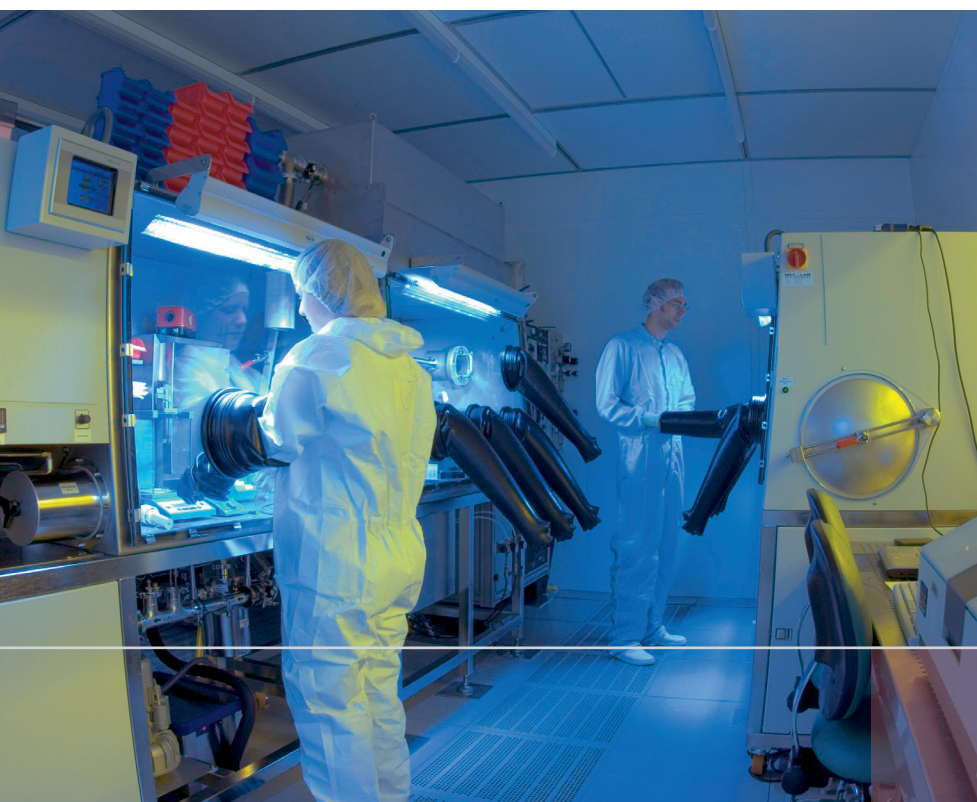


# VSN 200 | Fire Extinguishing Systems

Product catalogue 2015







**Version: 2015-01**

# **Product catalogue**

## **Gas-Based Suppression Systems**

### **VSN 200 Fire Extinguishing Systems**

**Fight fires using the chemical extinguishant HFC-227ea**

This product catalogue is intended for sales purposes only. For planning, installation, commissioning and operation, please refer to the corresponding operating instructions, which are enclosed with the products.



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## Product group

### Extinguishing technology

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## Product group

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## Extinguishing technology Halocarbon agents **P21.231.010 - 2**

### VSN 200 Fire Extinguishing System

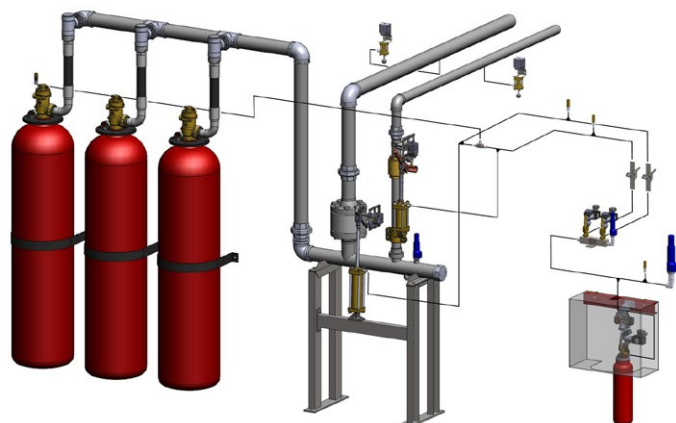


Figure: Multi-zone system

### Approvals



<sup>1)</sup> VSN 200 multi-zone system is not FM, UL, ULC approved

Contact us for information about additional approvals and listings

### System description

The VSN 200 fire extinguishing system with fire extinguishant HFC-227ea offers optimal fire protection and is particularly suitable for electrical and electronic risks. The system consists of one or more extinguishant cylinders, which are connected via a pipework with extinguishing nozzles.

The design of the system is adapted to the fire risk and the spatial conditions. Directly after a developing fire was recognised automatically by the fire detection system, the fire extinguishing system is triggered. After a short pre warning time the release of the extinguishant cylinders is carried out and the calculated fire extinguishant concentration is reached in the protected room after 10 seconds.

The residue-free operating extinguishant HFC-227ea has a high extinguishing effectiveness and environmental compatibility (Global Warming Potential GWP = 3500, Ozone Depletion potential ODP = 0). Further advantages are its high personal safety and the small storage volume.

### Pressurisation with nitrogen

The extinguishant HFC-227ea does not have a sufficient vapour pressure, in order to assure a complete and effective flooding of a protected room. In order to reach the desired system pressure, the extinguishant is therefore pressurised with nitrogen on the intended system pressure of 25, 42 or 50 bar.

### The extinguishant HFC-227ea

The extinguishant HFC-227ea that is used in VSN 200 fire extinguishing systems is used for total flooding of clearly zoned areas and is suitable for fires of the classes A and B. The extinguishant has a gas pressure of 3.91 bar at 20 °C, that positively affects a fast evaporation at the nozzle and the fast distribution in the room. HFC-227ea is neither corrosive nor electrical conductive and causes no damage or residues at sensitive electronic components. It is colourless and almost odourless and a gas at ambient temperature. The molecules consist of carbon, fluorine and hydrogen. While the extinguishing effect of inert gases is based on the displacement of oxygen, HFC-227ea absorbs the heat of the flame and interrupts thereby the combustion reaction.

So the extinguishing effect is caused for the most part physically and for a small part chemically.



