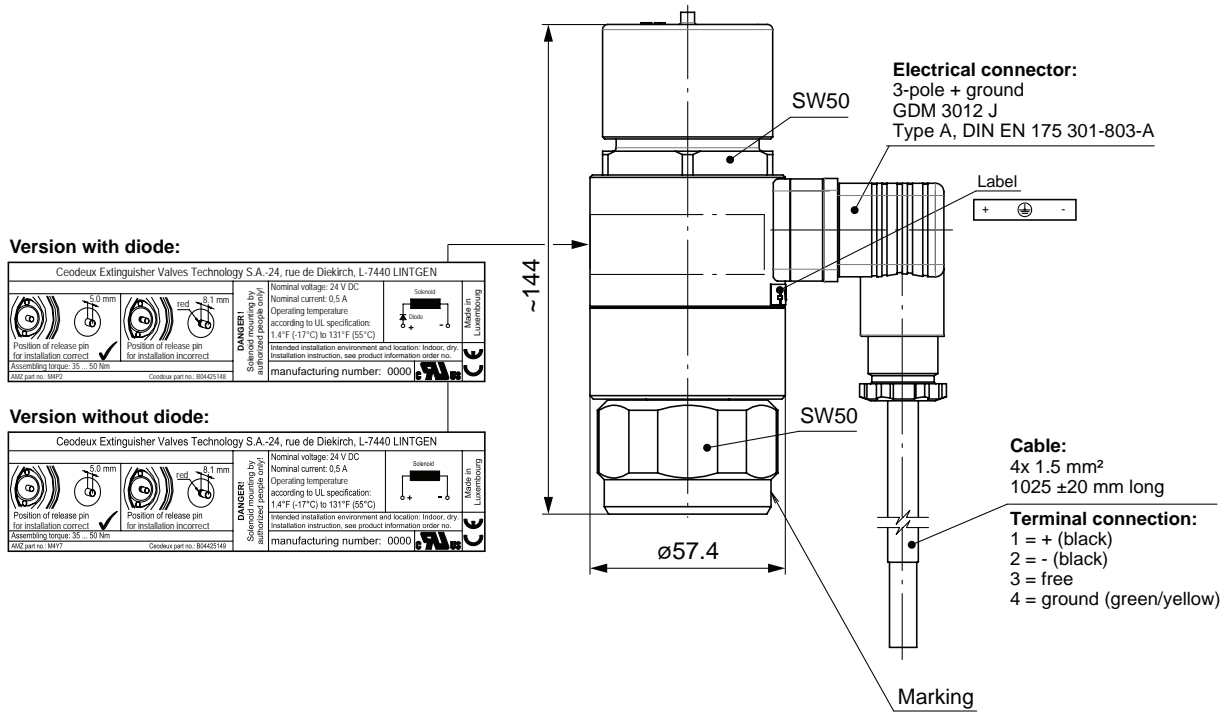
- Card MVA LÖ .....782239
- Technical description card MVA LÖ .....904653
- Connector plug GDME 3013 with gasket .....761094

Additionally further release devices can be installed:

- Pneumatic/Manual .....PS 231-210\_004
- Manual .....PS 231-210\_005
- Tackle pneumatic/manual - marine .....PS 231-210\_006

## Release Device Electrical

### Dimension drawing Dimensions in mm (inch)



## Release Device Manual

### Approvals



1) Listed system covered by UL-file EX15997 (SFFECO Prime FK, SFFECO Prime 227)

2) Part of the system approval

### SAP designation

part no. 887668: Release device manual

### Maintenance

see technical description release device ma part no. 887989



Designation	Part no.	Weight
Release device manual	887668	0.41 kg (0.90 lbs)

### Technical data

Type / part no. manufacturer .....B04420100  
 Operating temperature range:  
 - EN/ISO .....-20 °C to +50 °C (-4 °F to 122 °F)  
 - UL/ULC/FM .....-18 °C to +50 °C (0 °F to 122 °F)  
 - GL .....-20 °C to +56 °C (-4 °F to 132 °F)

### Note

The manual actuation must take place at least 5 seconds.

### Included in delivery

Release device manual  
 Technical description release device ma part no. 887989

### Application

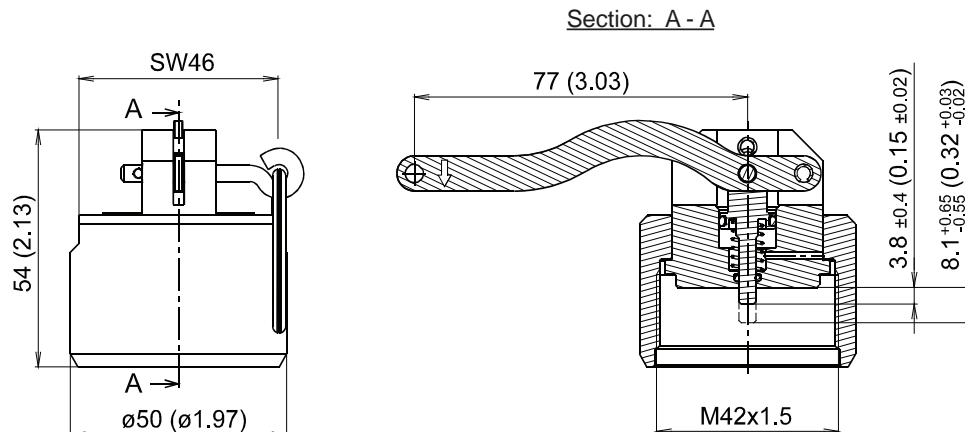
Manual actuation of extinguishing agent cylinder valves of type B0481 / B0482 (see cylinder valve, Halocarbon), type B0482 (see cylinder valve, inert gas extinguishing technology). One extinguishing agent cylinder valve each can be opened manual.

### Not included in delivery

Additional possible use also with release device:  
 - Electrical .....see ad-on part cylinder  
 - Electrical with mech. blocking device .....see ad-on part cylinder

### Dimension drawing

Dimensions in mm (inch)



## Release Device Pneumatic

### Approvals / CE marking



- 1) Only in conjunction with valve B0481 / B0482 (G307011) or with valve B0480 (G302023)
- 2) Listed system covered by UL-file EX15997 (SFFECO Prime FK, SFFECO Prime 227)
- 3) Part of the system approval



### SAP designation

part no. 887669: Release device pneumatic

### Maintenance

see technical description release device pn part no. 887862

Designation	Part no.	Weight
Release device	887669	0.48 kg (1.1 lbs)

### Technical data

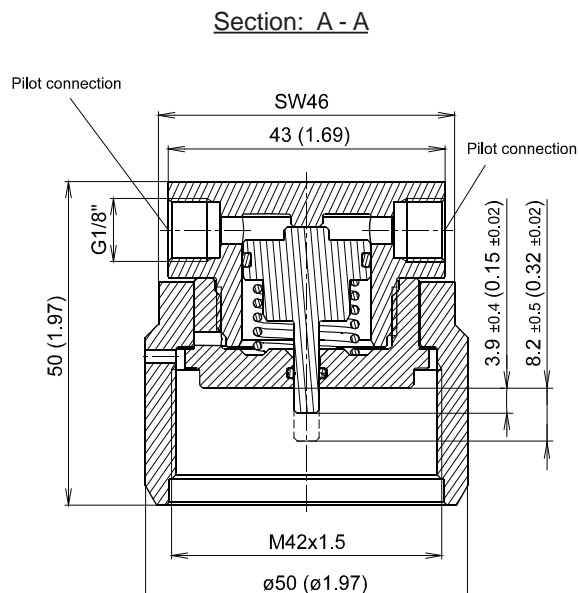
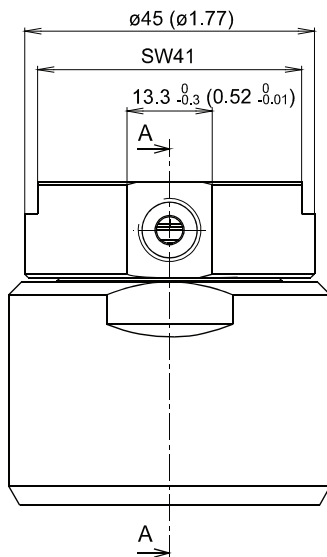
Type / part no. manufacturer .....B04420066  
 Response pressure min. ....21 bar (305 psi)  
 max. ....360 bar (5221 psi)  
 Operating temperature range:  
 - VdS .....-20 °C to +50 °C (-4 °F to 122 °F)  
 - UL / ULC / FM .....-18 °C to +50 °C (0 °F to 122 °F)  
 - GL .....-20 °C to +56 °C (-4 °F to 132 °F)

### Note

The actuating pressure must be applied for at least 5 seconds.  
 The release device is equipped with two connections for pilot pipes to allow the control gas to be passed on to additional release devices.

### Dimension drawing

Dimensions in mm (inch)



### Application

Pneumatic actuation of extinguishing agent cylinder valves of type B0481 / B0482 (see cylinder valve, Halocarbon), type B0482 (see cylinder valve, inert gas extinguishing technology). One extinguishing agent cylinder valve each can be opened pneumatically.

### Included in delivery

Release device pneumatic  
 Technical description release device pn part no. 887862

### Not included in delivery

Adapter M12x1.5 - G1/8 .....887644, see ad-on part cylinder  
 Plug for pilot connection G1/8 .....88803  
 Additional possible use also with:  
 Release device electrical .....see ad-on part cylinder

## Hose

### Approvals / CE marking



1) Listed system covered by UL-file EX15997 (SFFECO Prime FK, SFFECO Prime 227)

2) Part of the system approval

### SAP designation

e.g. part no. 887834: Hose DN4x 600

### Maintenance

see technical description hose DN4 part no. 887973



Designation		Part no.	L mm (in)	Weight kg (lbs)
Hose	DN4 x 600	887834	600 (23.62)	0.2 (0.44)
	DN4 x 1000	887835	1000 (39.37)	0.3 (0.66)
	DN4 x 1500	887836	1500 (59.06)	0.4 (0.88)

### Technical data

Type .....DN 4 x 600/1000/1500 - 227/FK  
 Operating medium .....FK-5-1-12, HFC-227ea, nitrogen, CO<sub>2</sub>  
 Nominal diameter .....DN4 (0.16")  
 Minimum bending radius .....90 mm (3.54")  
 Operating temperature range:  
 .....-40 °C to +60 °C (-40 °F to 140 °F)  
 UL / ULC / FM .....-18 °C to +50 °C (0 °F to 122 °F)  
 Working pressure .....160 bar (2321 psi)  
 Test pressure .....240 bar (3481 psi)  
 Burst pressure .....480 bar (6962 psi)  
 Ferrule .....PN 04 AOL conical nipple 24° with O-ring  
 .....metric (DKOL) steel galvanized yellow chrome dulled  
 Hose connector type 3 .....complies with EN 12094-8  
 CE conformity ....acc. to Construction Products Regulation (EU)  
 .....No. 305/2011

### Marking

Manufacturer sign, Type (227/FK ), Batch number,  
 Working pressure (160 bar), Approval (VdS, CE), Date  
 of manufacture (month/year)

### Application

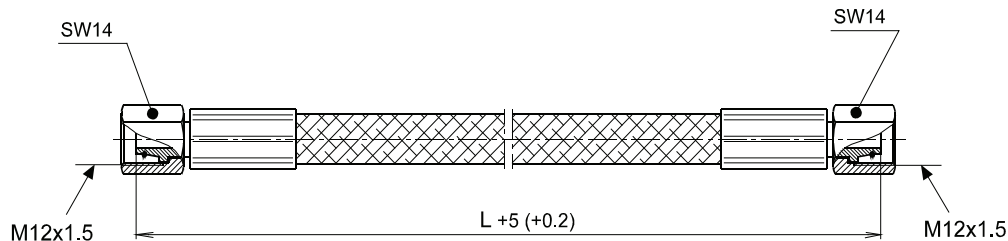
To connect:  
 - The master extinguishing agent cylinder and the  
 pneum. release devices of other extinguishing agent cylinder  
 - Two pneumatical release devices  
 - The pneumatical release device and the pilot pipe of multi zone  
 systems

### Included in delivery

Hose DN4  
 Technical description hose DN4 part no. 887973

### Dimension drawing

Dimensions in mm (inch)



## Adapter M12x1.5 – G1/8



### Approvals

(VdS approval is not required!)



1) Listed system covered by UL-file EX15997 (SFFECO Prime SFFECO Prime 227)

2) Part of the system approval

### SAP designation

e.g. part no. 887644: Adapter M12x1.5 - G1/8

### Maintenance

maintenance-free

Designation	Part no.	Weight
Adapter M12x1,5 - G1/8	887644	0.018 kg (0.04 lbs)

### Technical data

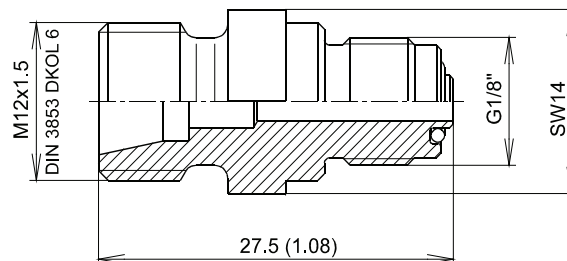
Operating medium .....FK-5-1-12, HFC-227ea,  
.....argon, nitrogen, CO<sub>2</sub>, IG55, IG541  
Operating temperature range:  
.....-20 °C to +56 °C (-4 °F to 132 °F)  
UL / ULC / FM .....-18 °C to +50 °C (0 °F to 122 °F)  
Working pressure .....360 bar (5221 psi)  
Material .....brass

### Application

To the connection of the hose DN4 / pilot pipe with:  
- Valves type B0481, valves type B0482  
- Valves type B0480, BAS  
- Release device pneumatic/manual  
- Release device pneumatic

### Dimension drawing

Dimensions in mm (inch)



## Connection Piece DN40 and DN50

### Approvals



- 1) Listed system covered by UL-file EX15997 (SFFECO Prime FK, SFFECO Prime 227)  
2) Part of the system approval



### SAP designation

e.g. part no. 888052: Connection piece DN40

### Maintenance

maintenance-free

Designation		Part no.	Weight kg (lbs)
Connection piece	DN40	888052	0.64 (1.44)
	DN40 NPT	914154	
	DN50	888053	1.26 (2.77)
	DN50 NPT	914155	

### Technical data

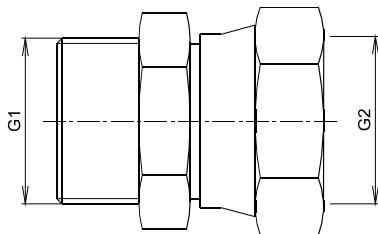
External thread .....tapered, thread seal  
Internal thread .....UN-nut thread, 74° conical hole  
Working pressure .....60 bar (870 psi)  
Material .....steel, galvanized coated

### Application

Rigid connection between the valve of the extinguishing agent cylinder and the downstream piping and/or the manifold.

### Dimension drawing

Dimensions in mm (inch)



Connection piece	G1	G2
DN40	R 1.1/2"	1.7/8"-12 UN
DN40 NPT	1.1/2" - 11.5 NPT	
DN50	R 2"	2.1/2"-12 UN
DN50 NPT	2" - 11.5 NPT	

## Check Valve DN50 CR and CR NPT

### Approvals / CE marking



1) Listed system covered by UL-file EX15997 (SFFECO Prime FK, SFFECO Prime 227)

2) Part of the system approval

### SAP designation

e.g. part no. 887870: Check valve DN50 CR

### Maintenance

see technical description check valve part no. 887871

Designation	Part no.	Weight
Check valve DN50	CR	887870
	CR NPT	912071
		5.15 kg (11.35 lbs)

### Technical data

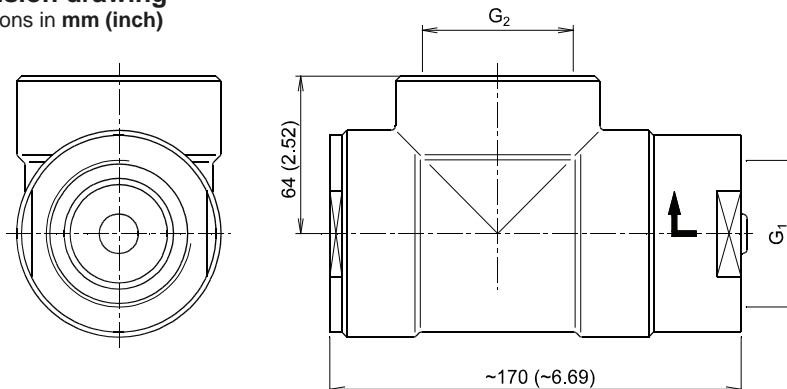
Type .....MX-CR, MX-CR NPT  
 Medium.....FK-5-1-12, HFC-227ea, nitrogen  
 Nominal diameter .....DN50  
 Working pressure .....60 bar (870 psi)  
 Test pressure .....90 bar (1305 psi)  
 Opening pressure .....≤ 3 bar (43.05 psi)  
 Leakage rate at 20 bar (290 psi) .....≤ 20 bubbles / 1 min  
 Operating temperature range:  
 .....-20 °C to +50 °C (-4 °F to 122 °F)  
 UL / ULC / FM .....-18 °C to +50 °C (0 °F to 122 °F)  
 Check valve .....complies with EN 12094-13  
 CE conformity ....acc. to Construction Products Regulation (EU)  
 .....No. 305/2011

### Material / Surface

Housing .....steel, galvanized  
 Internal components .....stainless steel  
 Spring .....stainless steel  
 Seal .....NBR

### Dimension drawing

Dimensions in mm (inch)



### Application

When using more than one cylinder at a conjointly pipework a check valve is to be used with each cylinder between cylinder and pipework or manifold.  
 This prevents that extinguishant gets to not operated valves or escapes unaimed with dismantled cylinders.