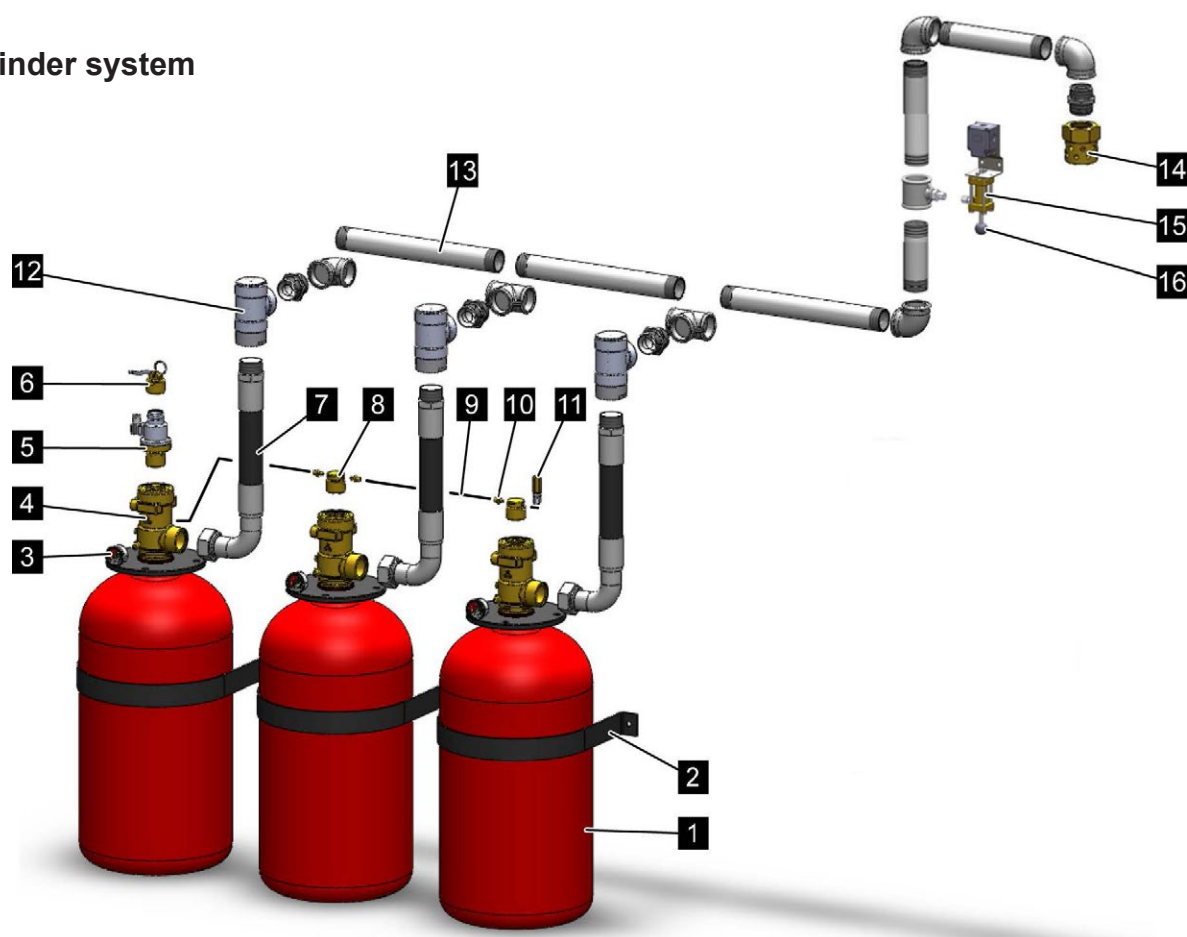


## Extinguishing technology Halocarbon agents **P21.231.010 - 2**

### VSN 200 Fire Extinguishing System

#### Functional diagram single-zone system

#### Multi-cylinder system



Item	Designation	Product group	Item	Designation	Product group
1	Extinguishing agent cylinder	P21.231.112	9	Hose DN4 (5/32") or Pilot pipe DN4 (5/32")	P21.231.210 P21.280.310
2	Clamp for extinguishing agent cylinder	P21.231.240	10	Adapter M12x1,5	P21.231.210
3	Contact pressure gauge	P21.231.430	11	Safety device malfunction pressure SFD DN4 (Safeguard against slow gas leaks)	P21.211.420
4	Valve	P21.231.131	12	Check valve type MX-CR	P21.231.220
5	Release device electrical (also available with a mechanic blocking device)	P21.231.210	13	Pipework	P21.280.210
6	Release device manual or pneumatic/manual	P21.231.210	14	Discharge nozzle, nozzle type CD	P21.231.360
7	Hose DN40 and DN50 (1.1/2" and 2")	P21.231.210	15	Pneumatically actuated limit switch	-
8	Release device pneumatic	P21.231.210	16	Manual release of the limit switch	-



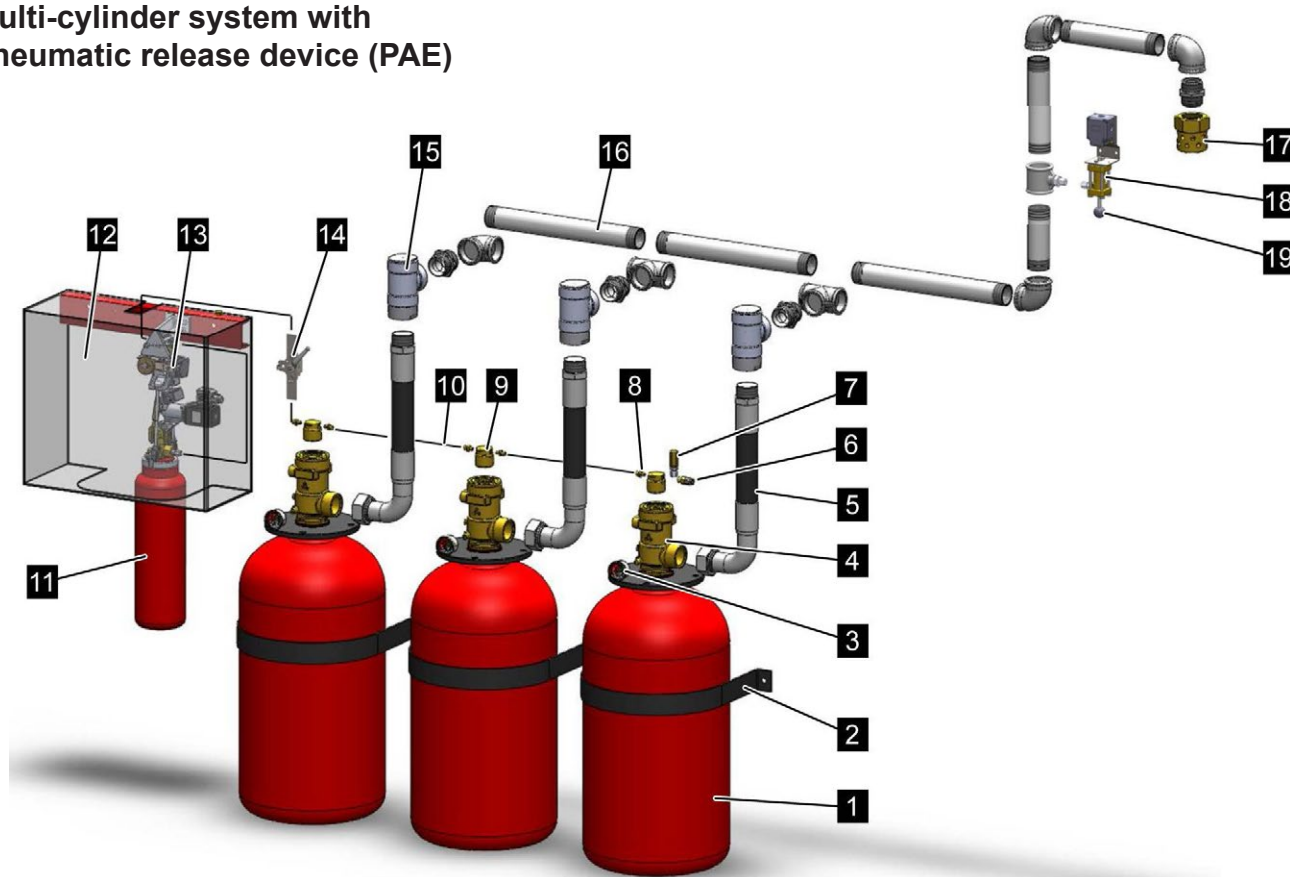


## Extinguishing technology Halocarbon agents **P21.231.010 - 2**

### VSN 200 Fire Extinguishing System

#### Functional diagram single-zone system

#### Multi-cylinder system with pneumatic release device (PAE)



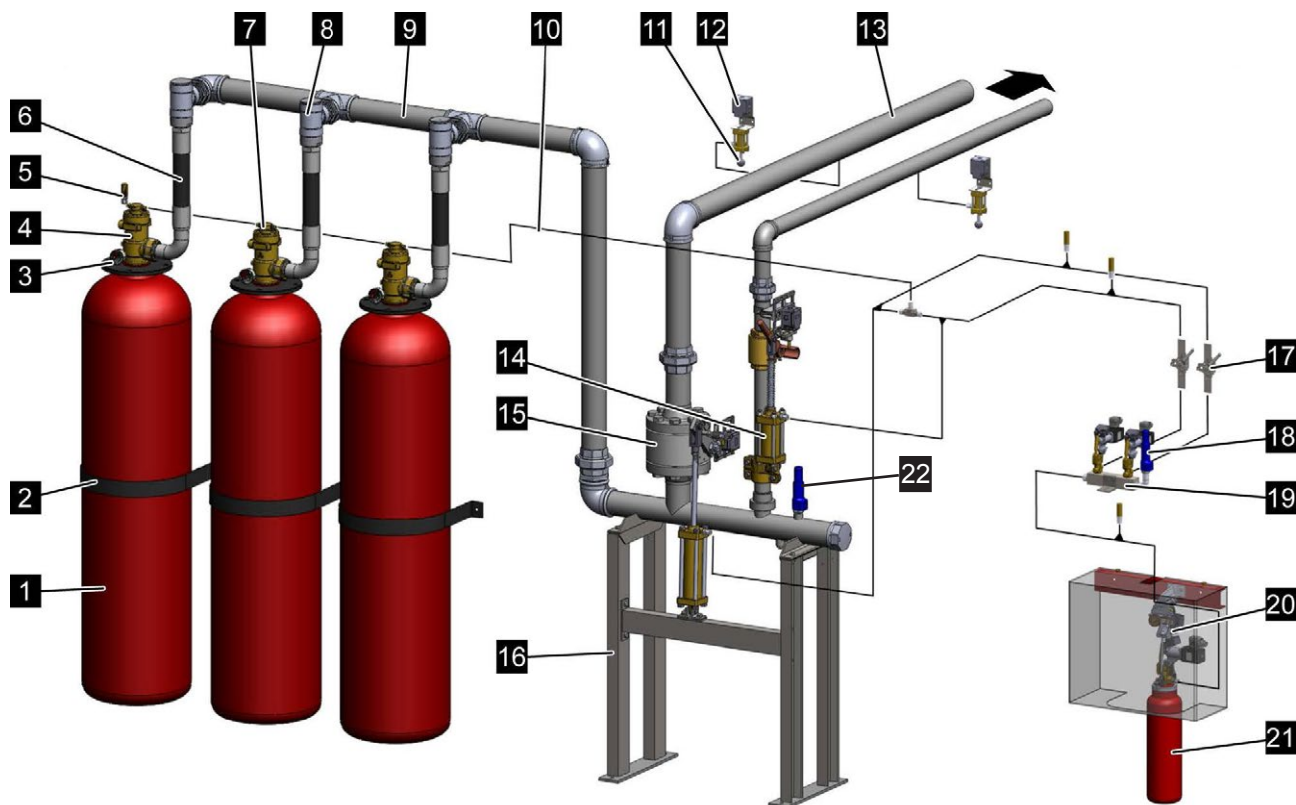
Item	Designation	Product group	Item	Designation	Product group
1	Extinguishing agent cylinder	P21.231.112	11	Extinguishing agent cylinder (Pilot cylinder)	P21.231.112
2	Clamp for extinguishing agent cylinder	P21.231.240	12	Protective cover	P21.214.420
3	Contact pressure gauge	P21.231.430	13	Pneumatic release device (PAE), complete including weighing device	P21.214.420
4	Valve	P21.231.131	14	Blocking device	P21.211.420
5	Hose DN40 and DN50 (1.1/2" and 2")	P21.231.210	15	Check valve type MX-CR	P21.231.220
6	Push-button selector valve (Manual pressure relief valve)	P21.211.334	16	Pipework	P21.280.210
7	Safety device malfunction pressure SFD DN4 (Safeguard against slow gas leaks)	P21.211.420	17	Discharge nozzle, nozzle type CD	P21.231.360
8	Adapter M12x1,5	P21.231.210	18	Pneumatically actuated limit switch	-
9	Release device pneumatic	P21.231.210	19	Manual release of the limit switch	-
10	Hose DN4 (5/32") or Pilot pipe DN4 (5/32")	P21.231.210 P21.280.310			