### Marking

manufacturer/year (MX/xx), type, nominal diameter (DN50), working pressure (PB 60), approval sign (VdS, CE), serial number

### Included in delivery

Check valve CR / CR NPT  
 Technical description check valve part no. 887871

Check valve	G <sub>1</sub>	G <sub>2</sub>
CR	Rp 2 (EN 10226)	Rc 2 (ISO 7)
CR NPT	2-11.5-NPT	2-11.5-NPT

## Clamp Extinguishing Agent Cylinder

### Approvals



1) Listed system covered by UL-file EX15997 (SFFECO Prime FK, SFFECO Prime 227)

2) Part of the system approval



### SAP designation

e.g. part no. 888014: Clamp ext. agent cylinder D=229mm

### Maintenance

maintenance-free

Clamp extinguishing agent cylinder	Part no.	Clamp for steel cylinder		Weight kg (lbs)
		drawn	welded	
D=229mm	888014	221 / 401 (ø229 mm / ø9")	-	1.26 (2.8)
D=254mm	923157	-	221 / 521 (ø254 mm / ø10")	1.39 (3.1)
D=267mm	887628	801 (ø267 mm / ø10.51")	-	1.46 (3.2)
D=316mm	887988	1001 (ø316 mm / ø12.44")	-	1.69 (3.7)
D=406mm	887639	801/1401/1801 (ø406 mm / ø16")	1061/1471/1801 (ø406 mm / ø16")	2.08 (4.6)

### Technical data

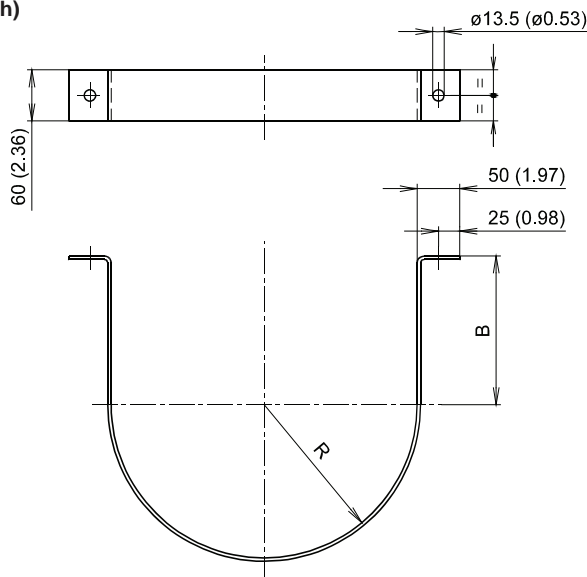
Material .....strip EN 10048 - 4,0 x 60  
 .....steel EN 10025-2-S235JR  
 Finish .....matt-finished or powder-coated  
 .....RAL 9011 graphite black

### Not included in delivery

Fastening material

### Dimension drawing

Dimensions in mm (inch)



Clamp	R	B
D=229mm	117 (4.60)	111 (4.37)
D=254mm	129 (5.08)	124 (4.88)
D=267mm	136 (5.35)	130 (5.12)
D=316mm	160 (6.30)	155 (6.10)
D=406mm	205 (8.07)	200 (7.87)

## Nozzle Type CD, SFFECO Prime 227

### Approvals



- 1) Listed system covered by UL-file EX15997 (SFFECO Prime 227)
- 2) Version A and B without UL / ULC / FM approval
- 3) Part of the system approval

### SAP designation

e.g. part no. 887759: Nozzle CD 1/2 x A ...-Ms

### Maintenance

see technical description nozzles CD part no. 887869

Nozzle	Version <sup>4)</sup>	Part no.		ød ±0,1 mm (±0.0039 inch)		Weight approx. kg (lbs)
		Ms	XCrNi	min. mm (inch)	max. mm (inch)	
CD 1/2	A <sup>2)</sup>	887759	887781	3 (0.1181)	6 (0.2362)	0.2 (0.4)
	B <sup>2)</sup>	887760	887782		5 (0.1969)	
	C	887761	887783			
	D	887763	887784			
CD 1/2 NPT	A <sup>2)</sup>	889033	889046	3 (0.1181)	6 (0.2362)	0.2 (0.4)
	B <sup>2)</sup>	889034	889048		5 (0.1969)	
	C	889036	889049			
	D	889037	889050			
CD 1	A <sup>2)</sup>	887768	887790	3 (0.1181)	11 (0.4331)	0.4 (0.9)
	B <sup>2)</sup>	887769	887791		10 (0.3937)	
	C	887770	887792			
	D	887771	887793			
CD 1 NPT	A <sup>2)</sup>	889038	889051	3 (0.1181)	11 (0.4331)	0.4 (0.9)
	B <sup>2)</sup>	889039	889052		10 (0.3937)	
	C	889040	889053			
	D	889041	889054			
CD 1.1/2	A <sup>2)</sup>	887777	887799	3 (0.1181)	18 (0.7087)	0.6 (1.3)
	B <sup>2)</sup>	887778	887800		16 (0.6299)	
	C	887779	887801			
	D	887780	887802			
CD 1.1/2 NPT	A <sup>2)</sup>	889042	889055	3 (0.1181)	18 (0.7087)	0.6 (1.3)
	B <sup>2)</sup>	889043	889056		16 (0.6299)	
	C	889044	889057			
	D	889045	889058			

<sup>4)</sup> Version (nozzle bore hole layout) see on page 2

### Order informations

For manufacturing, the nozzle bore diameter ød must be stated within the permitted limits in 1/10 mm gradations.



## Contact Pressure Gauge UL

### SFFECO Prime 227



#### Approvals



1) Listed system covered by UL-file EX15997 (SFFECO Prime 227)

2) Part of the system approval

#### SAP designation

e.g. part no. 889306: Contact pressure gauge UL 725 (50) psi (bar)/ 324 (22.5) NO HFC-227ea

#### Maintenance

functional check within the framework of system-specific functional test

#### Spare parts

- O-ring part no. 888023
- Supporting ring O-ring part no. 888024

Nominal pressure at 70 °F (21 °C) psi (bar)	Switching mode <sup>3)</sup>	Part no.	Pressure range / switching point psi (bar)	max. Pressure psi (bar)	Tolerance acc. to UL / ULC psi (bar)	Weight kg (lbs)
360 (25)	break contact (NC)	889311	870 / 324 (60 / 22.5)	725 (50)	± 19 (± 1.3)	0.17 (0.37)
610 (42)		889312	1160 / 549 (80 / 37.8)	1015 (70)	± 21 (± 1.4)	
725 (50)		889313	1450 / 653 (100 / 45)	1160 (80)	± 23 (± 1.5)	
360 (25)	make contact (NO)	889306	870 / 324 (60 / 22.5)	725 (50)	± 19 (± 1.3)	
610 (42)		889307	1160 / 549 (80 / 37.8)	1015 (70)	± 21 (± 1.4)	
725 (50)		889309	1450 / 653 (100 / 45)	1160 (80)	± 23 (± 1.5)	

#### <sup>3)</sup> Note switching mode

Break contact (NC) - pressureless closed:  
At nominal pressure the contact is opened. Contact makes with falling pressure or anticlockwise pointer motion.

Make contact (NO) - pressureless opened:  
At nominal pressure the contact is closed. Contact breaks with falling pressure or anticlockwise pointer motion.

#### <sup>4)</sup> Note for temperature range

The switching point of the integrated electric pressure switch is designed for the nominal system pressure minus 10% at 20 °C.

Due to the temperature related pressure drop, this switching value is also achieved for systems without pressure loss if the ambient temperature falls below 5 °C.

We therefore recommend using the integrated electric pressure switch to monitor the system pressure only at temperatures > 5 °C.

#### Technical data

Pressure medium .....HFC-227ea, N<sub>2</sub>  
Nominal size .....50  
Accuracy class .....1.6  
Working temperature electrical switching function ....see note <sup>4)</sup>  
Temperature range: <sup>4)</sup>  
Product temperature, storage temperature:  
.....-40 °C to +60 °C (-40 °F to +140 °F)  
.....measuring medium max. +60 °C (+140 °F)  
IP code .....IP65 with mounted cable  
Measuring network, motion work .....copper alloy

#### Electrical data

Switching voltage .....4.5 – 24 V DC / VAC  
Switching current .....5 – 100 mA  
Contact load .....max. 3 W, dry contact  
Conducting wire .....two-core, 100 cm (39.37")  
Cross-section of conducting wire ...0.14 mm<sup>2</sup> (0.000217 square inch),  
.....AWG 26

## Contact Pressure Gauge UL

### SFFECO Prime 227

#### Design of instrument dial

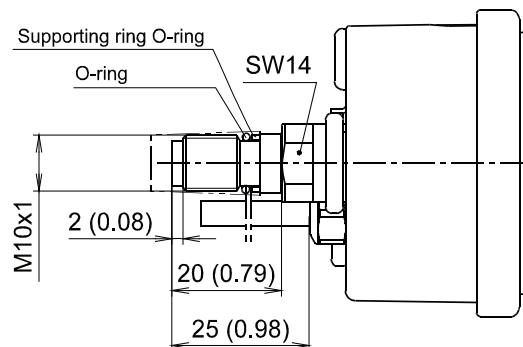
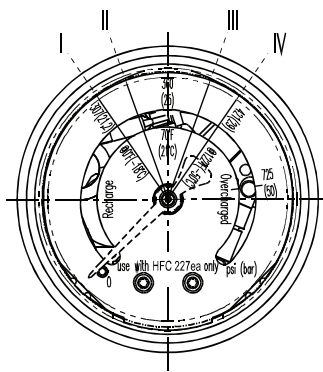
Design of instrument dial .....according to UL 2166  
Material .....aluminium, white  
Scale .....dual scale (bar / psi)  
Indicating range .....0 to pressure range

Indicating range marked:

- 0 to I .....Recharge  
- I to II .....red  
- II to III .....green  
- III to IV .....red  
- IV to max. ....Overcharged

#### Dimension drawing

Dimensions in mm (inch)

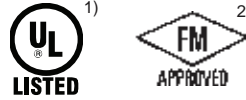


#### Indicating range marked

Nominal pressure at 70 °F (21 °C) psi (bar)	Red area I to II	Green area II to III	Red area III to IV	Marking at nominal pressure	Marking at I	Marking at IV
360 (25)	290-324	324-396	396-493	360 I (25)   70°F I (21°C)	290 (20) @0°F (-18°C)	493 (34) @122°F (50°C)
610 (42)	480-549	549-671	671-767	610 I (42)   70°F I (21°C)	480 (33) @0°F (-18°C)	767 (53) @122°F (50°C)
725 (50)	587-653	653-798	798-864	725 I (50)   70°F I (21°C)	587 (40) @0°F (-18°C)	864 (60) @122°F (50°C)

## Limit Switch Pneumatically Operated

### Approvals



1) Listed system covered by UL-File EX15997 ( SFFECO Prime FK, SFFECO Prime 227)

2) Part of the system approval:

- Oxeo PR LCP, IG-01, IG-100
- Carbon Dioxide Extinguishing System CO<sub>2</sub> Low Pressure
- SFFECO Prime FK, SFFECO Prime 227

### SAP designation

part no. 826758: Limit switch pneumatically operated

### Maintenance

see technical description limit switch pneumatically operated  
part no. 926951



Designation	Part no.	Weight
Limit switch pneumatically operated	826758	1.5 kg (3.31 lbs)

### Technical data

Operating medium .....IG-01 (argon), IG-100 (nitrogen),  
..... IG-55, IG-541, CO<sub>2</sub>, FK-5-1-12, HFC-227ea  
Working pressure .....140 bar (2030 psi)  
Temperature range ..... -20 °C to +50 °C (-4 °F to 122 °F)  
Pressure connection.....for precision steel pipe 6x1

### Product sheets also applying

Cylinder ø25 x H30 .....PS 214-420\_019  
Limit switch US 432y .....PS 211-430\_005

### Application

The limit switch pneumatically operated may only be used in stationary IG-01, IG-100, IG-55, IG-541, CO<sub>2</sub>, FK-5-1-12 and HFC-227ea extinguishing systems. The limit switch is used to generate electrical signals which can be used for varying purposes.

### Function description

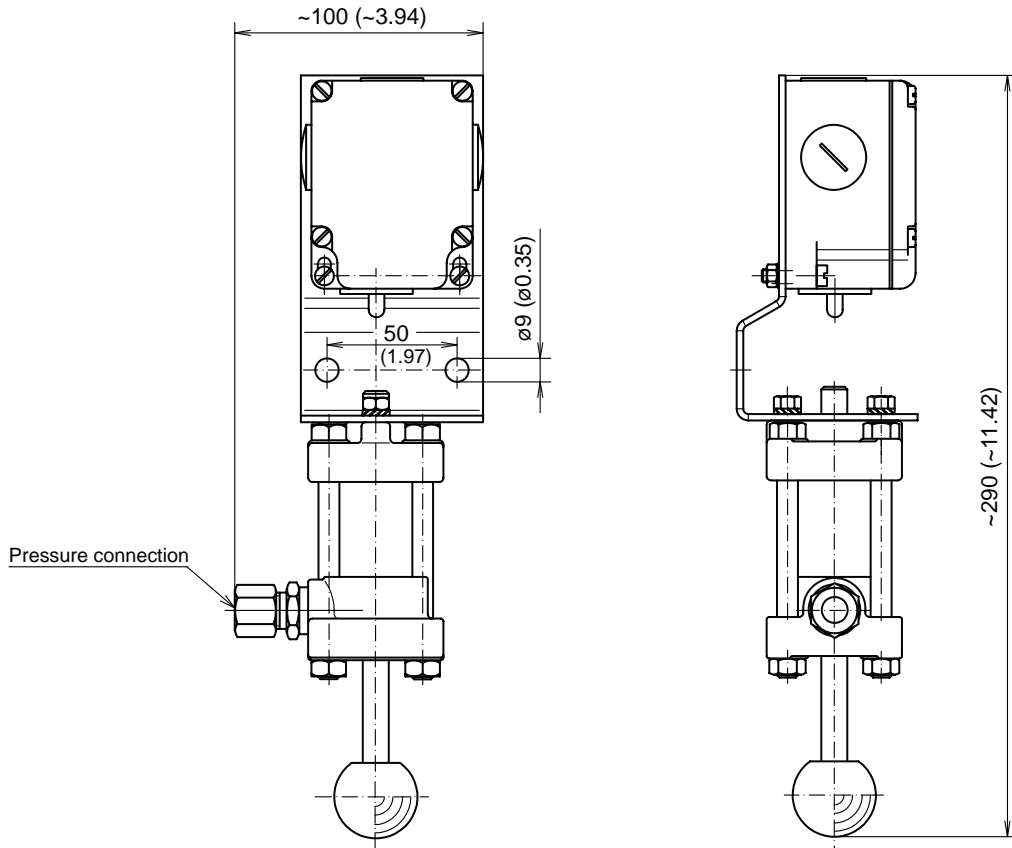
In the event of fire, the extinguishing agent floods the corresponding pipeline system. Present pressure actuates the cylinder that in turn actuates the limit switch. The contacts of the limit switch are, depending on the respective connection, opened or closed. The activated signal is, e.g., used as an alarm signal for fire department control panels. The electrical signal can also be activated manually for test purposes using a push button.

### Included in delivery

Cylinder ø25 x H30 .....227303, PS 214-420\_019  
Limit switch type US 432y .....724420, PS 211-430\_005  
Support limit switch pneum. activated .....827866  
Union GE 6-PSR-ED A3C .....125578, PS 280-320\_001  
2x Cheese-head screw DIN84-M5x25-Ms .....106915  
2x Hex. nut DIN934-M5-Ms .....108444  
2x Washer DIN125-B-5,3-Ms .....109771  
Technical description limit switch pneumatic (en) .....926951  
as well as fastening material

## Limit Switch Pneumatically Operated

### Dimension drawing Dimensions in mm (inch)



## Hose DN40 and DN50 (Optional)

### Approvals / CE marking



1) Listed system covered by UL-file EX15997 (SFFECO Prime FK, SFFECO Prime 227)

2) Part of the system approval

### SAP designation

e.g. part no. 887647: Hose DN40

### Maintenance

see technical description hose part no. 887849

Designation		Part no.	Weight kg (lbs)
Hose	DN40	887647	3.1 (6.83)
	DN40 NPT	914140	
	DN40 90°	887648	
	DN40 90° NPT	912075	
	DN50	887649	5.5 (12.13)
	DN50 NPT	914141	
	DN50 90°	887650	5.7 (12.66)
	DN50 90° NPT	912076	

### Technical data

Type DN 40 / DN50 .....DN 40 / DN50 FK/227  
 DN 40 90° / DN50 90° ..DN 40 / DN50 FK/227 90  
 Operating medium .....FK-5-1-12, HFC-227ea, Nitrogen  
 Nominal diameter .....DN40 / DN50 (1.1/2" / 2")  
 Minimum bending radius DN40 .....500 mm (19.69")  
 DN50 .....630 mm (24.80")  
 Operating temperature range:  
 .....-40 °C to +60 °C (-40 °F to 140 °F)  
 UL / ULC / FM .....-18 °C to +50 °C (0 °F to 122 °F)  
 Working pressure .....80 bar (1160 psi)  
 Test pressure .....120 bar (1740 psi)  
 Burst pressure .....240 bar (3481 psi)  
 Hose connector type 1 .....complies with EN 12094-8  
 CE conformity ....acc. to Construction Products Regulation (EU)  
 .....No. 305/2011

### Material / Finish

Union .....steel, galvanized  
 Ferrule .....steel, galvanized  
 Flexible hose line .....with fabric-inserted steel  
 Hexagon nipple .....steel, galvanized

### Application

To connect the valve of the extinguishing agent cylinder to the nozzle pipe, the manifold, or the check valve.

### Marking

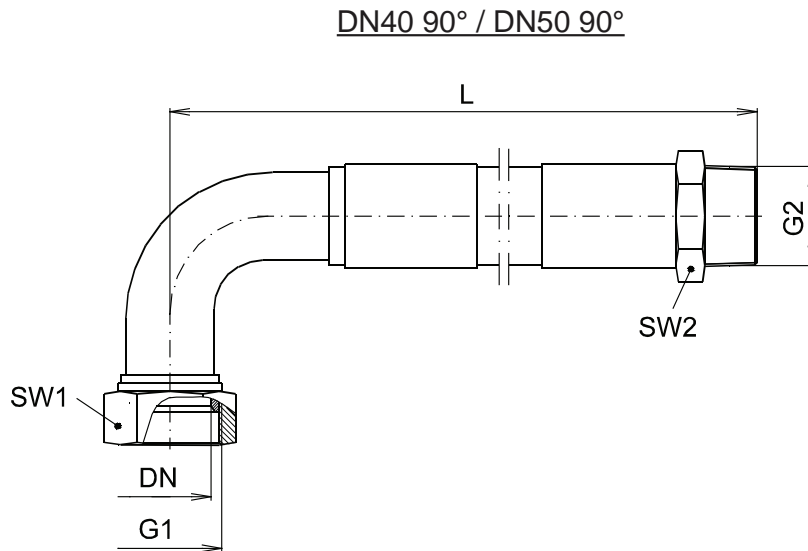
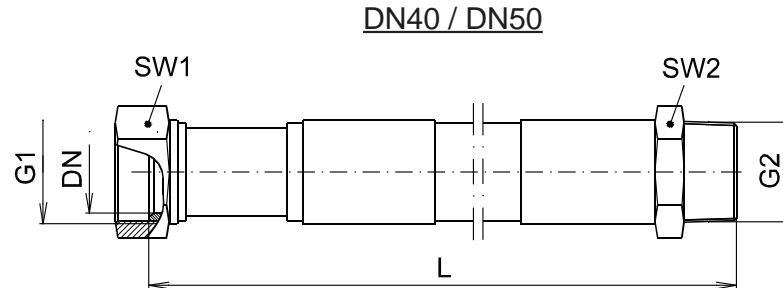
Manufacturer sign, Type (DN ... ), Batch number, Working pressure (80 bar), Approval (VdS, CE), Date of manufacture (month/year)

### Included in delivery

Hose DN40/DN50  
 Technical description hose part no. 887849

## Hose DN40 and DN50 (Optional)

### Dimension drawing Dimensions in mm (inch)

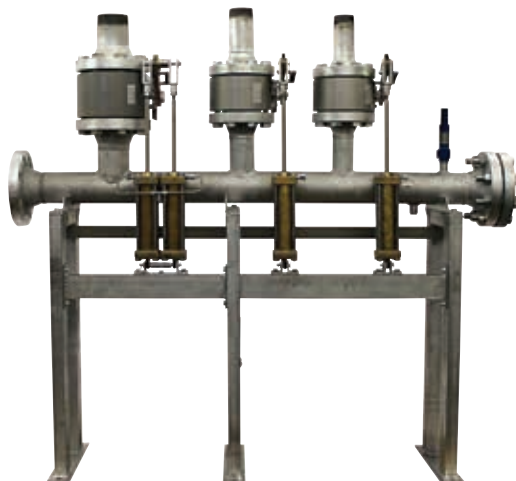


Hose	L	G1	G2	SW1	SW2
DN40	825 (32.48)	1.7/8"-12 UNF (B1.1)	R1.1/2" ISO 7	60	50
DN40 NPT			1.1/2" - 11.5 NPT		
DN40 90°	450 (17.72)		R1.1/2" ISO 7		
DN40 90° NPT			1.1/2" - 11.5 NPT		
DN50	1000 (39.37)	2.1/2"-12 UNF (B1.1)	R2" ISO 7	70/75 <sup>3)</sup>	65
DN50 NPT			2" - 11.5 NPT		
DN50 90°	520 (20.47)		R2" ISO 7		
DN50 90° NPT			2" - 11.5 NPT		

<sup>3)</sup> at the manufacture's option

## Manifold Selector Valve DN65/80/100

### Complete Pneumatic (Optional)



#### Approvals / CE marking



- 1) Approvals and CE for selector valve only
- 2) Listed system covered by UL-File EX15997 (SFFECO Prime FK SFFECO Prime 227)
- 3) Part of the system approval (SFFECO Prime FK, SFFECO Prim

#### Maintenance

see operating instruction selector valve BV, part no. 8862

#### Spare parts

Manual release lever, 600 mm (23.62") long part no. 823

#### Ordering hints

Manifolds selctor valve DN65/80/100 pneumatic are manufactured individually for each contract. Use form C10.40.80 (see documentation special extinguishing systems) for ordering.

Primer coated or powder coated manifolds are to be ordered via order number 40 0015.  
Galvanized manifolds are to be ordered via order number 40 0016.

#### Technical data

Operating medium .....CO<sub>2</sub>, argon (IG-01), nitrogen (IG-100)  
.....IG-55, IG-541, FK-5-1-12, HFC-227ea

Working pressure / test pressure:

- Manifold, selector valves ..... 140 bar / 210 bar  
..... (2030 psi / 3045 psi)
- Pneumatic release device .....20 to 140 bar / 210 bar  
.....(290 to 2030 psi / 3045 psi)

Flow characteristics (high pressure selector valve):

- DN65 .....equivalent length 0.43 m (16.93")
- DN80 .....equivalent length 0.55 m (21.65")
- DN100 .....equivalent length 0.67 m (26.38")

Temperature range .....-20 °C to +50 °C (-4 °F to 122 °F)

Actuation .....by 24 V DC

#### Application

The manifold selector valve BV DN65/80/100 pneumatic is used in accordance with "documentation of special extinguishing systems" in:

- fixed CO<sub>2</sub>- high pressure fire extinguishing systems
- argon-, nitrogen, IG-55-, IG-541 extinguishing systems with Constant Flow (CF)
- FK-5-1-12 and HFC-227ea fire extinguishing systems, maximum number of selector valves: 15.

In case of fire the selector valve DN65/80/100 is used for flooding selected extinguishing zones.

#### Functional description

After a fire has been detected in one of the extinguishing zones of a multi- zone system, the appropriate selector v. opens and the extinguishing agent flows into the relevant downstream pipe work of the extinguishing zone. For recommissioning the selector valve has to be closed manually by using the reset lever. The right position of selector valve may monitored by one or two limit switches:

#### Main components

Ball valves DN65 - 100 .....  
Release cylinder section valve ..... PS 211-33  
Safety valve G1/2, depending from operating medium:  
- CO<sub>2</sub> (140 bar) ..... PS 214-341  
- Inert gas / SFFECO Prime FK,  
SFFECO Prime 227 (66 bar) ..... PS 231-341  
Limit switch type US 432y and US 434y ..... PS 211-430  
..... PS 211-430  
Manifold rack - left .....81  
Manifold rack - right .....82

#### Included in delivery

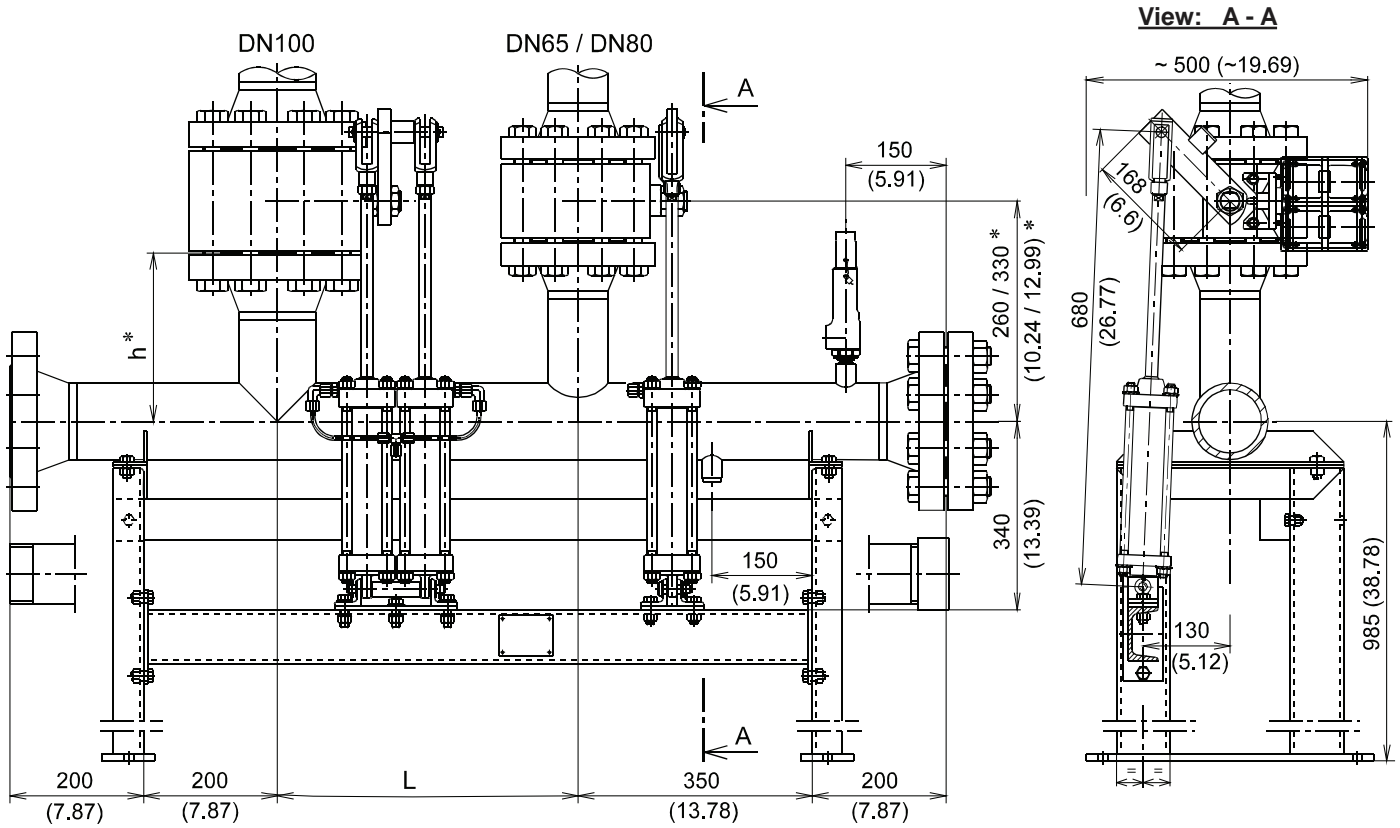
Manifold selector valve complete, pneumatic  
Operating instruction selector valve BV part no. 886269

## Manifold Selector Valve DN65/80/100

### Complete Pneumatic (Optional)

#### Dimension drawing

Dimensions in mm (inch)



DN	L	h *
65	350 (13.78)	203 / 270 (7.99 / 10.63)
80	350 (13.78)	200 / 267 (7.87 / 10.51)
100	450 (17.72)	250 (9.84)

\* The longer dimensions are valid for manifolds with min. one selector valve DN100.

# Clean Agent Fire Extinguishing System



<b>Order form</b>				<b>To: Customer center</b>			
OD-WA-number:				project number		PSP element	
order							
delivery at / to			name	checked		date	

Please mark requested design!

application:  CO<sub>2</sub>  Argon / N<sub>2</sub>  FK-5-1-12 / HFC-227ea

for selector valve DN65, DN 80, DN100

number of branches (1-5) .....pc.

counter flange yes  no

manifold pipe nominal diameter DN \_\_\_\_

counter flange without coating

connection header

flange

counter flange with coating

thread

cap  blind flange

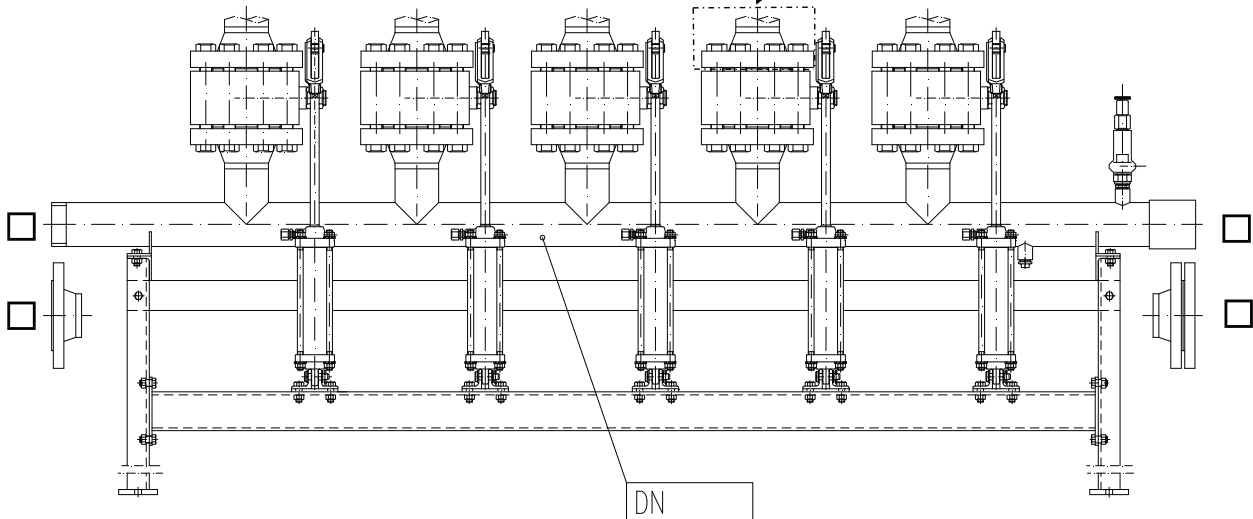
left  right

manifold finish:

dip hot galvanised

RAL 7011 (grey)

RAL 3000 (red)



nominal diameter	A	B	C	D	E
DN25	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DN40	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DN50	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DN65	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DN80	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DN100	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
limit switch (4 contacts) part no.: 224831	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
limit switch (2 contacts) part no.: 724420	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
selector valves actuation					
- pneumatic	<input type="checkbox"/>				
- electro-pneumatic 24 V	<input type="checkbox"/>				

**Special equipment is subject to an examination of the MV R&D\***

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\* Costing and expenditure of time rise by this examination

## Selector Valve MX-BV DN25 – 50 PB235 (Optional)



### Approvals / CE marking



1) Listed system covered by UL-file EX15997 (SFFECO Prime FK, SFFECO Prime 227)

2) Part of the system approval (SFFECO Prime FK, SFFECO Prime 227)

### SAP designation

e.g. part no. 885189: Selector valve BV 25 PB235

### Maintenance

see operating instruction selector valve BV DN25/40/50  
part no. 886333

Designation		Part no.	Weight kg (lbs)
Selector valve BV	DN25	885189	17.0 (37.5)
	DN40	885191	20.5 (45.2)
	DN50	885192	24.8 (54.7)
	DN25 - NPT	912052	17.0 (37.5)
	DN40 - NPT	912053	20.5 (45.2)
	DN50 -NPT	912054	24.8 (54.7)

### Technical data

Type .....MX-BV  
 Operating medium .....CO<sub>2</sub>, argon (IG-01), nitrogen (IG-100),  
 .....IG-55, IG-541, HFC-227ea, FK-5-1-12  
 Temperature range .....-20 °C to +50 °C (-4 °F to +122 °F)  
 Working pressure:  
 - manifold, selector valves .....235 bar (3408 psi)  
 - pneumatic release device .....20 to 140 bar (290 to 2030 psi)  
 Test pressure:  
 - manifold, selector valves .....353 bar (5120 psi)  
 - pneumatic release device .....210 bar (3045 psi)  
 Flow characteristics (selector valve):  
 - DN25 .....equivalent length 0.18 m (0.59 ft)  
 - DN40 .....equivalent length 0.27 m (0.89 ft)  
 - DN50 .....equivalent length 0.37 m (1.21 ft)  
 Test certificate .....in acc. with EN 10204 - 3.1 (pressure test)  
 Selector valve .....complies with EN 12094-5  
 CE conformity .....acc. to Construction Products Regulation (EU)  
 .....No 305/2011

### Product sheets also applying

Cylinder D55-H106 .....PS 211-334\_001  
 Ball valves BV DN25, DN40 and DN50 .....PS 211-334\_002

### Marking

Type (MX-BV ..), VdS no. (G393001), MX test no.  
 additional marking for selector valve with NPT thread:  
 thread (NPT)

### Application

The selector valve BV DN 25/40/50 is used in accordance with the “documentation of special extinguishing systems” in fixed CO<sub>2</sub>, argon, nitrogen, IG-55 and IG-541 high pressure fire extinguishing systems or FK-5-1-12 and HFC-227ea fire systems respectively.  
 In case of fire the selector valve DN 25/40/50 is used for flooding selected extinguishing zones.

### Functional description

After a fire has been detected in one of the extinguishing zones of a multi- zone system, the appropriate selector valve opens. The extinguishing agent, CO<sub>2</sub>, argon, nitrogen, IG-55, IG-541 or FK-5-1-12 and HFC-227ea, flows into the relevant downstream pipe work of the extinguishing zone.

A safety valve is mounted on the manifold in order to release any excessive pressure.

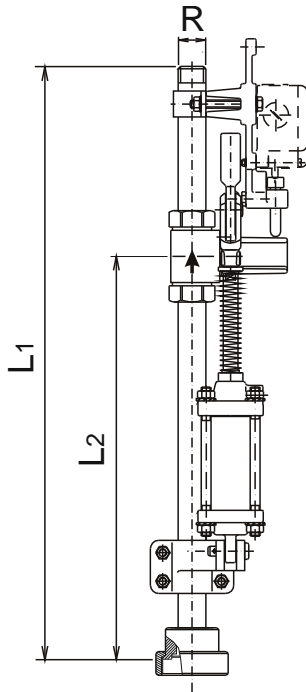
For recommissioning, the selector valve has to be closed manually by using the reset hand lever. The right position of selector valve may monitored by one or two limit switches.

### Not included in delivery

Limit switch US 432y, 2 contacts .....724420, PS 211-430\_005  
 Manual release lever BV <DN65, 497 mm long .....860346

## Selector Valve MX-BV DN25 – 50 PB235 (Optional)

**Dimension drawing**  
Dimensions in mm (inch)



DN	R	L <sub>1</sub> ±15 (0.6)	L <sub>2</sub> ±15 (0.6)
25	R1 - DIN 2999	810 (31.9)	579 (22.8)
40	R1.1/2 - DIN 2999	795 (31.3)	575 (22.6)
50	R2 - DIN 2999	805 (31.7)	584 (23.0)
25 - NPT	1 - 11.5 NPT	810 (31.9)	579 (22.8)
40 - NPT	1.1/2 - 11.5 NPT	795 (31.3)	575 (22.6)
50 - NPT	2 - 11.5 NPT	805 (31.7)	584 (23.0)

## Push Button Selector Valve (Optional)

### Approvals



1) Listed system covered by UL-File EX15997 (SFFECO Prime FK, SFFECO Prime 227)

2) Part of the system approval (SFFECO Prime FK, SFFECO Prime 227)



### SAP designation

part no. 822674: Push-button selector valve

### Maintenance

technical description push-button selector valve  
part no. 886501

Designation	Part no.	Weight
Push-button selector valve	822674	0.16 kg (0.35 lbs)

### Technical data

Operating medium .....CO<sub>2</sub> - gaseous, argon (IG-01),  
.....nitrogen (IG-100), IG-55, IG-541, HFC-227ea, FK-5-1-12  
Working pressure .....2 to 365 bar (29 to 5294 psi)  
Temperature range .....-20 °C to +50 °C (-4 °F to 122 °F)  
Thread connection .....for precision-drawn steel pipe 10 x 1  
Position of device .....as desired

### Material / Surface

Knurled screw .....brass, nickel plated  
Non-return valve .....steel, galvanized

### Application

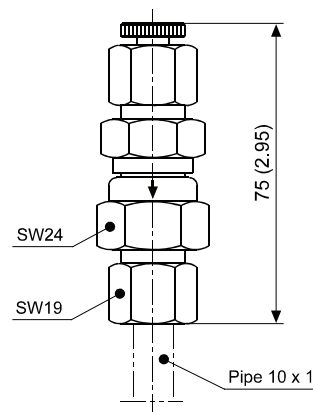
The push-button is used in accordance with the project-specific system schema in fixed fire extinguishing systems.  
The push-button is used to manually vent pilot lines. This ensures that the pilot lines can be pressure-relieved without having to dismount them.