## Extinguishing technology Halocarbon agents **P21.231.010 - 2**

### VSN 200 Fire Extinguishing System

#### Functional diagram multi-zone system \* not UL / not FM



Item	Designation	Product group	Item	Designation	Product group
1	Extinguishing agent cylinder	P21.231.112	12	Pneumatically actuated limit switch	-
2	Clamp for extinguishing agent cylinder	P21.231.240	13	Downstream piping	P21.280.210
3	Contact pressure gauge	P21.231.430	14	Selector valve DN25, DN40, DN50 (1", 1.1/2", 2")	P21.214.020
4	Valve	P21.231.131	15	Selector valve DN65 - 100 (2.1/2" - 4") pneumatic	P21.211.331
5	Safety device malfunction pressure SFD DN4 (Safeguard against slow gas leaks)	P21.211.420	16	Bracket	-
6	Hose DN40 and DN50 (1.1/2" and 2")	P21.231.210	17	Blocking device	P21.211.420
7	Release device pneumatic	P21.231.210	18	Safety valve G1/2 - 140 bar (2030 psi)	P21.214.341
8	Check valve type VSN-CR	P21.231.220	19	DN15 (1/2") pilot distributor (as shown) or with solenoid valve 2/2-ways complete	P21.214.420 P21.211.420
9	Manifold	P21.280.210	20	Pneumatic release device (PAE), complete including weighing device	P21.214.420
10	Hose DN4 (5/32") or Pilot pipe DN4 (5/32")	P21.231.210 P21.280.310	21	Extinguishing agent cylinder (Pilot cylinder)	P21.231.112
11	Manual release of the limit switch	-	22	Safety valve G1/2 - 66 bar (957 psi)	P21.231.341

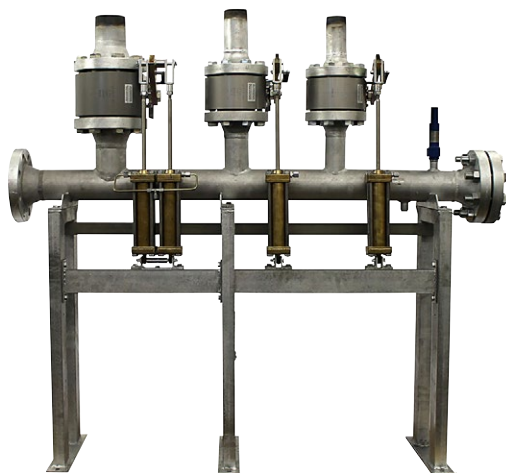
**Multi-zone systems safeguard several extinguishing zones. If the extinguishing zones are of different sizes, multi-zone systems will be equipped with several extinguishing agent cylinders. The extinguishing agent supply and, thus, the number of extinguishing agent cylinders always follow the largest extinguishing zone. When activated, the system will only flood one extinguishing zone.**



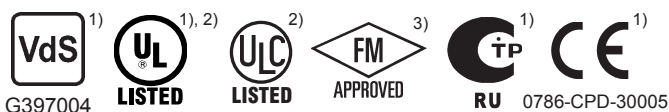
## Extinguishing technology CO<sub>2</sub> HP CO<sub>2</sub> Manifold WAX-AVDU

## P21.214.020 - 1

**Manifold selector valve DN65/80/100 complete  
pneumatic, CO<sub>2</sub> / inert gas (CF) / VSN 1230/200**



### Approvals / CE marking



1) Approvals and CE for selector valve only

2) Listed system covered by UL-File EX6388 (CO<sub>2</sub>) and covered by UL-File EX26532 (Ar, VSN 200 and VSN 1230)

3) Part of the system approval (VSN 200 and VSN 1230)

### Maintenance

see operating instruction selector valve BV, part no. 886269

### Ordering hints

Manifolds selector 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)
Working pressure / test pressure:	IG-55, IG-541, FK-5-1-12, HFC-227ea
- 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)
- VSN 1230/200 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 valve 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	P21.214.334
Release cylinder section valve	P21.211.334
Safety valve, depending from operating medium:	
- Valve G1/2 - 140 bar (CO <sub>2</sub> )	P21.214.341
- Valve G1/2 - 66 bar (inert gas / VSN 1230/200 )	P21.231.341
Limit switch type US 432y and US 434y	P21.211.430
Manifold rack - left	817728
Manifold rack - right	822583

### Included in delivery

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

### Not included in delivery

Manual release lever, 600 mm (23.62") long	823976
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# Extinguishing technology CO<sub>2</sub> HP

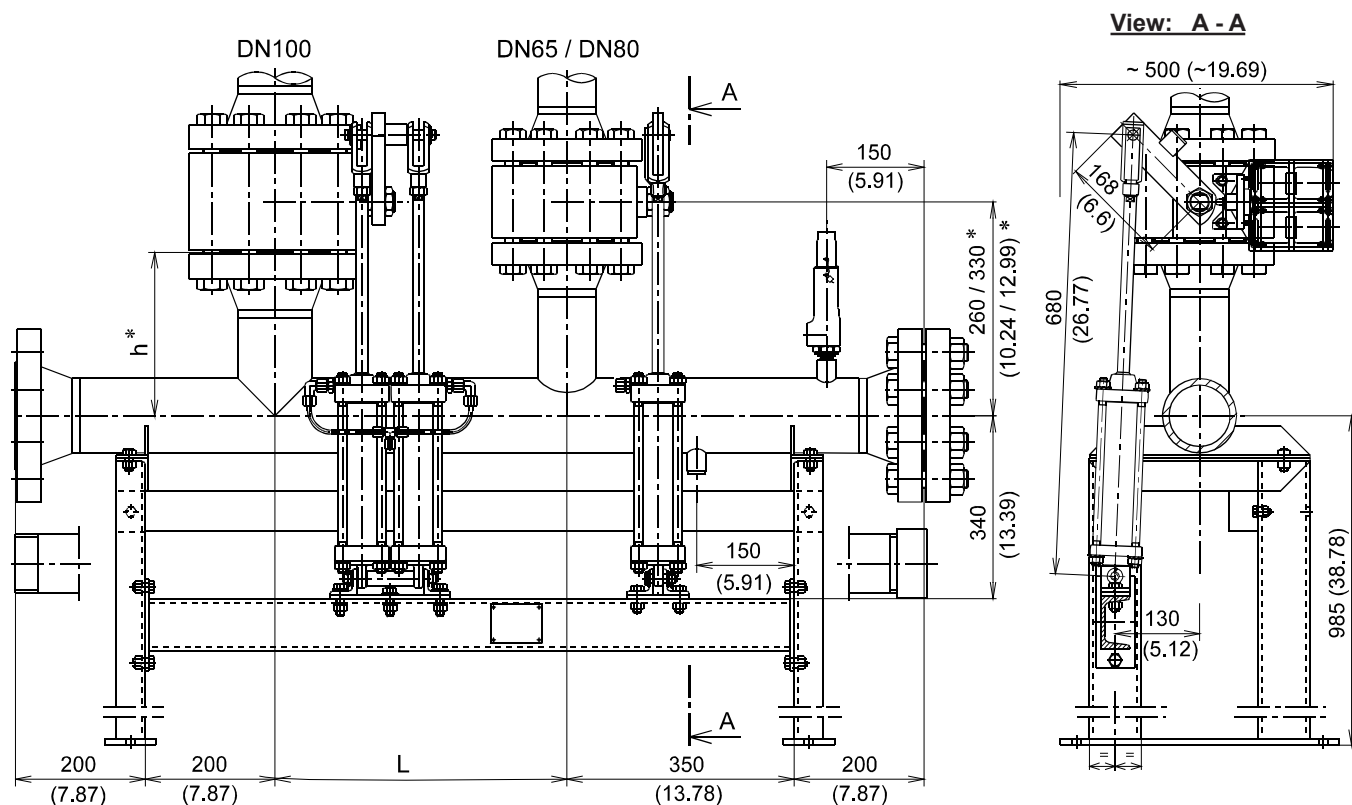
## CO<sub>2</sub> Manifold WAX-AVDU

**P21.214.020 - 1**

**Manifold selector valve DN65/80/100 complete**  
pneumatic, CO<sub>2</sub> / inert gas (CF) / VSN 1230/200

### 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.



## Extinguishing technology Halocarbon agents Cylinder Halocarbon agents assembled

# P21.231.112 - 3

**Extinguishing agent cyl. UL/FM/GL,  
VSN 200 EU/DOT/GOST-R (drawn)  
22 l, 40 l, 80 l, 100 l, 140 l, 180 l**



### Approvals



- 1) Part of the system approval VSN 200
- 2) Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230). Extinguishing agent cylinders must only be filled by refilling companies which are listed in UL-file EX26532.
- 3) Valve type B and B25 without UL / ULC approval
- 4) Part of the system approval

### SAP designation

e.g. part no. 888454: Extinguishing agent cyl. UL/FM/GL 22.0  
25bar-VSN 200 EU/DOT/GOST-R

### Maintenance

see product information valve B0481 DN49 / B0482 DN33  
part no. 887866

Pressure at 21 °C (70 °F)	Steel cylinder <sup>7)</sup>	Nominal volume	Part no.		Amount filled <sup>5)</sup>				Empty weight approx.
			Valve type <sup>6)</sup>		min.		max.		
			A / A25	B / B25 (not UL / ULC)	VdS / CE kg (lbs)	UL / ULC FM / GL kg (lbs)	VdS kg (lbs)	CE / GL / UL ULC / FM kg (lbs)	
bar (psi)		l (lbs)							kg (lbs)
25 (360)	TPED, GL, GOST-R	22.0 (55)	888454	888455	8.8 (19.5)	11 (24.3)	22.8 (50.4)	25.0 (55.2)	50 (110)
		40.0 (100)	888457	888458	16 (35.3)	20 (44.1)	41.6 (91.7)	45.6 (100.5)	59 (130)
		80.0 (200) <sup>8)</sup>	888467	888469	32 (70.6)	40 (88.2)	83.2 (183.4)	91.2 (201.0)	104 (229)
		100.0 (250)	888471	888472	40 (88.2)	50 (110.3)	104 (229.2)	114 (251.3)	127 (280)
	TPED, GL, GOST-R, DOT	80.0 (200) <sup>9)</sup>	888557	888558	32 (70.6)	40 (88.2)	83.2 (183.4)	91.2 (201.0)	99 (218)
		140.0 (350)	888561	888562	56 (123.5)	70 (154.4)	145.6 (320.9)	159.6 (351.8)	131 (289)
		180.0 (450)	888563	888564	72 (158.8)	90 (198.5)	187.2 (412.7)	205.2 (452.3)	179 (395)
42 (610)	TPED, GL, GOST-R	22.0 (55)	888459	888460	8.8 (19.5)	11 (24.3)	22.8 (50.4)	25.0 (55.2)	50 (110)
		40.0 (100)	888461	888462	16 (35.3)	20 (44.1)	41.6 (91.7)	45.6 (100.5)	59 (130)
		80.0 (200) <sup>8)</sup>	888475	888476	32 (70.6)	40 (88.2)	83.2 (183.4)	91.2 (201.0)	104 (229)
		100.0 (250)	888477	888478	40 (88.2)	50 (110.3)	104 (229.2)	114 (251.3)	127 (280)
	TPED, GL, GOST-R, DOT	80.0 (200) <sup>9)</sup>	888565	888566	32 (70.6)	40 (88.2)	83.2 (183.4)	91.2 (201.0)	99 (218)
		140.0 (350)	888567	888568	56 (123.5)	70 (154.4)	145.6 (320.9)	159.6 (351.8)	131 (289)
		180.0 (450)	888569	888570	72 (158.8)	90 (198.5)	187.2 (412.7)	205.2 (452.3)	179 (395)
50 (725)	TPED, GL, GOST-R	22.0 (55)	888463	888464	8.8 (19.5)	11 (24.3)	18.7 (41.2)	23.1 (50.9)	50 (110)
		40.0 (100)	888465	888466	16 (35.3)	20 (44.1)	34 (74.9)	42 (92.5)	59 (130)
		80.0 (200) <sup>8)</sup>	888482	888483	32 (70.6)	40 (88.2)	68 (149.9)	84 (185.1)	104 (229)
		100.0 (250)	888484	888485	40 (88.2)	50 (110.3)	85 (187.3)	105 (231.4)	127 (280)
	TPED, GL, GOST-R, DOT	80.0 (200) <sup>9)</sup>	888571	888573	32 (70.6)	40 (88.2)	68 (149.9)	84 (185.1)	99 (218)
		140.0 (350)	888574	888575	56 (123.5)	70 (154.4)	119 (262.3)	147 (324)	131 (289)
		180.0 (450)	888576	888577	72 (158.8)	90 (198.5)	153 (337.3)	189 (416.6)	179 (395)

### <sup>5)</sup> Order informations

The order has to be specified with the filling quantity.