### Included in delivery

Push-button selector valve  
Technical description push-button selector valve part no. 886501

### Dimension drawing

Dimensions in mm (inch)



## Safety Valve G1/2 – 60 bar (Optional)

### Approvals



1) Listed system covered by UL-file EX15997 (SFFECO Prime FK, SFFECO Prime 227)

2) Part of the system approval



### SAP designation

part no. 888007: Safety valve G1/2-66bar

### Maintenance

according to manufacturer's instructions

Designation	Part no.	Weight
Safety valve G1/2 - 66 bar	888007	1.2 kg (2.65 lbs)

### Technical data

Type .....4374.3142

Medium .....FK-5-1-12, HFC-227ea

.....argon (IG-01), nitrogen (IG-100), IG-55, IG-541

Operating temperature range:

.....-20 °C to +55 °C (-4 °F to +131 °F)

UL / ULC / FM .....-18 °C to +50 °C (0 °F to +122 °F)

Response pressure max. ....66 bar (957 psi) at 50 °C (122 °F)

Flow rate:

- FK-5-1-12 .....approx. 530 Nm<sup>3</sup>/h, gaseous

- HFC-227ea .....approx. 718 Nm<sup>3</sup>/h, gaseous

- argon .....approx. 1720 Nm<sup>3</sup>/h, gaseous

- nitrogen .....approx. 1942 Nm<sup>3</sup>/h, gaseous

- IG-55 .....approx. 1721 Nm<sup>3</sup>/h, gaseous

- IG-541 .....approx. 1783 Nm<sup>3</sup>/h, gaseous

Thread .....acc. to ISO 228

Metal seal .....-270 °C to +280 °C (-454 °F to +536 °F)

Position of device .....vertical

Safety valve according to Pressure Equipment Directive

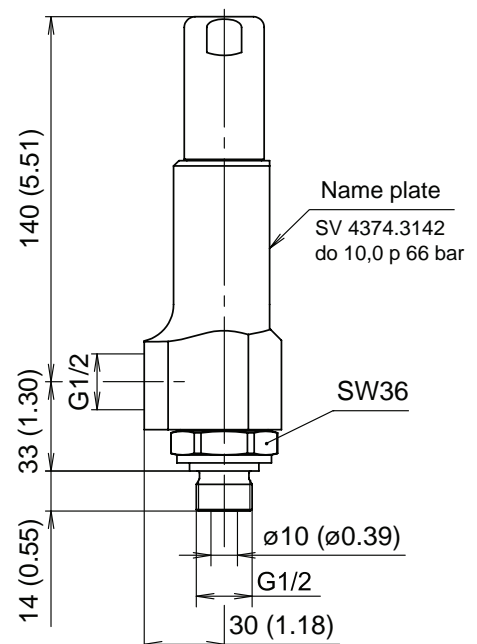
2014/68/EU category IV

### Application

Manifold selector valve for FK-5-1-12 and HFC-227ea systems and for Constant Flow systems.

### Dimension drawing

Dimensions in mm (inch)



## Adapter Hose DN40, DN50 ISO – NPT (Optional)

### Approvals



- 1) Listed system covered by UL-file EX15997 (SFFECO Prime FK, SFFECO Prime 227)
- 2) Part of the system approval



### SAP designation

e.g. part no. 887450: Adapter hose DN40 ISO-NPT

### Maintenance

maintenance-free

Designation		Part no.	Weight kg (lbs)
Adapter hose DN40 ISO-NPT	DN40	887450	0.3 (0.66)
	DN50	887451	0.4 (0.88)

### Technical data

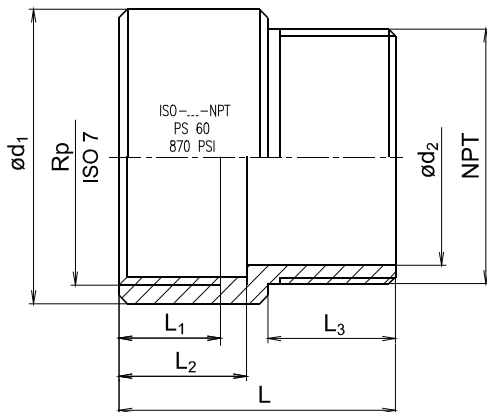
Max. working pressure .....60 bar (870 psi)  
 Thread NPT .....acc. to ANSI / ASME B1.20.1-NPT  
 ISO .....acc. to EN 10226  
 Material .....steel, galvanized acc. to EN 12329 - Fe/Zn12

### Application

To connect FK-5-1-12 and HFC-227ea system parts with ISO thread to NPT pipes.

### Dimension drawing

Dimensions in mm (inch)



Adapter	Rp	NPT	$\varnothing d_1$	$\varnothing d_2$	L	$L_1$	$L_2$	$L_3$
DN40	1.1/2	1.1/2-11,5	57 (2.24)	41,5 (1.63)	60 (2.36)	20 (0.79)	25 (0.98)	30 (1.18)
DN50	2	2-11,5	69 (2.72)	51 (2.01)	65 (2.56)	25 (0.98)	30 (1.18)	30 (1.18)

## Makrofon MX-1 LCP (Optional)

### Approvals / CE marking



- 1) Listed system covered by UL-File EX15997 (SFFECO Prime FK, SFFECO Prime 227)
- 2) Part of the system approval:  
- Oxeo PR LCP, IG-01, IG-100  
- Carbon Dioxide Extinguishing System CO<sub>2</sub> Low Pressure  
- SFFECO Prime FK, SFFECO Prime 227



### SAP designation

e.g. part no. 860050: Makrofon MX-1

### Maintenance

see technical description makrofon MX-1 / MX-1 LCP  
part no. 871828

### Spare parts

Filter type SIKA-B80 .....	821128
Union GE 6-PSR-ED A3 .....	125578
Bracket (large) .....	888619
2x Hex. screw DIN933 M6X16-8.8 gal Zn .....	206261
2x Spring lock washer DIN128-A6-A4 .....	905383
2x Hex. nut DIN934-M6-gal Zn .....	249230

Designation		Part no.	Application	Weight
Makrofon	MX-1	860050	CO <sub>2</sub> controlled systems, at 20 bar low pressure or 60 bar high pressure technology HD-1	1.15 kg (2.54 lbs)
	MX-1 LCP	4004505	all systems with LCP system technology	

### Technical data

Operating medium MX-1 .....CO<sub>2</sub> (gaseous)  
MX-1 LCP .....N<sub>2</sub> (IG-100)

Temperature range:  
- operating acc. to VdS, CE .....-20 to +50 °C (-4 to +122 °F)  
- operating .....-20 to +150 °C (-4 to +302 °F)  
- transport and storage .....-20 to +55 °C (-4 to +131 °F)

Working pressure CO<sub>2</sub> .....8 bar to 70 bar (116 psi to 1015 psi)  
N<sub>2</sub> ..... 8 bar to 11 bar (116 psi to 160 psi)  
.....overpressure-proof up to 140 bar (2030 psi)

Start pressure CO<sub>2</sub> ..... min. 20 bar (min. 290 psi)

Consumption at constant 10 bar (1015 psi):  
- N<sub>2</sub> .....approx. 21 g/min (approx. 0,74 oz/min)

Consumption at constant 70 bar (1015 psi):  
- CO<sub>2</sub> .....approx. 147 g/min (approx. 5,2 oz/min)

Consumption by using one CO<sub>2</sub> pilot cylinder (falling pressure)  
.....approx. 2350 g / 30 min, approx. 2950 g / 60 min

Connection .....for precision drawn steel pipe 6 x 1

Installation position .....sound outlet points downward

Makrofon .....complies with EN 12094-12

CE conformity .....acc. to Construction Products Regulation (EU)  
.....No 305/2011

### Marking

type (Makrofon MX-1), part no. (860050),  
working pressure (8 bar - 70 bar), overpressure-proof (140 bar),  
approval (VdS), conformity (CE), serial number (xxxxxx),  
medium (medium CO<sub>2</sub>) or (medium N<sub>2</sub> (LCP) 4004505)

### Application

The makrofon is a pneumatically operated acoustic alarm device for the use in stationary gas extinguishing systems accordance with the system approval.

This alarm device warns persons being present prior to flooding of the area with extinguishing gas by a loud sound and constant frequency.

The makrofon MX-1 can optionally be fitted with a silencer, not permitted with makrofon MX-1 LCP.

**Caution: At operating pressure the makrofon generates at a distance of 1 m a sound level which may cause hearing disorder.**

### Note

For indoor use only

### Included in delivery

Makrofon with bracket (small and large)  
Technical description makrofon part no. 871828

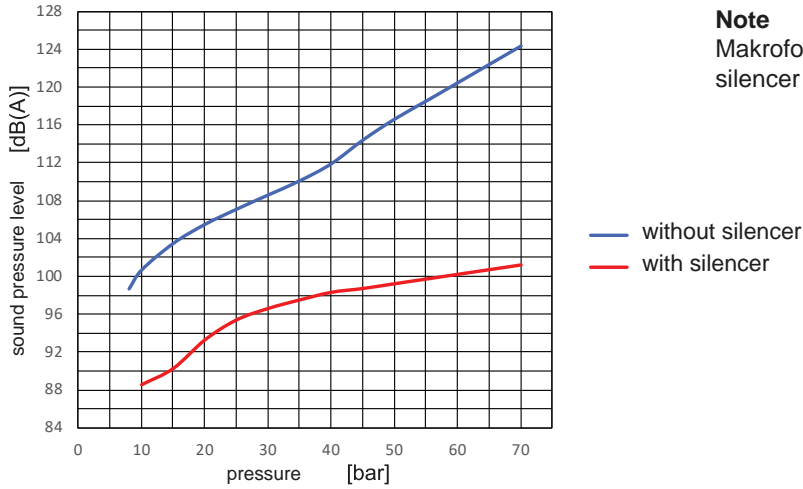
### Not included in delivery

Clamping bolt for wall mounting  
Silencer makrofon MX-1 .....877120, PS 211-410\_002  
(for use with makrofon MX-1 only)

## Makrofon MX-1 LCP (Optional)

### Operating medium CO<sub>2</sub> (Makrofon MX-1):

A-weighted sound pressure level over the pressure range



### Operating medium N<sub>2</sub> (Makrofon MX-1 LCP):

A-weighted sound pressure level < 100 dB(A) at 10 bar

#### Note

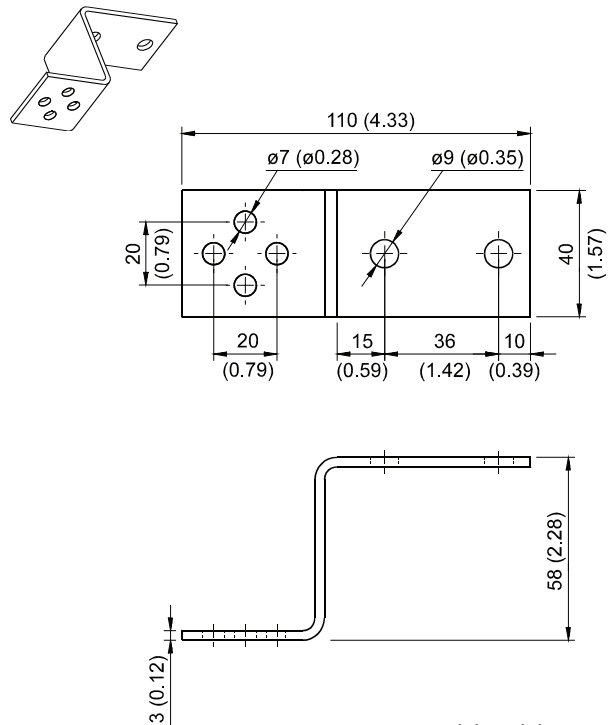
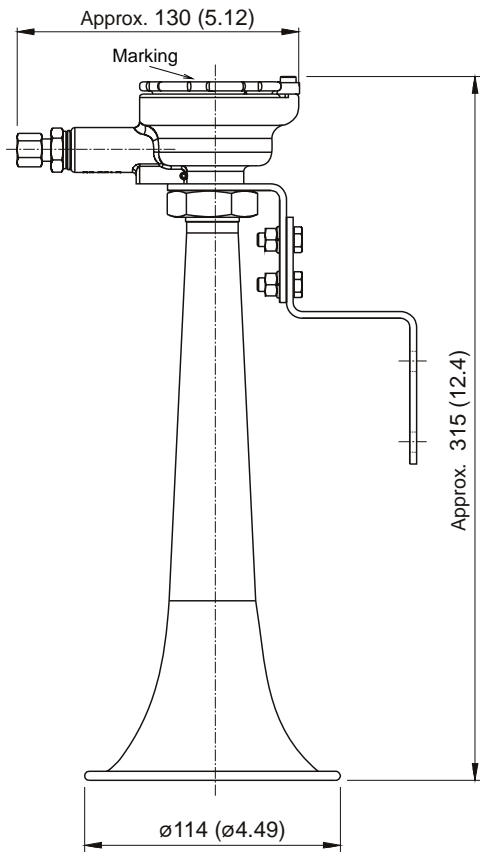
Makrofon MX-1 LCP must not be used together with silencer MX-1.

Note: The above shown curves were determined in the laboratory. Due to the influencing factors given in situ, the real values may deviate from the curves.

### Dimension drawing

Dimensions in mm (inch)

#### Makrofon dimensions and bracket (large) dimensions



material: stainless steel

## Silencer Makrofon MX-1 (Optional)

### Approvals

no approval required



### SAP designation

part no. 877120: Schalldämpfer Makrofon MX-1

### Maintenance

maintenance-free

Designation	Part no.	Weight
Silencer makrofon MX-1	877120	0.12 kg (0.26 lbs)

### Technical data

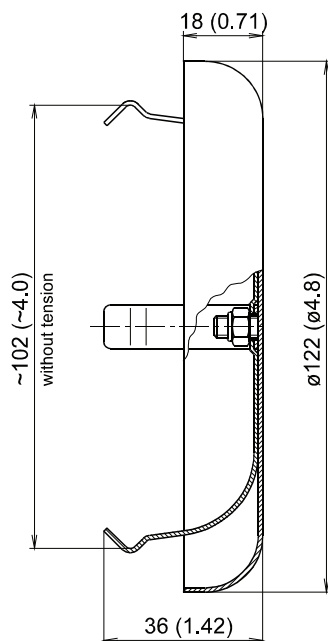
Material .....stainless steel

### Application

Only for use with makrofon MX-1 (operating medium CO<sub>2</sub>).

### Dimension drawing

Dimensions in mm (inch)

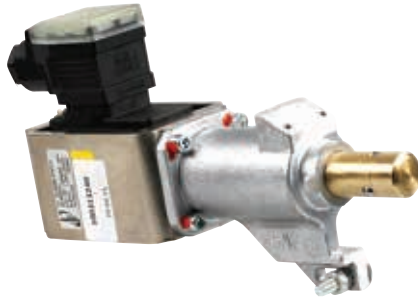


## Release Device EM (Optional)

### Approvals



- 1) Listed system for release device 24 V DC only covered by UL-file EX15997 (SFFECO Prime FK, SFFECO Prime 227)
- 2) Part of the system approval (SFFECO Prime FK, SFFECO Prime 227) release device EM 24 V DC only



### SAP designation

e.g. part no. 885738: Release device EM 24V-DC

### Maintenance

see operating instruction release device EM, part no. 885744

Designation		Part no.	Weight
Release device EM	24 V DC	885738	1.8 kg (4.0 lbs)
	230 V AC <sup>3)</sup>	885739	

<sup>3)</sup> Release device EM 230 V AC without approval

### Technical data

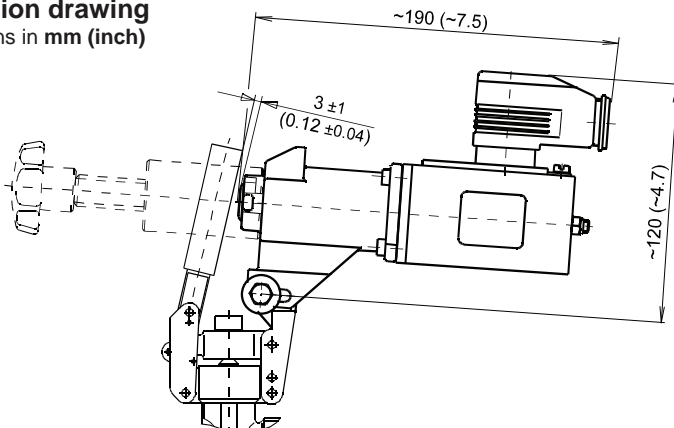
Temperature range  
Solenoid .....-20 °C to +50 °C (-4 °F to 122 °F)  
Magnetic force .....44 N  
Switching duration .....100 %  
Voltage .....24 V DC (18 - 28 V DC) / 230 V AC  
Current .....1.04 A / 0.12 A  
Stroke .....9 mm (0.35")  
IP code .....IP 54  
(by accordingly covering of the pull and pressure rod side)

### Application

The release device EM may be used only in accordance with the "documentation of special extinguishing systems" in fixed CO<sub>2</sub>, argon, nitrogen, IG-55 and IG-541 fire extinguishing systems. It is used for electrical release of lever valve.

### Dimension drawing

Dimensions in mm (inch)



### Functional description

The solenoid of the release device EM is triggered by an electrical signal whereby the spring loaded release bolt is unlocked. The release bolt pushes against the lever of the valve, which turns around by approx. 90°.

### Included in delivery

Release device EM with fastening material  
Operating instruction release device EM part no. 885744

### Additionally for release device EM 24 V DC:

- Card MVA LÖ .....782239
- Technical description card MVA LÖ .....904653

### Not included in delivery

Reset tool for release device EM .....885530, see control device  
Bracket for reset tool release device EM .....886367, see control device  
Monitoring for release device EM ....885740, see monitoring device

## Reset Tool for Release Device EM

### and Bracket for Reset Tool (Optional)

#### Approvals

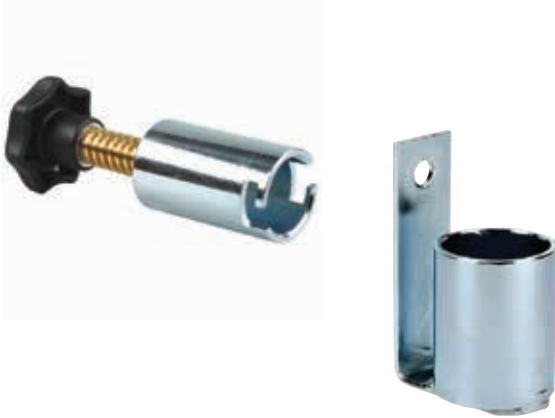
no approval required

#### SAP designation

e.g. part no. 885530: Reset tool release device EI

#### Maintenance

maintenance-free



Designation	Part no.	Weight kg (lbs)
Reset tool for release device EM	885530	0.31 (0.68)
Bracket for reset tool	886367	0.32 (0.71)

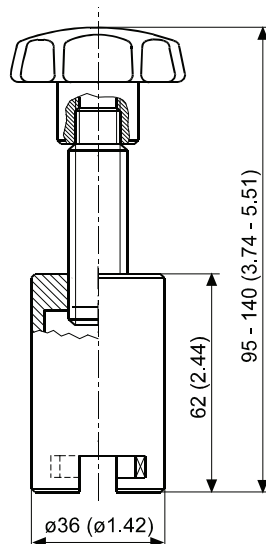
#### Technical data

Bracket for reset tool release device EM .....steel, galvanized

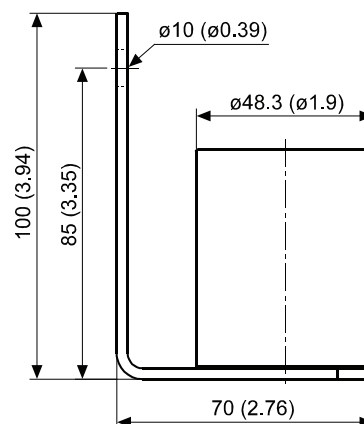
#### Dimension drawing

Dimensions in mm (inch)

#### Reset tool for release device EM



#### Bracket for reset tool release device EM



## Safety Device Malfunction Pressure

### SFD DN4 (Optional)

#### Approvals



<sup>1)</sup> Listed system covered by UL-File EX15997 (SFFECO Prime FK, SFFECO Prime 227)

<sup>2)</sup> Part of the system approval (SFFECO Prime FK, SFFECO Prime 227)



#### SAP designation

part no. 885869: Safety device malfunction pressure SFD DN4

#### Maintenance

see technical description safety device malfunction pressure SFD DN4 part no. 885867

Designation	Part no.	Weight
Safety device malfunction pressure SFD DN4	885869	0.15 kg (0.33 lbs)

#### Technical data

Operating medium .....argon (IG-01), nitrogen (IG-100),  
.....IG-55, IG-541, carbon dioxide (CO<sub>2</sub>) / gaseous,  
.....HFC-227ea, FK-5-1-12  
Working pressure ..... 140 bar (2030 psi)  
Test pressure ..... 210 bar (3045 psi)  
Temperature range .....-20 °C to +50 °C (-4 °F to +122 °F)  
Connection DN4 .....pipe 6 x 1  
Installation position .....vertical, see page 2

#### Material / Surface

Housing .....brass  
Gasket .....NBR  
Ball .....1.4301

#### Application

The safety device malfunction pressure is used in accordance with the project-specific system schema in fixed fire extinguishing systems. The safety device malfunction pressure is intended only for releasing small amounts of leakage in pneumatic pilot lines. The safety device closes automatically on higher pressure.