The extinguishing agent HFC-227ea part no. 887745 must be ordered additionally.

### <sup>6)</sup> - <sup>9)</sup> Footnotes see on page 2





## Extinguishing technology Halocarbon agents Cylinder Halocarbon agents assembled

## P21.231.112 - 3

### Extinguishing agent cyl. UL/FM/GL, VSN 200 EU/DOT/GOST-R (drawn) 22 l, 40 l, 80 l, 100 l, 140 l, 180 l

#### 6) 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)

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

- TEPED, a notified body in acc. with directive TPED 2010/35/EC
- GL (Germanischer Lloyd) in acc. with directive MED 96/98/EC
- DOT (US Department of Transportation)

GOST-R certificate of conformity acc. to ROSTECHNADZOR

#### 8) 80.0 l - Exting. agent cylinder with $\varnothing D = 267$ mm (10.51")

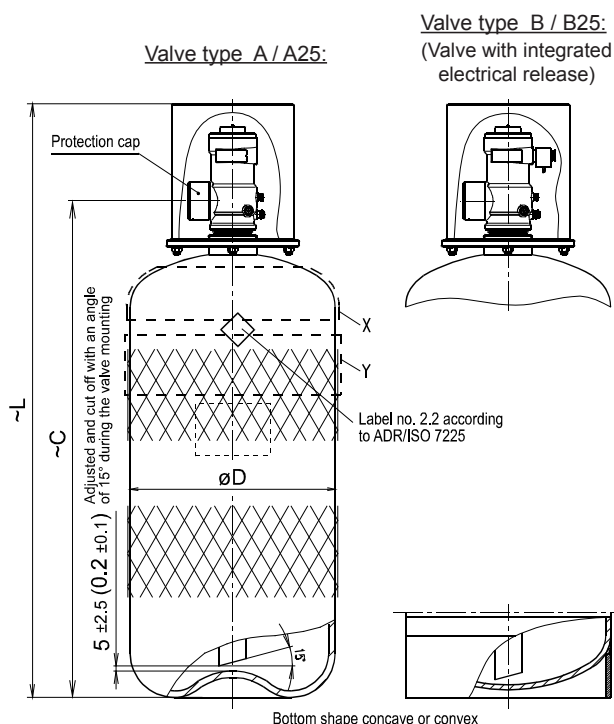
#### 9) 80.0 l - Exting. agent cylinder with $\varnothing D = 406$ mm (15.98")

### Marking

- Marking no. according to GGVs/ADR: UN 3296, UN 1066 in the area X
- Part no. marked in the area Y

### Dimension drawing

Dimensions in mm (inch)



### Technical data

Extinguishing agent .....HFC-227ea

Min. fill ratio:

- VdS / CE .....0.4 kg/l (25.0 lbs/ft<sup>3</sup>)

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

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

- VdS .....1.04 kg/l (64.9 lbs/ft<sup>3</sup>)

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

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

- VdS .....0.85 kg/l (53.0 lbs/ft<sup>3</sup>)

- CE / GL / 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 .....P21.231.131

### Technical data steel cylinder VSN 1230/200 (blank):

Steel cylinder (seamless) ...acc. to directive TPED 2010/35/EC,

.....directive MED 96/98/EC and DOT regulations

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

Finish .....RAL3000 - flame red

.....other colour upon customer request

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

Marking steel cylinder VSN 1230/200 (blank):

Marking .....acc. to directives 2008/68/EC, ISO 13769,

.....2010/35/EC and DOT regulations

Additional marking:

- Owner marking, Minimax Feuerschutz .....MF

- Owner no. (acc. to order) .....xxxxxxx

- Tare weight .....xxxxxxx

- DOT specification .....DOT-3AA-910

### Not included in delivery

Type label .....P21.231.140 - 2

Adapter M12x1.5 - G1/8 VSN 1230/200 .....887644, P21.231.210

Contact pressure gauge VSN 1230/200 .....P21.231.43

Clamp for extinguishing agent cyl. VSN 1230/200 .....P21.231.240

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

Pneumatic, pneumatic/manual, manual,

tackle pneumatic/manual - marine .....P21.231.210

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

Electrical, electrical with mech. blocking device .....P21.231.210

Nominal volume	~L	~C	øD ±3 (±0.12)	Nominal diameter valve
22.0 l (55 lbs)	970 (38.19)	749 (29.49)	229 (9.00)	DN33
40.0 l (100 lbs)	1450 (57.09)	1229 (48.39)	229 (9.00)	
80.0 l (200 lbs)	1960 (77.17)	1757 (69.17)	267 (10.51)	
80.0 l (200 lbs)	1090 (42.91)	887 (34.92)	406 (15.98)	DN49
100.0 l (250 lbs)	1800 (70.87)	1597 (62.87)	316 (12.44)	
140.0 l (350 lbs)	1570 (61.81)	1367 (53.82)	406 (15.98)	
180.0 l (450 lbs)	1910 (75.20)	1792 (70.55)	406 (15.98)	



# Extinguishing technology Halocarbon agents **P21.231.112 - 4**

## Cylinder Halocarbon agents assembled

**Extinguishing agent cylinder UL/FM,  
VSN 200 type 25, (welded)  
22 l, 52 l, 106 l, 147 l, 180 l**



### Approvals



- 1) Part of the system approval VSN 200.  
Exception: Cylinder with liquid level indicator.
- 2) Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230).  
Extinguishing agent cylinders must only be filled by refilling companies which are listed in UL-file EX26532.
- 3) Valve type B25 without UL / ULC approval
- 4) Part of the system approval

### SAP designation

e.g. part no. 914146: Ext.agent cyl. UL/FM 22l-A-25bar-VSN200  
DOT/TC

### Maintenance

see product information valve B0481 DN49 / B0482 DN33  
part no. 887866

Pressure at 21 °C (70 °F)	Nominal volume	Part no. Valve type <sup>6)</sup>		Steel cylinder <sup>7)</sup>	Amount filled <sup>5)</sup>				Empty weight
		A25	B25 (not UL / ULC)		min.		max.		approx.
					VdS / CE kg (lbs)	UL / ULC FM kg (lbs)	VdS kg (lbs)	CE / UL ULC / FM kg (lbs)	
bar (psi)	l (lbs)								kg (lbs)
UL / FM - extinguishing agent cylinder									
25 (360)	22.0 (60)	914146	914721	DOT / TC <sup>8)</sup>	8.8 (19.4)	11 (24.3)	22.8 (50.4)	25.0 (55.2)	40 (88)
	52.0 (130)	889098	889099		20.8 (45.9)	26 (57.4)	54.0 (119.2)	59.2 (130.6)	49 (108)
	106.0 (270)	889100	889101		42.4 (93.5)	53 (116.9)	110.2 (243.0)	120.8 (266.4)	86 (190)
	147.0 (370)	889103	889104		58.8 (129.7)	73.5 (162.1)	152.8 (337.0)	167.5 (369.4)	104 (229)
	180.0 (450)	910508	910509		72.0 (158.8)	90 (198.5)	187.2 (412.7)	205.2 (452.3)	142 (313)
UL / FM - extinguishing agent cylinder with liquid level indicator (no part of the VdS system approval)									
25 (360)	106.0 (280)	914148	-	DOT / TC <sup>8)</sup>	42.4 (93.5)	53 (116.9)	110.2 (243.0)	120.8 (266.4)	95 (210)
	147.0 (390)	914149	-		58.8 (129.7)	73.5 (162.1)	152.8 (337.0)	167.5 (369.4)	114 (251)
	180.0 (500)	914150	-		72.0 (158.8)	90 (198.5)	187.2 (412.7)	205.2 (452.3)	130 (286)

### <sup>5)</sup> Order informations

The order has to be specified with the filling quantity.  
The extinguishing agent HFC-227ea part no. 887745 must be ordered additionally.

- <sup>6)</sup> A25 = Valve B0482-A25 DN33 (for 22.0 l / 52.0 l)  
Valve B0481-A25 DN49 (for 106.0 l / 147.0 l / 180.0 l)  
B25 = Valve B0482-B25 DN33 (for 22.0 l / 52.0 l)  
Valve B0481-B25 DN49 (for 106.0 l / 147.0 l / 180.0 l)  
(Valves with integrated electrical release)

- <sup>7)</sup> Approval with collective certificate by:  
- DOT (US Department of Transportation)  
- TC (Transport Canada)

- <sup>8)</sup> **Caution**  
It is not allowed to transport filled steel cylinder (DOT / TC)  
in Europe





# Extinguishing technology Halocarbon agents **P21.231.112 - 4**

## Cylinder Halocarbon agents assembled

### Extinguishing agent cylinder UL/FM, VSN 200 type 25, (welded) 22 l, 52 l, 106 l, 147 l, 180 l

#### Technical data

Extinguishing agent .....HFC-227ea

Fill ratio:

- Min. VdS / 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. VdS .....1.04 kg/l (64.9 lbs/ft<sup>3</sup>)
- CE / UL / ULC / FM .....1.14 kg/l (71.1 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 .....P21.231.131

#### Technical data steel cylinder VSN 1230/200 (blank):

steel cylinder (welded) .....according to DOT and TC regulations

Working pressure .....max. 35 bar / 50 °C (507 psi / 122 °F)

Finish .....Federal Red P20750

.....other colour upon customer request

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

Marking .....according to DOT and TC regulations

Additional marking:

- Owner marking, **Minimax Feuerschutz** .....MF
- Owner no. (acc. to order) .....xxxxxxx
- Tare weight .....TARExxx
- DOT specification .....DOT-4BW500
- TC specification .....TC-4BWM34

#### Marking

Part no. marked in the area Y

#### Not included in delivery

Type label .....P21.231.140 - 2

Adapter M12x1.5 - G1/8 VSN 1230/200 .....887644, P21.231.210

Contact pressure gauge VSN 1230/200 .....P21.231.430

Clamp for extinguishing agent cyl. VSN 1230/200 ....P21.231.240

#### Release devices for valve type A25 and B25:

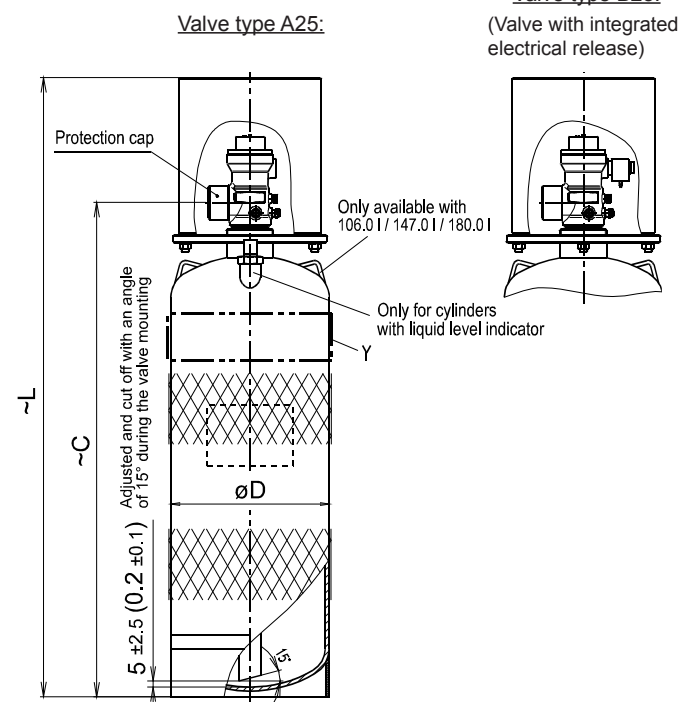
- Pneumatic .....P21.231.210
- Pneumatic/Manual .....P21.231.210
- Manual .....P21.231.210
- Tackle pneumatic/manual, marine .....P21.231.210

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

- Electrical .....P21.231.210
- Electrical with mech. blocking device .....P21.231.210

#### Dimension drawing

Dimensions in mm (inch)



Nominal volume	~L	~C	øD
22.0 l (60 lbs)	810 (31.89)	503 (19.8)	254 (10)
52.0 l (130 lbs)	1435 (56.50)	1128 (44.41)	254 (10)
106.0 l (270 lbs)	1240 (48.82)	924 (36.38)	406.6 (16)
147.0 l (370 lbs)	1575 (62.01)	1258 (49.53)	406.6 (16)
180.0 l (450 lbs)	1850 (72.84)	1537 (60.51)	406.6 (16)