#### Note

The safety device malfunction pressure **has to be** installed upright into the pilot lines as well an installation nearby a potential leakage (e.g. pilot gas tank) is recommended.

#### Included in delivery

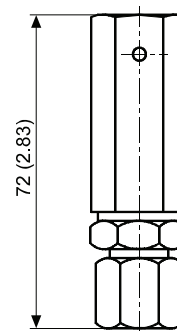
Safety device malfunction pressure SFD DN4  
Technical description safety device malfunction pressure SFD DN4 part no. 885867

#### Not included in delivery

Unions and pipe for extinguishing pipework and pilot pipes  
see page 2/2

#### Dimension drawing

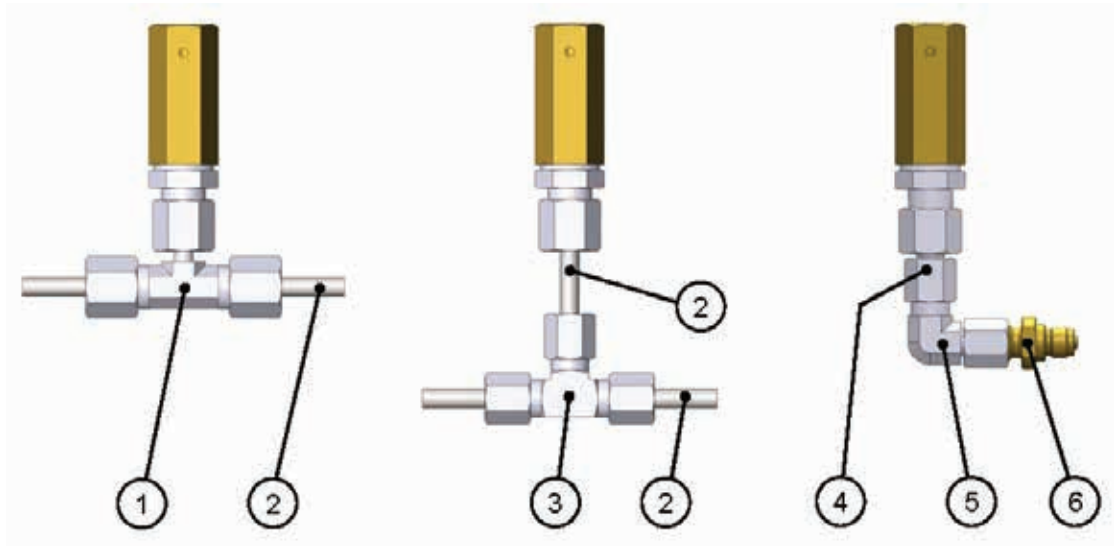
Dimensions in mm (inch)



## Safety Device Malfunction Pressure

### SFD DN4 (Optional)

#### Installations examples



#### **Not included in delivery**

- Item 1: Union EVT 06 SA3C .....part no. 886406
- Item 2: Pipe 6 x 1 mm (0.236 x 0.039 inch) .....part no. 823563
- Item 3: Union T 6-PLA3C .....part no. 125633
- Item 4: Union GZR06L/06SCF .....part no. 910650
- Item 5: Union EW 06 LCF .....part no. 889145
- Item 6: Adapter M12x1.5 – G1/8 .....part no. 887644  
(for release device pneumatic or pneumatic/manual)

## Accessories Connection Pressure Relief

### SFD DN4 (Optional)

#### Approvals



<sup>1)</sup> UL applies to push-button selector valve  
Listed system covered by UL-File EX15997 (SFFECO Prime FK, SFFECO Prime 227)



#### SAP designation

part no. 889320: Accessories connection pressure relief

#### Maintenance

see technical description accessories connection pressure relief (English) part no. 912454

Designation	Part no.	Weight
Accessories connection pressure relief SFD DN4	889320	0.57 kg (1.26 lbs)

#### Technical data

Operating medium .....argon (IG-01), nitrogen (IG-100),  
.....IG-55, IG-541, carbon dioxide (CO<sub>2</sub>) / gaseous,  
.....HFC 227 ea, FK 5-1-12  
Working pressure..... 140 bar (2030 psi)  
Temperature range .....-20 °C to +50 °C (-4 °F to +122 °F)  
Installation position .....vertical, see page 2

#### Material / Surface

Housing .....brass / steel  
Gasket .....NBR  
Ball (safety device malfunction pressure SFD DN4) .....1.4301

#### Application

The pressure relief is used in accordance with the project-specific system schema in fixed fire extinguishing systems.

Intended use of the single components:

- The safety device malfunction pressure is intended only for releasing small amounts of leakage in pneumatic pilot lines. The safety device closes automatically on higher pressure.
- The push-button selector valve is intended only to manually vent of pneumatic pilot lines.

#### Note

The safety device malfunction pressure **has to be** installed upright into the pilot lines as well an installation nearby a potential leakage (e.g. pilot gas tank) is recommended.

#### Included in delivery

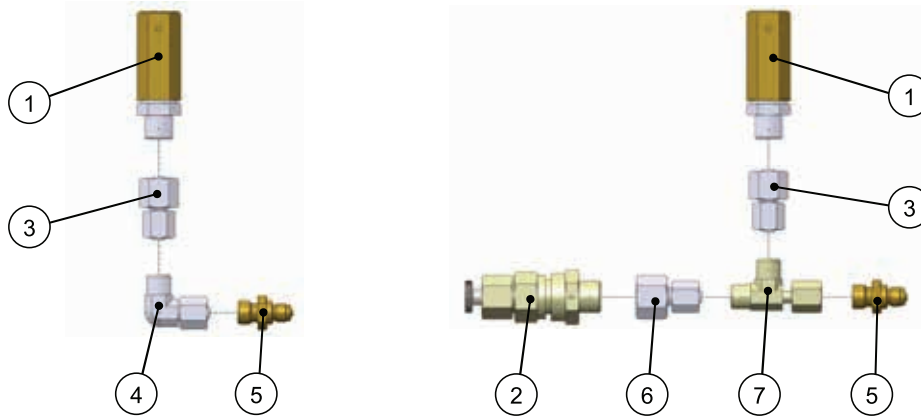
Accessories connection pressure relief SFD DN4 consisting of:

- Safety device malfunc. pressure SFD DN4 ...885869, see control device
- Push-button selector valve .....822674, see control device
- Union EVL 6-PL A3C .....786956
- Adapter M12x1,5 - G1/8 "227" ....887644
- Union GZR06L/06SCF .....910650
- Union GZR10/06LCF .....910651
- Union EW06LCF .....889145
- Technical description accessories connection pressure relief part no. 910653

## Accessories Connection Pressure Relief

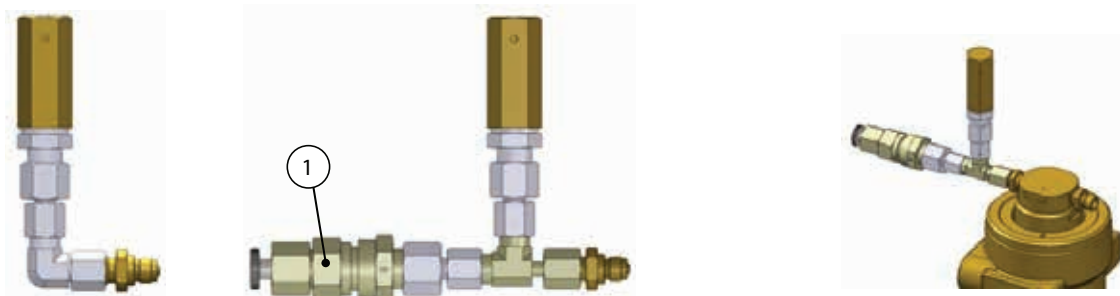
### SFD DN4

#### Accessories connection pressure relief (individual parts)



- Item 1 Safety device malfunction pressure SFD DN4
- Item 2 Push-button selector valve
- Item 3 Union GZR06L/06SCF
- Item 4 Union EW06LCF
- Item 5 Adapter M12x1,5 – G1/8  
(for release device pneumatic or pneumatic/manual)
- Item 6 Union GZR10/06LCF
- Item 7 Union EVL 6-PLA3C

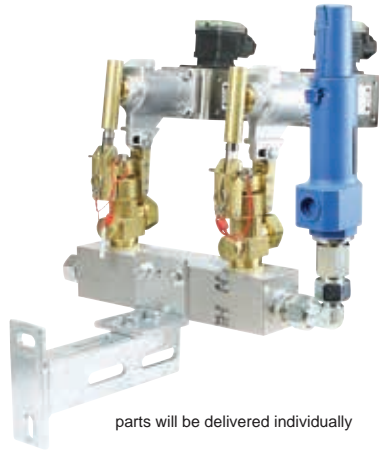
#### Accessories connection pressure relief (assembled)



Example of application

The version with the push-button selector valve (item 1) is used to manually vent pilot lines in combination with a pneumatic release device (PAE).

## Pilot Control Manifold CO<sub>2</sub> – DN15



parts will be delivered individually

### Approvals



1) Listed system covered by UL-File EX15997 (SFFECO Prime FK, SFFECO Prime 227)

2) Part of the system approval (SFFECO Prime FK, SFFECO Prime 227)

### SAP designation

e.g. part no. 830778: Pilot control manifold CO<sub>2</sub> - DN15 - 2

### Maintenance

see technical description pilot control manifold DN15  
part no. 876772

Branches	Part no.	Weight approx. kg (lbs)
2	830778	9.7 (21.4)
3	830791	14.2 (31.3)
4	830808	17.7 (39.0)
5	830833	22.2 (48.9)
6	830857	26.8 (59.1)
7	830870	30.2 (66.6)
8	830894	34.7 (76.5)

Branches	Part no.	Weight approx. kg (lbs)
9	830912	39.3 (86.6)
10	830936	42.7 (94.1)
11	830950	47.3 (104.3)
12	830973	51.8 (114.2)
13	830985	55.2 (121.7)
14	830997	59.8 (131.8)
15	834115	64.3 (141.8)

### Technical data

Operating medium .....carbon dioxide (CO<sub>2</sub>)  
Working pressure .....140 bar (2030 psi)  
Test pressure .....210 bar (3045 psi)  
Temperature range .....-20 °C to +50 °C (-4 °F to +122 °F)  
Connected voltage .....24 V DC

### Product sheets also applying

Safety valve G1/2 - 140 bar .....886282, PS 214-341\_001  
Argon cylinder valve K85-20.0-S49 .....871014, PS 211-131\_001  
Lever - cylinder valve .....885603, PS 211-420\_006  
Release device EM 24 V DC .....885738, PS 211-420\_003

### Application

The pilot control manifold DN 15 may only be used in accordance with system approval in stationary CO<sub>2</sub>, argon, nitrogen, IG-55, IG-541, FK-5-1-12 and HFC-227ea fire extinguishing systems. It is used as a pilot control valve in the pneumatic activation of fire extinguishing systems or as a CO<sub>2</sub> extinguishing agent manifold for small design quantity, for example local protection for electrical devices.

### Functional description

The release device EM is triggered by an electrical activation. The release bolt of the release device is released and actuates the valve lever, which turns around by approx. 90° and opens the valve.  
The safety valve prevents an undue exceeding of the operating pressure.

### Included in delivery

Pilot control manifold CO<sub>2</sub> - DN15 (not pre-assembled)  
Techn. description pilot control manifold DN15 part no. 876772  
Installation drawing pilot control manifold DN15 part no. 827301

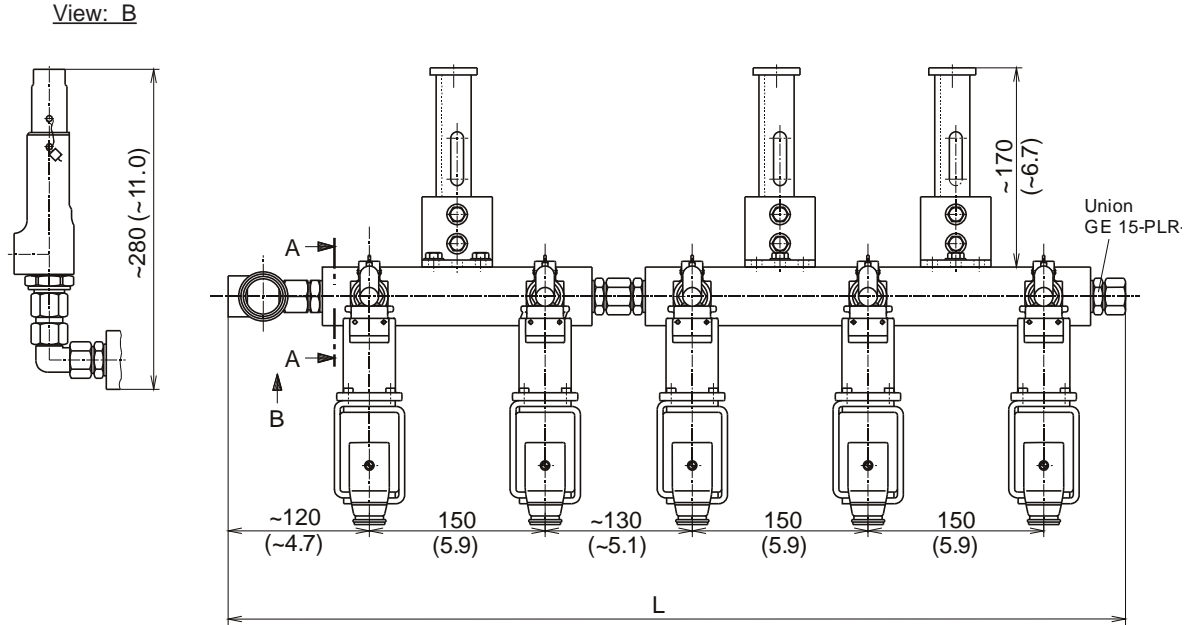
### Not included in delivery

Connection to valve:  
Adapter for connecting CO<sub>2</sub> - Ermeto DN4 .....827325  
DN8 .....855425  
Monitoring for release device EM .....885740, PS 211-430\_008

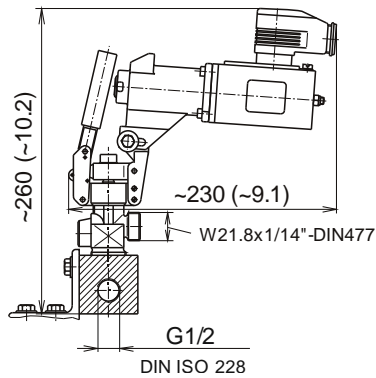
## Pilot Control Manifold CO2 - DN 15 (Optional)

### Dimension drawing

Dimensions in mm (inch)



### Section: A-A



Branches	L
2	340 (13.4)
3	490 (19.3)
4	620 (24.4)
5	770 (30.3)
6	920 (36.2)
7	1050 (41.3)
8	1200 (47.2)
9	1350 (53.2)
10	1480 (58.3)
11	1630 (64.2)
12	1780 (70.1)
13	1910 (75.2)
14	2060 (81.1)
15	2210 (87.0)

## Disable Device Complete (Optional)

### Approvals / CE marking



1) Listed system covered by UL-File EX15997 ( SFFECO Prime FK, SFFECO Prime 227)

2) Part of the system approval:

- Oxco PR LCP, IG-01, IG-100
- Carbon Dioxide Extinguishing System CO<sub>2</sub> Low Pressure
- SFFECO Prime FK, SFFECO Prime 227

### SAP designation

part no. 878070: Disable device complete

### Maintenance

see technical description disable device complete part no. 878069

Designation	Part no.	Weight
Disable device complete	878070	0.8 kg (1.8 lbs)

### Technical data

Operating medium ..... IG-01 (argon), IG-100 (nitrogen),  
.....IG-55, IG-541, CO<sub>2</sub>, FK-5-1-12, HFC-227ea  
Working pressure .....140 bar (2030 psi)  
Nominal diameter .....DN6  
Connection threads .....M12 x 1.5  
Temperature range .....-30 °C to +80 °C  
Connection .....cone for 6 mm steel pipe  
Disable device .....complies with EN 12094-6  
CE conformity .....acc. to Construction Products Regulation (EU)  
.....No. 305/2011

### Application

The disable device may only be used in accordance with system approval in stationary IG-01, IG-100, IG-55, IG-541, CO<sub>2</sub>, FK-5-1-12 and HFC-227ea extinguishing systems. The disable device is corresponding to the German information DGUV 205-006 (Working in oxygen-reduced atmospheres), a non electrical disable device to lock extinguishing fire system. It prevents the extinguishing agent to be released in the extinguishing area. For repair or maintenance work in the protected area, when the system can be activated unintentionally or people can not leave the area within the pre - warning time, the extinguishing system must be blocked.

### Functional description

The ball valve enables the pilot pipe to be shut off. At the same time the pilot pipe is vented to preclude an uncontrolled rise of pressure. When the system is in normal operation the ball valve is locked with a padlock in the eyelet so that the marking „Betrieb“ (operation) is visible.

To block the pilot pipe, the padlock is removed and the handle of the ball valve turned clockwise to the stop. The ball valve is then locked in position by fastening the padlock in the eyelet so that the marking „Blockiert“ (isolation) is visible. The resetting of the ready status is carried out in reversed order so that the marking "Betrieb" (operating) is visible again. For monitoring the operating and isolation position a limit switch for every position must be mounted (not included in delivery).

### Included in delivery

Disable device type DN6 .....885375  
Padlock .....131777  
Retainer shuttle valve .....873497  
2x Cap nut M 6-LA3C .....173959  
2x Progressive ring DPR 6-L/S-A3D .....208208  
Technical description disable device complete .....878069  
as well as fastening material

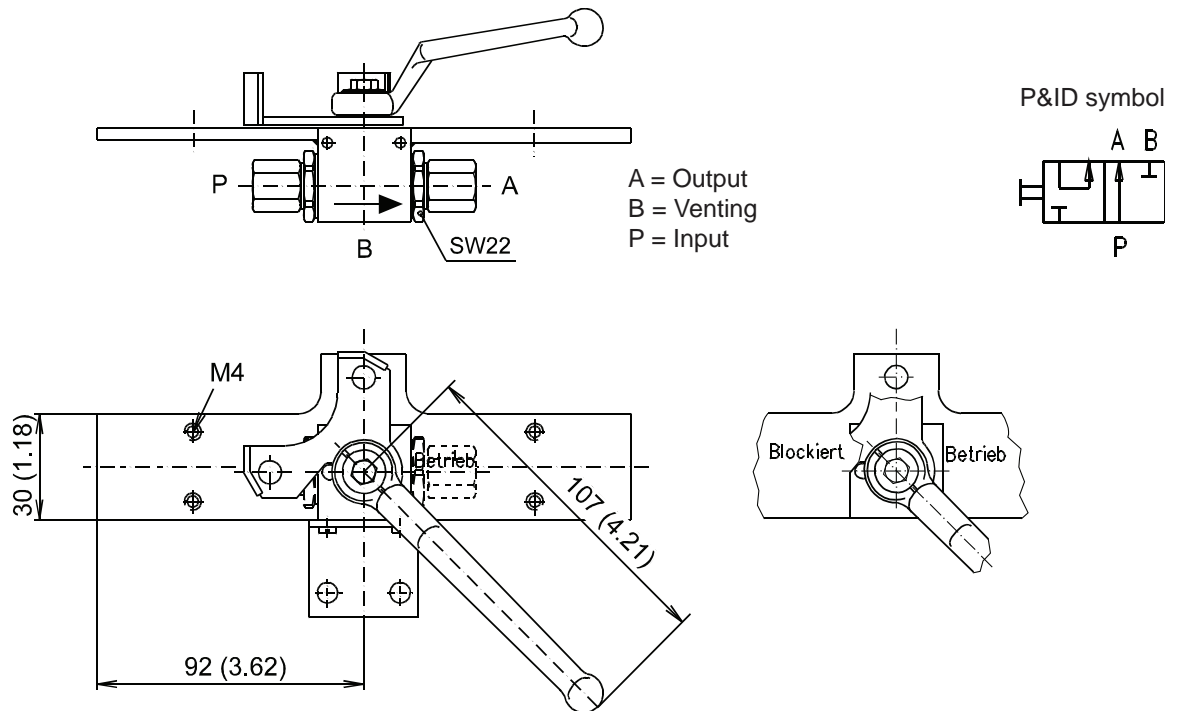
### Not included in delivery

The following must be ordered separately for monitoring of each ball valve position:  
Limit switch type ZS 256-11Z .....828482, PS 211-430\_004  
2x Cheese-head screw DIN84-M4x25-brass .....106745  
2x Washer DIN125-B 4,3 brass .....109734

## Disable Device Complete (Optional)

### Dimension drawing

Dimensions in mm (inch)



## Shuttle Non-Return Valve WRV

### DN4 and DN8 (Optional)



#### Approvals / CE marking



<sup>1)</sup> Listed system covered by UL-File UL-file EX15997 (SFFECO Prime FK SFFECO Prime 227)

<sup>2)</sup> Part of the system approval:

- Oxeo PR LCP, IG-01, IG-100
- Carbon Dioxide Extinguishing System CO<sub>2</sub> Low Pressure
- SFFECO Prime FK, SFFECO Prime 227

#### SAP designation

e.g. part no. 886247: Shuttle non-return valve WRV 4

#### Maintenance

see technical description shuttle non-return valve part no. 886246

DN	Part no.	For pipe	Weight
4	886247	6 x 1	0.25 kg (0.55 lbs)
8	886248	10 x 1	0.24 kg (0.53 lbs)

#### Technical data

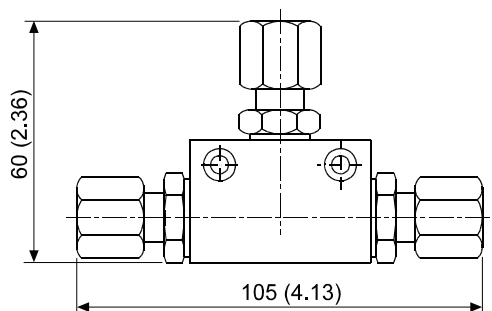
Operating medium .....CO<sub>2</sub> - gaseous, argon (IG-01),  
.....nitrogen (IG-100), IG-55, IG-541, HFC-227ea, FK-5-1-12  
Working pressure .....2 to 140 bar (29 to 2030 psi)  
Test pressure .....210 bar (3045 psi)  
Rate of pressure rise .....min. 3 bar/s (43,5 psi/s)  
Installation position .....feedings only horizontal  
Shuttle non-return valves .....complies with EN 12094-13  
CE conformity .....acc. to Construction Products Regulation (EU)  
.....No. 305/2011

#### Material / Surface

Housing .....aluminium  
Gasket .....NBR  
Ball .....stainless steel

#### Dimension drawing

Dimensions in mm (inch)



#### Application

The shuttle non-return valve is used in in stationary CO<sub>2</sub>, IG-01, IG-100, IG-55, IG-541, FK-5-1-12 and HFC-227ea extinguishing systems according to the system approval.

#### Functional description

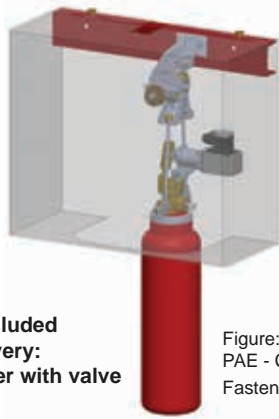
The shuttle non-return valve for the pneumatic control allows the differential direct control of pneumatic units with two pressure sources.

#### Included in delivery

Shuttle non-return valves WRV  
Technical description shuttle non-return valve part no. 886246

## Pneumatic Release Device PAE CO<sub>2</sub>

### Electrical UL/FM(Optional)



**Not included  
in delivery:  
Cylinder with valve**

Figure:  
PAE - CO<sub>2</sub> electrical with protective cover  
Fastening material not shown

#### Approvals



- 1) Part of the system approval (SFFECO Prime FK, SFFECO Prime 227)
- 2) Listed system covered by UL-File EX15997 (SFFECO Prime FK, SFFECO Prime 227)

#### SAP designation

e.g. part no. 911751: PAE-CO<sub>2</sub>-EM-3,6kg compl. FM/UL

#### Maintenance

see operating instruction PAE-CO<sub>2</sub> part no. 885374

Pneumatic release device FM/UL		Part no.	Amount filled <sup>3)</sup>	Weight <sup>4)</sup> approx.	
PAE - CO <sub>2</sub> electrical	with protective cover	3,6 kg	911751	3.6 kg (7.9 lbs)	28 kg (62 lbs)
		7,1 kg	911759	7.1 kg (15.7 lbs)	38 kg (84 lbs)
	without protective cover	3,6 kg	911750	3.6 kg (7.9 lbs)	24 kg (53 lbs)
		7,1 kg	911758	7.1 kg (15.7 lbs)	34 kg (75 lbs)
PAE - CO <sub>2</sub> electrical with reserve	with protective cover	3,6 kg	911753	2x 3.6 kg (2x 7.9 lbs)	48 kg (106 lbs)
		7,1 kg	911761	2x 7.1 kg (2x 15.7 lbs)	66 kg (146 lbs)
	without protective cover	3,6 kg	911752	2x 3.6 kg (2x 7.9 lbs)	44 kg (97 lbs)
		7,1 kg	911760	2x 7.1 kg (2x 15.7 lbs)	62 kg (137 lbs)

<sup>3)</sup> Cylinder with valve are not included in delivery

<sup>4)</sup> Weight: PAE compl. with cylinder

#### Technical data

Operating medium .....CO<sub>2</sub> - gaseous  
Working pressure .....140 bar (2030 psi)  
Test pressure .....210 bar (3045 psi)  
Temperature range .....-20 °C to +50 °C (-4 °F to +122 °F)  
Pilot cylinder volume .....5.4 l or 10.7 l  
Thread connection .....for precision steel pipe 6x1

#### Product sheets also applying

Weighing device WE4 .....see ad-on part cylinder  
Weight for weighing device 0.16 kg / 0.3 kg .....see ad-on part cylinder  
Release device EM 24 V DC .....see control device  
Lever - cylinder valve EM release .....see control device

#### Application

The release device PAE must only be used in accordance with system approval in stationary carbon dioxide, IG-01 (argon), IG-100 (nitrogen), FK-5-1-12 and HFC-227ea fire extinguishing systems. The release device PAE provides all pneumatic system parts with carbon dioxide (CO<sub>2</sub>) as work medium and is used to activate:

- Cylinder batteries
- Selector valves
- Pneumatic control elements and alarm components (makrofon)
- Pneumatic door closing devices
- Pneumatic pressure relief dampers.

#### Functional description

The activation of the release device PAE occurs electrically (release device EM). Thus the toggle valve on the pilot cylinder is opened and the carbon dioxide (CO<sub>2</sub>) flows through the connected pipe assembly respectively the hose to the pneumatic system components of the fire extinguishing system. Depending on the version a 5.4 l (1.43 US.liq.gal) or 10.7 l (2.83 US.liq.gal) pilot cylinder is used. The PAE with reserve has an additional pilot cylinder (reserve). The entire release device PAE is fastened onto a bearing structural element via a U-profile.

#### Note

Each PAE has to be installed complete with protective cover only. Exception: If an additional protecting guard is provided (for example enclosure).

#### Included in delivery

Pneumatic release device PAE - CO<sub>2</sub> electrical with adapter connection NPT (911762), operating instructions PAE-CO<sub>2</sub> as well as fastenings

additionally for PAE with protective cover:

Protective cover PAE .....885322

## Pneumatic Release Device PAE CO<sub>2</sub>

### Electrical with Protective Cover UL/FM(Optional)

#### Not included in delivery

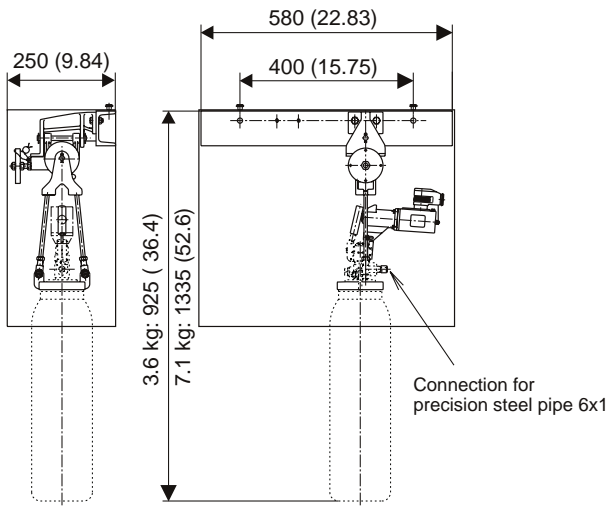
Cylinder with valve 5.4 l / 10.7 l:

- CO<sub>2</sub> - Cylinder UL, EU .....see cylinder filled
- Pre-assembled connection pipe ...see operating instructions PAE
- Support weighing device PAE ...886350, see mounting accessories
- Reset tool .....885530, see control device
- Monitoring loss pneum. actuat. device ...888998, see monitoring device
- Monitoring for release device EM .....885740, see monitoring device

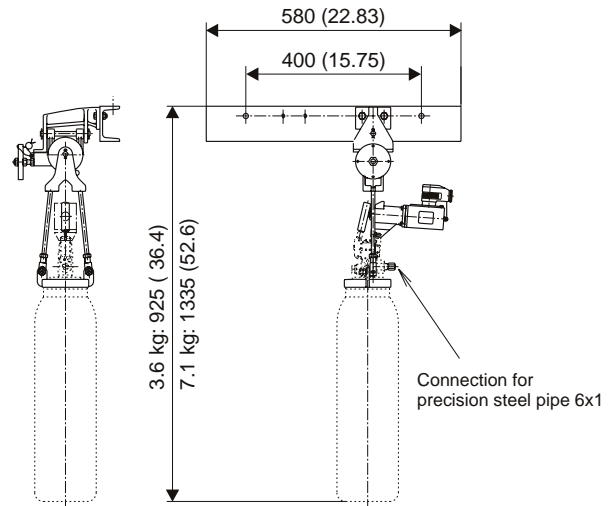
#### Dimension drawing

Dimensions in mm (inch)

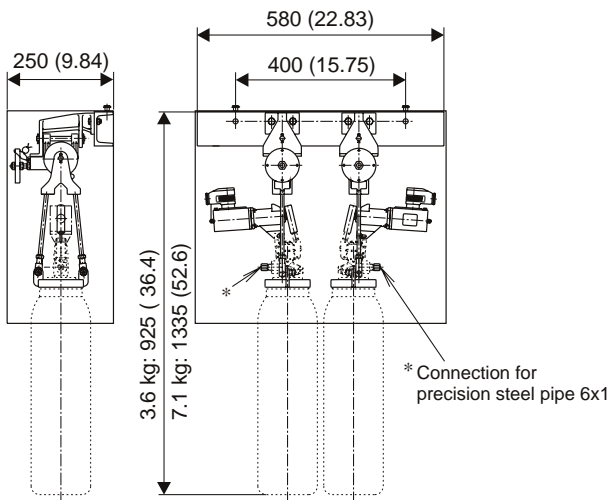
PAE - CO<sub>2</sub> electrical with protective cover



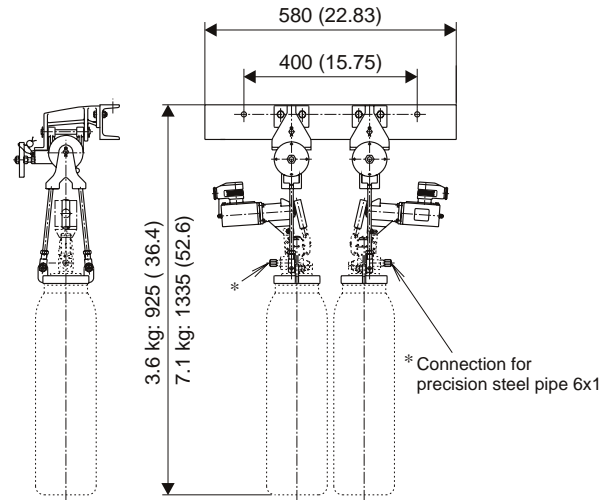
PAE - CO<sub>2</sub> electrical without protective cover



PAE - CO<sub>2</sub> electrical with reserve with protective cover

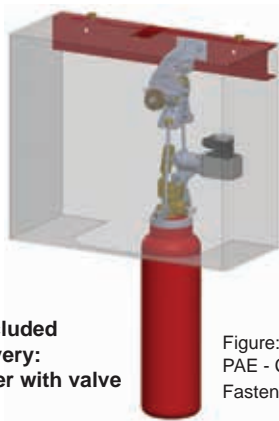


PAE - CO<sub>2</sub> electrical without reserve with protective cover



## Pneumatic Release Device PAE CO<sub>2</sub>

### Electrical DOT UL/FM(Optional)



**Not included  
in delivery:  
Cylinder with valve**

Figure:  
PAE - CO<sub>2</sub> electrical with protective cover  
Fastening material not shown

#### Approvals



- 1) Part of the system approval (SFFECO Prime FK, SFFECO Prime 227)
- 2) Listed system covered by UL-File EX15997 (SFFECO Prime FK, SFFECO Prime 227)

#### SAP designation

part no. 911755: PAE-CO<sub>2</sub>-EM-6,8kg compl. DOT FM/UL

#### Maintenance

see operating instructions PAE-CO<sub>2</sub> part no. 885374

Pneumatic release device DOT FM/UL		Part no.	Amount filled <sup>3)</sup>	Weight <sup>4)</sup> approx.
PAE - CO <sub>2</sub> electrical	with protective cover	911755	6.8 kg (15.0 lbs)	38 kg (84 lbs)
	without protective cover	911754		34 kg (75 lbs)
PAE - CO <sub>2</sub> electrical with reserve	with protective cover	911757	2x 6.8 kg (2x 15.0 lbs)	66 kg (146 lbs)
	without protective cover	911756		62 kg (137 lbs)

<sup>3)</sup> Cylinder with valve are not included in delivery

<sup>4)</sup> Weight: PAE compl. with cylinder

#### Technical data

Operating medium .....CO<sub>2</sub> - gaseous  
Working pressure .....140 bar (2030 psi)  
Test pressure .....210 bar (3045 psi)  
Temperature range .....-20 °C to +50 °C (-4 °F to +122 °F)  
Pilot cylinder volume .....10.7 l (2.83 US.liq.gal)  
Thread connection .....for precision steel pipe 6x1

#### Product sheets also applying

Weighing device WE4 .....see ad-on part cylinder  
Weight for weighing device 0.3 kg .....see ad-on part cylinder  
Release device EM 24 V DC .....see control device  
Lever - cylinder valve EM release .....see control device

#### Application

The release device PAE must only be used in accordance with system approval in stationary carbon dioxide, IG-01 (argon), IG-100 (nitrogen), FK-5-1-12 and HFC-227ea fire extinguishing systems. The release device PAE provides all pneumatic system parts with carbon dioxide (CO<sub>2</sub>) as work medium and is used to activate:

- Cylinder batteries
- Selector valves
- Pneumatic control elements and alarm components (makrofon)
- Pneumatic door closing devices
- Pneumatic pressure relief dampers.

#### Note

Each PAE has to be installed complete with protective cover only. Exception: If an additional protecting guard is provided (for example enclosure).

#### Functional description

The activation of the release device PAE occurs electrically (release device EM). Thus the toggle valve on the pilot cylinder is opened and the carbon dioxide (CO<sub>2</sub>) flows through the connected pipe assembly respectively the hose to the pneumatic system components of the fire extinguishing system. The PAE with reserve has an additional pilot cylinder (reserve). The entire release device PAE is fastened onto a bearing structural element via a U-profile.

#### Included in delivery

Pneumatic release device PAE - CO<sub>2</sub> electrical with adapter connection NPT (911762), operating instructions PAE-CO<sub>2</sub> as well as fastenings

additionally for PAE with protective cover:

Protective cover PAE .....885322

#### Not included in delivery

Cylinder with valve 10.7 l:

- CO<sub>2</sub> - Cylinder DOT - UL .....  
(Filled DOT cylinders may not be transported in Europe)

Pre-assembled connection pipe ...see operating instructions PAE  
Support weighing device PAE ...886350, see mounting accessories  
Reset tool .....885530, see control device  
Monitoring loss pneum. actuat. device ...888998, see monitoring device  
Monitoring for release device EM .....885740, see monitoring device

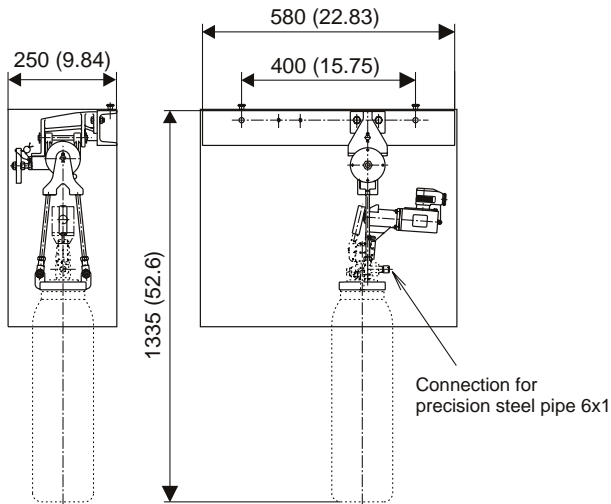
## Pneumatic Release Device PAE CO<sub>2</sub>

### Electrical DOT UL/FM(Optional)

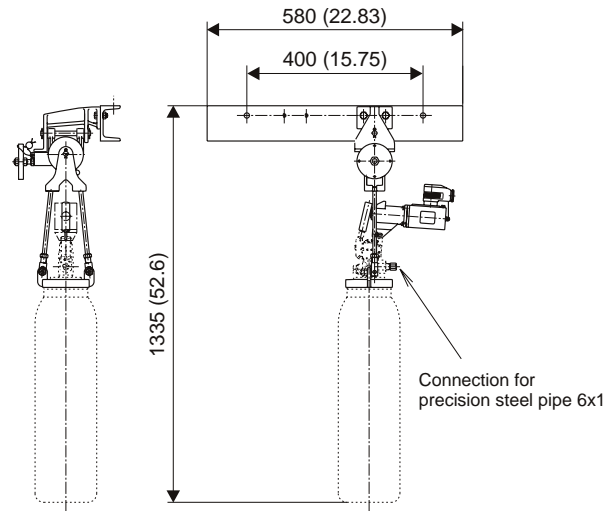
#### Dimension drawing

Dimensions in mm (inch)

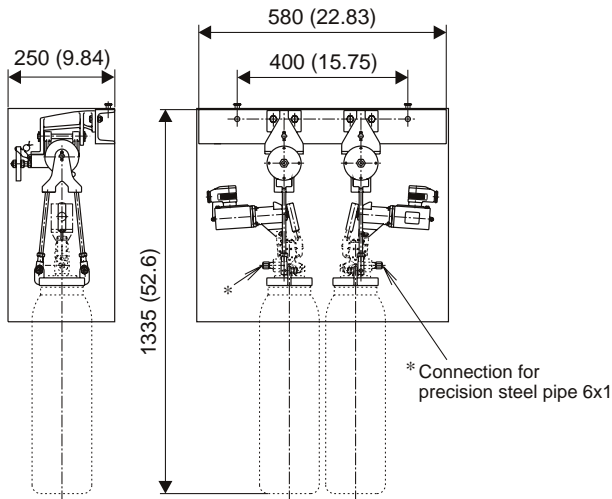
PAE - CO<sub>2</sub> electrical with protective cover



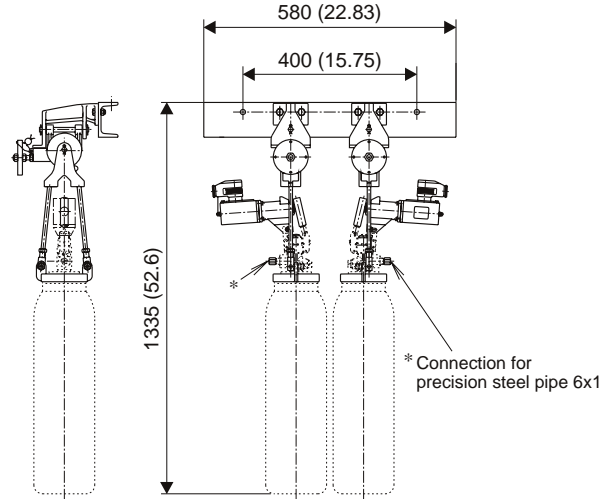
PAE - CO<sub>2</sub> electrical without protective cover



PAE - CO<sub>2</sub> electrical with reserve with protective cover



PAE - CO<sub>2</sub> electrical without reserve with protective cover



## Pressure Gauge UL, SFFECO Prime 227 (Optional)

### Approvals



1) Listed system covered by UL-file EX15997 (SFFECO Prime 227)

2) Part of the system approval

### SAP designation

e.g. part no. 912100: Pressure gauge UL 725 (50) psi (bar)  
HFC-227ea

### Maintenance

functional check within the framework of system-specific  
functional test

### Spare parts

- O-ring part no. 888023
- Supporting ring O-ring part no. 888024



Nominal pressure at 70 °F (21 °C) psi (bar)	Part no.	Pressure range psi (bar)	max. Pressure psi (bar)	Weight kg (lbs)
360 (25)	912100	870 (60)	725 (50)	0.15 (0.33)
610 (42)	912101	1160 (80)	1015 (70)	
725 (50)	912102	1450 (100)	1160 (80)	

### Technical data

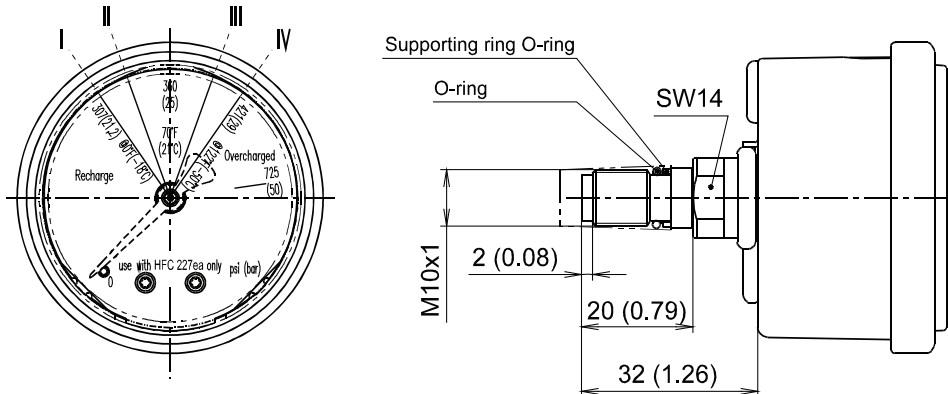
Pressure medium .....HFC-227ea  
Nominal size .....50  
Accuracy class .....1.6  
Temperature ranges .....-40 °C to +60 °C (-40 °F to 140 °F)  
.....measuring medium max. +60 °C (140 °F)  
Measuring network, motion work .....copper alloy

### Design of instrument dial

Design of instrument dial .....according to UL 2166  
Material .....aluminium, white  
Scale .....dual scale (bar / psi)  
Indicating range marked:  
- 0 to I .....Recharge  
- I to II .....red  
- II to III .....green  
- III to IV .....red  
- IV to max. ....Overcharged

## Pressure Gauge UL, SFFECO Prime 227 (Optional)

### Dimension drawing Dimensions in mm (inch)



### Indicating range marked

Nominal pressure at 70 °F (21 °C) psi (bar)	Red area I to II	Green area II to III	Red area III to IV	Marking at nominal pressure	Marking at I	Marking at IV
360 (25)	290-324	324-396	396-493	360 I (25)   70°F I (21°C)	290 (20) @0°F (-18°C)	493 (34) @122°F (50°C)
610 (42)	480-549	549-671	671-767	610 I (42)   70°F I (21°C)	480 (33) @0°F (-18°C)	767 (53) @122°F (50°C)
725 (50)	587-653	653-798	798-864	725 I (50)   70°F I (21°C)	587 (40) @0°F (-18°C)	864 (60) @122°F (50°C)

## Limit Switch ZS 256-11Hz (Optional)

### Approvals



- 1) Listed system covered by UL-File EX15997 (SFFECO Prime FK, SFFECO Prime 227)
- 2) Part of the system approval:
  - Carbon Dioxide Extinguishing System CO<sub>2</sub> Low Pressure
  - SFFECO Prime FK, SFFECO Prime 227



### SAP designation

part no. 828482: Limit switch ZS 256-11Z-M20-2219

### Maintenance

Functional check during the maintenance intervals specific to the fire extinguishing system, but at least annually.

Designation	Part no.	Weight
Limit switch ZS 256-11z	828482	0.14 kg (0.2 lbs)

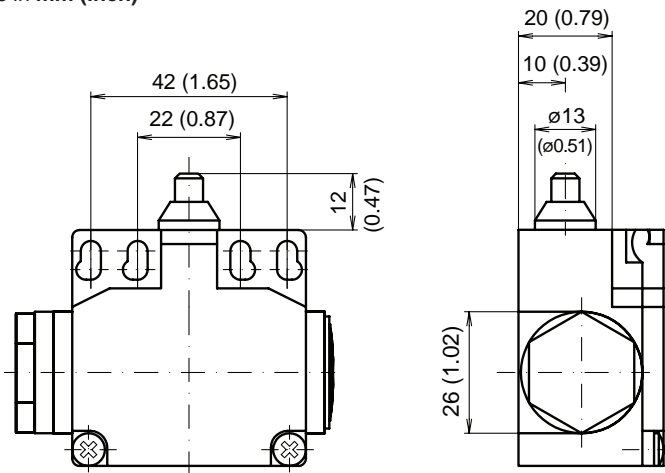
### Technical data

Type .....ZS 256-11z-2219-3  
 Housing .....thermopl. glass fiber concentrated, self-quenching  
 IP code .....IP67  
 Contact material .....silver  
 Contacts .....1 NC, 1 NO  
 .....galvanically isolated contact bridges  
 Ambient temperature .....-30 °C to +80 °C (-22 °F to 176 °F)  
 Switch system .....spring control, positive break NC contact

Nominal isolation voltage .....500 V  
 Permanent current .....10 A  
 Nominal operation current / voltage .....4 A (230 V AC);  
 .....2,5 A (400 V AC); 1 A (500 V AC)  
 Short-circuit protection .....10 A slow blow, 16 A quick blow  
 Actuation force .....min. 9 N  
 Mechn. durability .....20x10<sup>6</sup> switching cycles  
 Operation speed .....max. 1 m/s, min. 0,01 m/s  
 Time on in percent .....max. 5000 / h

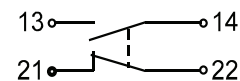
### Dimension drawing

Dimensions in mm (inch)



The cable entries sealed left with blind plug and right with protective cap.

### Circuit diagram:





## Limit Switch US 434y, 4 Contacts (Optional)

### Approvals

without approval



### SAP designation

part no. 224831: Limit switch US 434Y-M20-2352 4 contacts

### Maintenance

see mounting and wiring instructions of the manufacturer

Designation	Part no.	Weight
Limit switch US 434y, 4 contacts	224831	0.42 kg (0.93 lbs)

### Technical data

Type .....US 434y-M20-2352  
 Housing .....alloy die-cast metal, chrome dulled and varnished  
 IPcode .....IP65  
 Contact material .....silver  
 Switch system .....slow action  
 .....with twofold brake contacts  
 Ambient temperature .....-20 °C to +60 °C (-4 °F to 140 °F)  
 Nominal isolation voltage .....500 V  
 Permanent current .....16 A  
 Nominal operation current .....6 A, 400 V AC  
 Short-circuit protection .....16 A slow blow, 20 A quick blow

Actuation force .....max. 100 N  
 (efficiency of the switch way)  
 Operation speed .....max. 1 m/s, min. 0.001 m/s  
 Time on in percent.....max. 3000 / h  
 Mechn. durability .....10x10<sup>6</sup> switching cycles  
 Contact spud durability .....2x10<sup>6</sup> switching cycles  
 .....at 6 A / 400 V AC, cos φ = 0.4

### Application

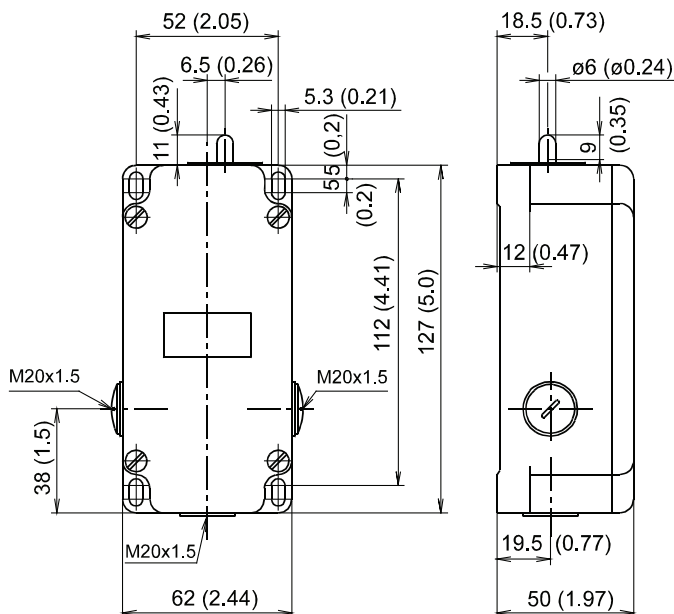
limit switch pneum. operated, manifold set, selector valve

### Included in delivery

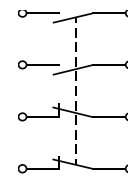
Limit switch US 434y with mounting and wiring instructions

### Dimension drawing

Dimensions in mm (inch)



### Wiring diagram



contacts shown not operated

changing of the contact type from  
NC to NO contact and vice versa is  
adjustable

Note: actuate limit switch axially

## Monitoring Release Device EM (Optional)

### Approvals



<sup>1)</sup> Listed system covered by UL-File EX15997 (SFFECO Prime FK, SFFECO Prime 227)

<sup>2)</sup> Part of the system approval (SFFECO Prime FK, SFFECO Prime 227)



### SAP designation

part no. 885740: EM-release supervision

### Maintenance

see technical description monitoring EM-release  
part no. 885742

Designation	Part no.	Weight
Monitoring release device EM	885740	0.09 kg (0.2 lbs)

### Application

The monitoring release device EM may be used only in accordance with system approval in stationary CO<sub>2</sub>, argon and nitrogen fire extinguishing systems.

### Function description

The monitoring EM-release device is used for electrical monitoring of the EM-release incl. cylinder valve lever in operation.

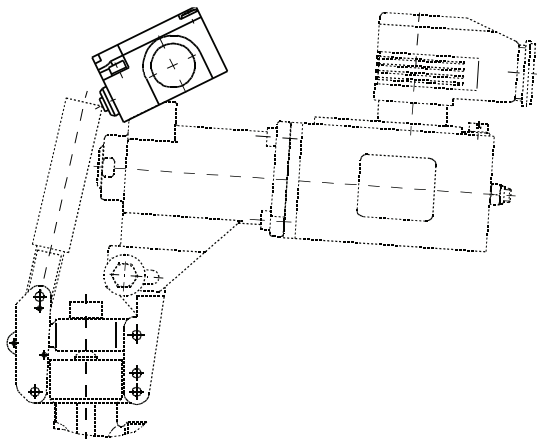
### Product sheets also applying

Limit switch ZS 256-11z .....see monitoring device

### Included in delivery

Limit switch ZS 256-11z .....828482, see monitoring device  
2x Cheese-head screw ISO4762-M4x25-8.8-A2E .....917743  
2x Washer DIN125-A 4.3-St-gal. Zn .....896019  
Technical description monitoring EM-release .....885742

### Installations example



## Monitoring Release Device EM UL/FM (Optional)

### Approvals



- 1) Listed system covered by UL-file EX15997 (SFFECO Prime FK, SFFECO Prime 227)
- 2) Part of the system approval (SFFECO Prime FK, SFFECO Prime 227)

### SAP designation

part no. 932440: monitoring release device EM UL

### Maintenance

Visual and functional check during the maintenance intervals specific to the fire extinguishing system, but at least annually.



Designation	Part no.	Weight
Monitoring release device EM UL/FM	932440	0.25 kg (0.55 lbs)

### Technical data

Limit switch type .....ZS 256-11z-2219-3  
 Housing .....thermopl. glass fiber concentrated, self-quenching  
 IP code .....IP67  
 Contacts .....1 NC, 1 NO  
 .....max. 30 V DC, max. 2.5 A  
 Ambient temperature .....-30 °C to +80 °C (-22 °F to 176 °F)  
 Switch system .....spring control, forced opener

### Application

The monitoring release device EM UL/FM may be used only in accordance with system approval in SFFECO Prime FK and SFFECO Prime 227 fire extinguishing systems..

### Function description

The monitoring release device EM UL/FM is used for electrical monitoring of the release device EM incl. cylinder valve lever in operation.

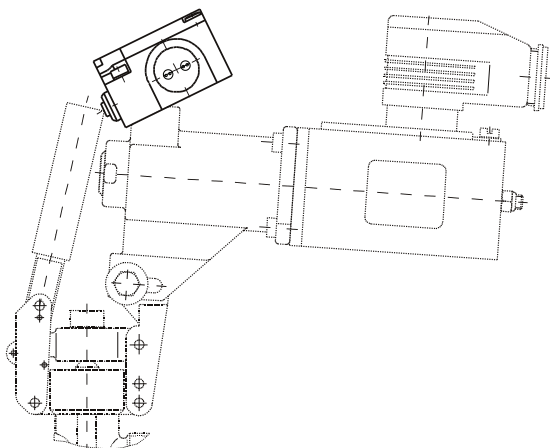
### Note

Installation and wiring instructions see:  
 Installation and Maintenance Manual fire extinguishing system  
 - SFFECO Prime FK (en) part no. 4006655  
 - SFFECO Prime 227 (en) part no. 4006650

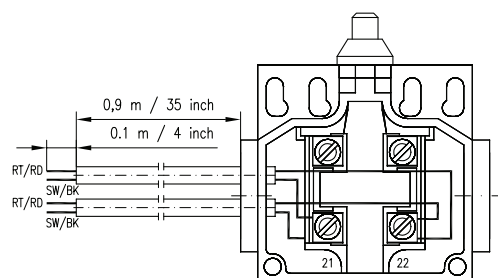
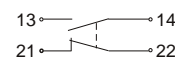
### Included in delivery

Limit switch ZS 256-11z with connection cable and information label  
 2x Cheese-head screw ISO4762-M4x25-8.8-A2E .....917743  
 2x Washer DIN125-A 4.3-St-gal. Zn .....896019

### Installations example



### Circuit diagram



Specification cable: CSA Spec. C22.2, No. 208,  
 File Listing: LL68731, UL Listed as Type CMR or FPLR 75C, FT-4  
 Style: Unshielded; Temperature: 105 °C  
 Type: Security cable; Voltage: 300 V  
 Wire material: Copper; Wire Size: 18 AWG

## Monitoring Loss PNEUM Activation Device PAE (Optional)

### Approvals

without approval

### SAP designation

part no. 888998: Monitoring loss pneumatic activation device

### Maintenance

see technical description monitoring loss pneumatic activation device part no. 926945



Designation	Part no.	Weight
Monitoring loss pneumatic activation device PAE	888998	0.20 kg (0.44 lbs)

### Application

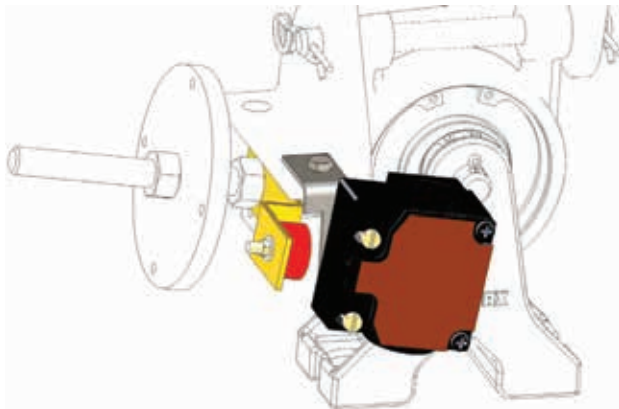
The monitoring loss pneumatic activation device may only be used in accordance with system approval in stationary CO<sub>2</sub>, IG-01 (argon), IG-100 (nitrogen), IG-55, IG-541, FK-5-1-12 and HFC-227ea extinguishing systems.

It facilitates monitoring of the permissible loss (5% - 10% supply per control cylinder). If the permissible margin of loss is exceeded the beam weight falls and actuates a reed contact limit switch. The limit switch sends a fault message to the monitoring control panel and the fault is indicated locally via LED.

### Included in delivery

Reed contact limit switch .....886343, see monitoring device  
Magnet bracket for ÜWA loss PAE .....876875  
Bracket limit switch monitoring loss PAE WE4 .....888986  
Technical description monitoring loss  
pneumatic activation device .....926945  
as well as screws, nuts and washers

### Mounting example



## Monitoring B0482 and B0481 (Optional)

### Approvals



- 1) Listed system covered by UL-file EX15997 (SFFECO Prime FK, SFFECO Prime 227)
- 2) Part of the system approval (SFFECO Prime FK, SFFECO Prime 227)



### SAP designation

e.g. part no. 932438: Monitoring B0482

### Maintenance

Visual and functional check during the maintenance intervals specific to the fire extinguishing system, but at least annually.

Designation	Part no.	Weight approx. kg (lbs)
Monitoring B0482	932438	0.38 (0.84)
Monitoring B0481	932437	

### Technical data

Limit switch type .....ZR 256-11z-U90-2219  
 Housing .....thermopl. glass fiber concentrated, self-quenching  
 IP code .....IP67  
 Contacts .....1 NC, 1 NO  
 .....max. 30 V DC, max. 2.5 A  
 Ambient temperature .....-30 °C to +80 °C (-22 °F to 176 °F)  
 Switch system .....spring control, forced opener

### Application

The monitoring B0482 / B0481 may be used only in accordance with system approval in SFFECO Prime FK and SFFECO Prime 227 fire extinguishing systems.  
 The monitoring B0482 / B0481 check the existing of an external electrical release device (without integrated blocking device).

### Note

Installation and wiring instructions see:  
 Installation and Maintenance Manual fire extinguishing system  
 - SFFECO Prime FK (en) part no. 4006655  
 - SFFECO Prime 227 (en) part no. 4006650

### Function description

For existing release device (1) the switch (2) of the monitoring (3) is actuated. When the release device is disassembled the switch is not actuated and transmitted a signal to the fire alarm and extinguishing control panel. There, the non-existence of external electrical release device is indicated as a fault.  
 The monitoring is mounted on the valve (4).

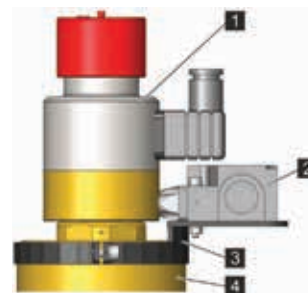


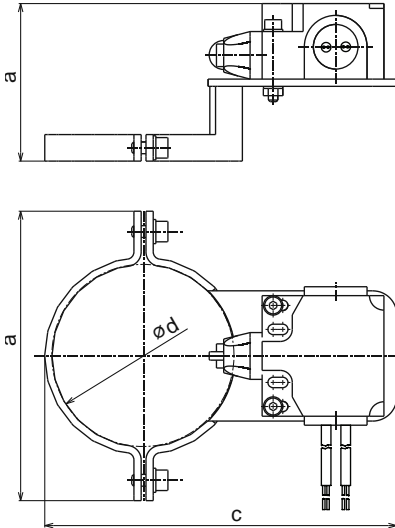
Figure 1: Monitoring, mounted

### Included in delivery

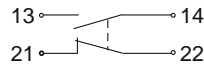
Limit switch ZR 256-11-U90-2219 with connection cable and information label  
 Bracket monitoring B0482 .....924163

## Monitoring B0482 and B0481 (Optional)

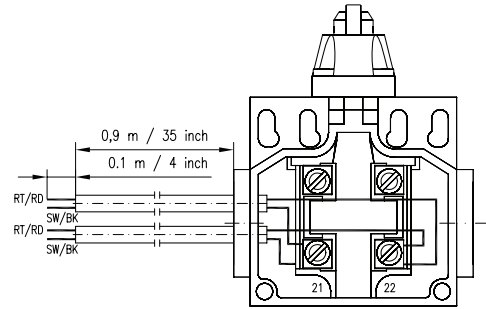
### Dimension drawing Dimensions in mm (inch)



### Circuit diagram



	Monitoring	
	B0482	B0481
a	65.3 (2.57)	55.3 (2.18)
b	120 (4.72)	138 (5.43)
c	146 (5.75)	154 (6.06)
ød	75,5 (2.97)	92,5 (3.64)



Specification cable: CSA Spec. C22.2, No. 208,  
File Listing: LL68731, UL Listed as Type CMR or FPLR 75C, FT-4

Style: Unshielded; Temperature: 105 °C  
Type: Security cable; Voltage: 300 V  
Wire material: Copper; Wire Size: 18 AWG

## Support Weighing Device PAE (Optional)

### Approvals

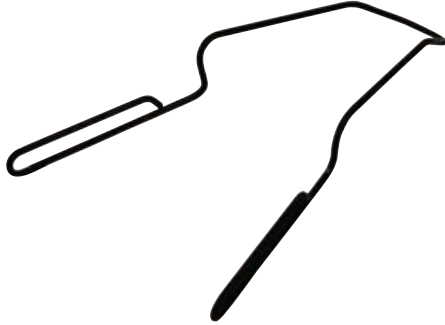
no approval required

### SAP designation

part no. 886350: Support weighing device PAE

### Maintenance

maintenance-free



Designation	Part no.	Weight
Support weighing device PAE	886350	0.02 kg (0.04 lbs)

### Technical data

Material .....spring wire, EN 10270-1-2,5 Z

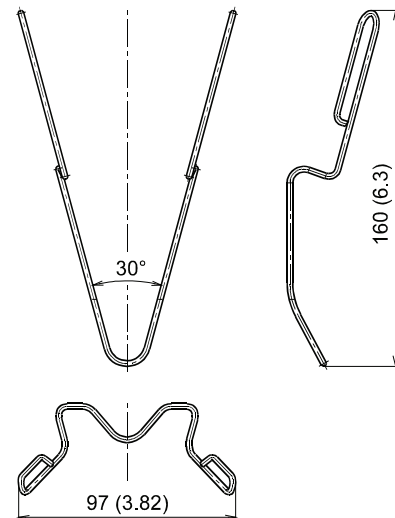
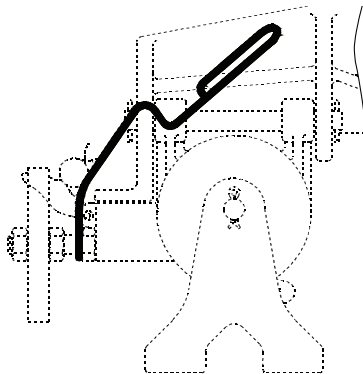
### Dimension drawing

Dimensions in mm (inch)

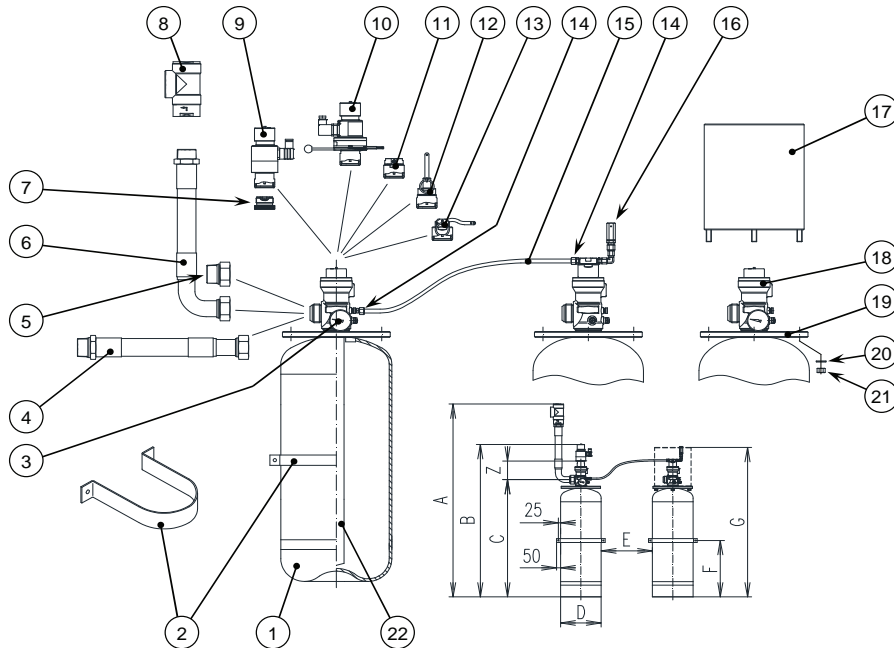
### Application

- Ease of assembling / disassembling of the pilot cylinder (PAE) resp. extinguishing agent cylinder (one-cylinder system)
- Prevention of loss indication during cylinder assembling / cylinder disassembling

### Mounting example



## Planning Help



- 1 Extinguishing agent cylinder
- 2 Clamp
- 3 Pressure gauge / contact pressure gauge
- 4 Hose DN40 / DN50
- 5 Connection piece
- 6 Hose DN40 / DN50 with 90° bend
- 7 Screw reset tool (part no. 887645)
- 8 Check valve
- 9 Release device, electrical
- 10 Release device, electrical with mechanical blocking device
- 11 Release device, pneumatic
- 12 Release device, pneumatic/manual
- 13 Release device, manual
- 14 Adapter M12x1.5 – G1/8
- 15 Hose DN4 or pilot pipe
- 16 Accessories connection pressure relief
- 17 Protection cap
- 18 Valve
- 19 Ring for protection cap
- 20 Washer DIN 125 – B13 St galZn/B (part no. 109886)
- 21 Hexagon nut DIN 934 – M12-8-galZn/B (part no. 811386)
- 22 Siphon tube

Positions without part number = seamless (drawn) product sheets (technical data sheets).

= seamless (drawn) = welded

V <sub>N</sub>	Type							A	B	C	D	E	F	G	Z	Amount filled						W <sub>E</sub>
	GL	EAC	UN	UN GND <sup>1)</sup>	DOT	TC	min. CE/VdS									min. UL/FM	max. VdS 25/42 bar (360/610 psi)	max. VdS 50 bar (725 psi)	max. UL/FM/CE 25/42 bar (360/610 psi)	max. UL/FM/CE 50 bar (725 psi)	kg (lb)	
22.0 (55)							1189 (46.81)	817 (32.17)	588 (23.15)	254 (10.00)	150 (5.91)	400 (15.75)	809 (31.85)	114 (4.49)	9 (19.84)	11 (24.30)	22.9 (50.50)	18.7 (41.30)	25.1 (55.40)	23.1 (51.00)	40 (87.5)	
22.0 (55)							1349 (53.11)	977 (38.47)	749 (29.49)	229 (9.00)	150 (5.91)	500 (19.69)	970 (35.19)	114 (4.49)	9 (19.84)	11 (24.30)	22.9 (50.50)	18.7 (41.30)	25.1 (55.40)	23.1 (51.00)	50 (110.2)	
40.0 (100)							1829 (72.01)	1457 (57.36)	1229 (48.39)	229 (9.00)	150 (5.91)	700 (27.56)	1450 (57.09)	114 (4.49)	16 (35.27)	20 (44.10)	41.6 (91.80)	34 (75.00)	45.6 (100.60)	42 (92.70)	59 (130.1)	
52.0 (130)							1813 (71.38)	1441 (56.73)	1213 (47.76)	254 (10.00)	150 (5.91)	700 (27.56)	1434 (56.46)	114 (4.49)	20.8 (45.90)	26 (57.40)	54.1 <sup>4)</sup> (119.30) <sup>4)</sup>	---	59.3 <sup>4)</sup> (130.80) <sup>4)</sup>	---	49 (108.0)	
52.0 (130)							1887 (74.29)	1515 (59.65)	1287 (50.67)	254 (10.00)	150 (5.91)	700 (27.56)	1508 (59.37)	114 (4.49)	20.8 (45.90)	26 (57.40)	54.1 <sup>4)</sup> (119.30) <sup>4)</sup>	---	59.3 <sup>4)</sup> (130.80) <sup>4)</sup>	---	69 (150.8)	
80.0 (200)							2427 (95.55)	2018 (79.45)	1757 (69.17)	267 (10.51)	150 (5.91)	1300 (51.18)	1960 (77.17)	147 (5.79)	32 (70.60)	40 (88.20)	83.2 (183.50)	68 (149.91)	91.2 (201.20)	84 (185.19)	104 (229.3)	
80.0 (200)							1487 (58.54)	1148 (45.20)	887 (34.92)	406 (16.00)	150 (5.91)	600 (23.62)	1090 (42.91)	147 (5.79)	32 (70.60)	40 (88.20)	83.2 (183.50)	68 (149.91)	91.2 (201.20)	84 (185.19)	99 (218.3)	
100.0 (250)							2267 (89.25)	1858 (73.14)	1597 (62.87)	316 (12.44)	150 (5.91)	1300 (51.18)	1800 (70.87)	147 (5.79)	40 (88.30)	50 (110.30)	104 (229.40)	85 (187.39)	114 (251.50)	105 (231.49)	127 (280.0)	
106.0 <sup>2)</sup> (270)							1708 (67.24)	1299 (51.14)	1038 (40.87)	406.6 (16.00)	200 (7.87)	700 (27.56)	1241 (48.86)	147 (5.79)	42.4 (93.60)	53 (116.90)	110.2 <sup>4)</sup> (243.20) <sup>4)</sup>	---	120.8 <sup>4)</sup> (266.60) <sup>4)</sup>	---	86 (190.0)	
106.0 (270)							1747 (68.78)	1338 (52.68)	1077 (42.40)	406.6 (16.00)	200 (7.87)	700 (27.56)	1280 (50.39)	147 (5.79)	42.4 (93.60)	53 (116.90)	110.2 <sup>4)</sup> (243.20) <sup>4)</sup>	---	120.8 <sup>4)</sup> (266.60) <sup>4)</sup>	---	97 (212.3)	
140.0 (350)							2037 (80.20)	1628 (64.09)	1367 (53.82)	406 (16.00)	150 (5.91)	1050 (41.34)	1570 (61.81)	147 (5.79)	56 (123.60)	70 (154.40)	145.6 (321.20)	119 (262.35)	159.6 (352.00)	147 (324.08)	131 (288.8)	
147.0 <sup>2)</sup> (370)							2042 (80.39)	1633 (64.29)	1372 (54.02)	406.6 (16.00)	200 (7.87)	1050 (41.34)	1575 (62.01)	147 (5.79)	58.8 (129.70)	73.5 (162.10)	152.9 <sup>4)</sup> (337.20) <sup>4)</sup>	---	167.6 <sup>4)</sup> (369.60) <sup>4)</sup>	---	104 (229.3)	
147.0 (370)							2077 (81.77)	1668 (65.67)	1407 (55.39)	406.6 (16.00)	200 (7.87)	850 (33.47)	1610 (63.39)	147 (5.79)	58.8 (129.70)	73.5 (162.10)	152.9 <sup>4)</sup> (337.20) <sup>4)</sup>	---	167.6 <sup>4)</sup> (369.60) <sup>4)</sup>	---	115 (252.0)	
180.0 (450)						3)	2377 (93.58)	1968 (77.48)	1707 (67.21)	406 (16.00)	200 (7.87)	1300 (51.18)	1910 (75.20)	147 (5.79)	72 (158.80)	90 (198.50)	187.2 (412.90)	153 (337.31)	205.2 (452.60)	189 (416.67)	179 (394.6)	
180.0 <sup>2)</sup> (450)							2231 (87.83)	1822 (71.73)	1651 (65.00)	406.6 (16.00)	200 (7.87)	1300 (51.18)	1854 (72.99)	147 (5.79)	72 (158.80)	90 (198.50)	187.2 <sup>4)</sup> (412.90) <sup>4)</sup>	---	205.2 <sup>4)</sup> (452.60) <sup>4)</sup>	---	142 (313.1)	

<sup>1)</sup> also for use and transport in Canada and the USA.

<sup>3)</sup> only in special version (for details contact the manufacturer).

V<sub>N</sub> ... Nominal volume

All dimensions are approximately, variations due to manufacturing tolerances are possible.

<sup>2)</sup> also available with liquid level indicator (LLI).

<sup>4)</sup> only 25 bar (360 psi).

W<sub>E</sub> ... Empty weight

## Warning Signs

The purpose of the Caution sign is to alert personnel that the room is protected by a SFFECO Prime 227 Clean Agent System and that all doors should be kept closed in the event of fire. The caution sign should normally be located on the entrance door(s) leading into any room where the SFFECO Prime 227 clean agent protection is being provided.



## Warning Signs

The purpose of the Caution sign is to alert personnel that the SFFECO Prime 227 Clean Agent System has discharged and caution must be taken to avoid exposure to products of combustion. The caution sign should normally be located on the entrance door(s) leading into any room where the SFFECO Prime 227 clean agent protection is being provided.



**CAUTION!**

This area is protected by  
SFFECO Prime 227  
(HFC-227ea)  
fire extinguishing system.

In the event of a fire and  
system discharge. Caution  
must be taken to avoid  
exposure to products of  
combustion. Do **NOT** enter  
without an approved  
self-contained breathing  
apparatus or until area is  
thoroughly ventilated.

**SFFECO**

*Served by Authorized Distributor*

## Warning Signs

The purpose of this System Abort Sign is to identify the presence of the SFFECO Prime 227 System Abort Station. The System Abort Station is designed to provide a manual means by which the SFFECO Prime 227 system actuation circuit may be interrupted. The system Abort Sign should be located next to each SFFECO Prime 227 Abort Station for quick positive identification.



## Warning Signs

The manual discharge station sign will identify each manual release associated with the SFFECO Prime 227 Clean Agent System. This reduces the risk of a manual discharge station being mistaken for a fire alarm system station. The sign should be located at each system manual release station for quick, positive identification.





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.

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