# Extinguishing technology Halocarbon agents P21.231.131 - 1

## Halocarbon agents cylinder valve

### Valve B0482-A25 and B0482-A DN33, VSN 1230/200



### Approvals / CE marking



G307011



LISTED



LISTED



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1134-CPD-1007

1) Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230)

2) Part of the system approval

### SAP designation

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

### Maintenance

see product information 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. (VSN / manufacturer) .....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  
Product informat. valve B0481 DN49 / B0482 DN33 part no.  
887866

### Not included in delivery

Adapter M12x1.5 - G1/8 VSN 1230/200 .....887644, P21.231.210  
Contact pressure gauge VSN 1230/200 .....P21.231.430  
Dip tube VSN 1230/200 for valve DN33 .....88 7657  
(dip tubes are to be shortened as necessary in acc. to specified  
dimension given of the extinguishing agent cylinder)  
Release devices VSN 1230/200:  
- Electrical .....P21.231.210  
- Electrical with mech. blocking device .....P21.231.210  
- Pneumatic .....P21.231.210  
- Pneumatic/Manual .....P21.231.210  
- Manual .....P21.231.210  
- Tackle pneumatic/manual - marine .....P21.231.210



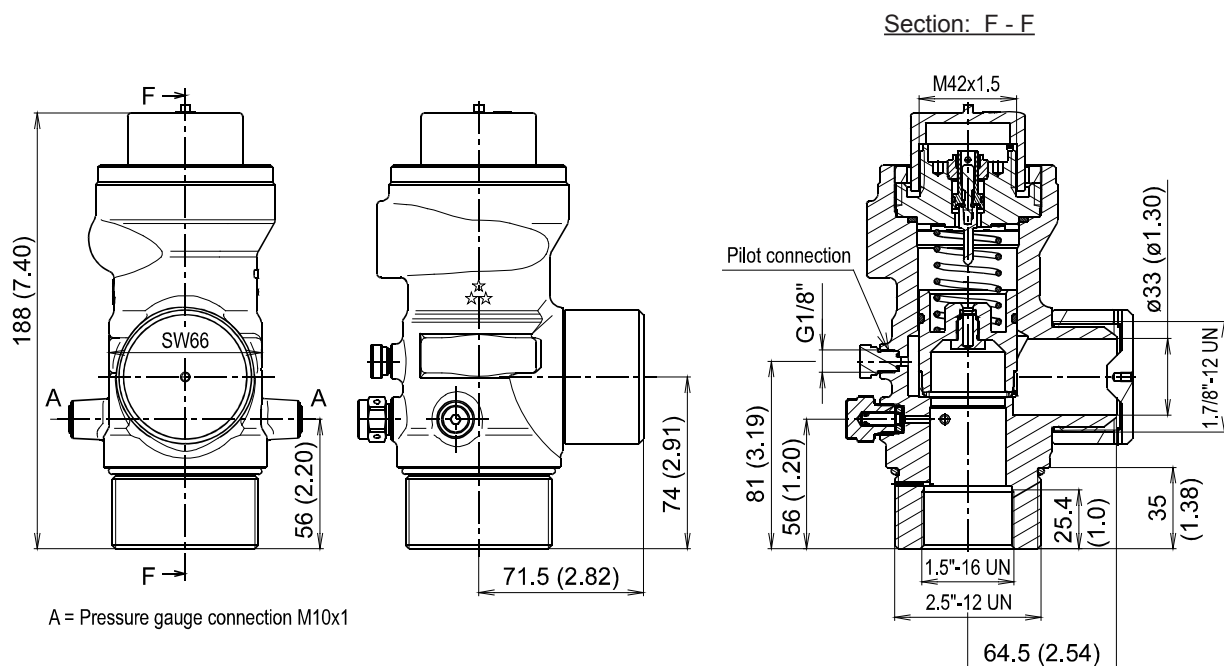
# Extinguishing technology Halocarbon agents P21.231.131 - 1

## Halocarbon agents cylinder valve

Valve B0482-A25 and B0482-A  
DN33, VSN 1230/200

### Dimension drawing

Dimensions in mm (inch)





## Extinguishing technology Halocarbon agents **P21.231.131 - 2**

### Halocarbon agents cylinder valve

#### Valve B0482-B25 and B0482-B DN33 with integrated electrical release VSN 1230/200



#### Approvals / CE marking



G307011



APPROVED



1134-CPD-1007

<sup>1)</sup> Part of the system approval

#### SAP designation

e.g. part no. 887965: Valve B0482-B25 DN33 with integrated electrical release

#### Maintenance

see product information valve B0481 DN49 / B0482 DN33  
part no. 887866

#### Spare parts

- Bursting disk 63.5 bar for B0482-B25, part no. 915518
- Bursting disk 89 bar for B0482-B, part no. 888026

Designation		Part no.	Working pressure at 21 °C (69.8 °F)	Weight approx.
Valve with integrated electrical release	B0482-B25 DN33	887965	25 bar (360 psi)	4.7 kg (10.4 lbs)
	B0482-B DN33	887663	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)  
FM .....-18 °C to +50 °C (0 °F to 122 °F)  
Working pressure at 50 °C (122 °F):  
- Valve B0482-B25 DN33 .....35 bar (508 psi)  
- Valve B0482-B DN33 .....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  
Integrated electrical release:  
- Voltage .....24 V DC  
- Current intensity .....0.25 A ±10 %  
- Output .....6 W  
- Protection category .....IP 54  
- Duty cycle .....100 %

#### 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. (VSN / manufacturer) .....887965 / B04820022,  
.....887663 / B04820024  
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-B25/B DN33 with integrated electrical release  
Product informat. valve B0481 DN49 / B0482 DN33 part no.  
887866

#### Not included in delivery

Adapter M12x1.5 - G1/8 VSN 1230/200 .....887644, P21.231.210  
Contact pressure gauge VSN 1230/200 .....P21.231.430  
Dip tube VSN 1230/200 for valve DN33 .....88 7657  
(dip tubes are to be shortened as necessary in acc. to specified  
dimension given of the extinguishing agent cylinder)  
Release devices VSN 1230/200:  
- Pneumatic .....P21.231.210  
- Pneumatic/Manual .....P21.231.210  
- Manual .....P21.231.210  
- Tackle pneumatic/manual, marine .....P21.231.210



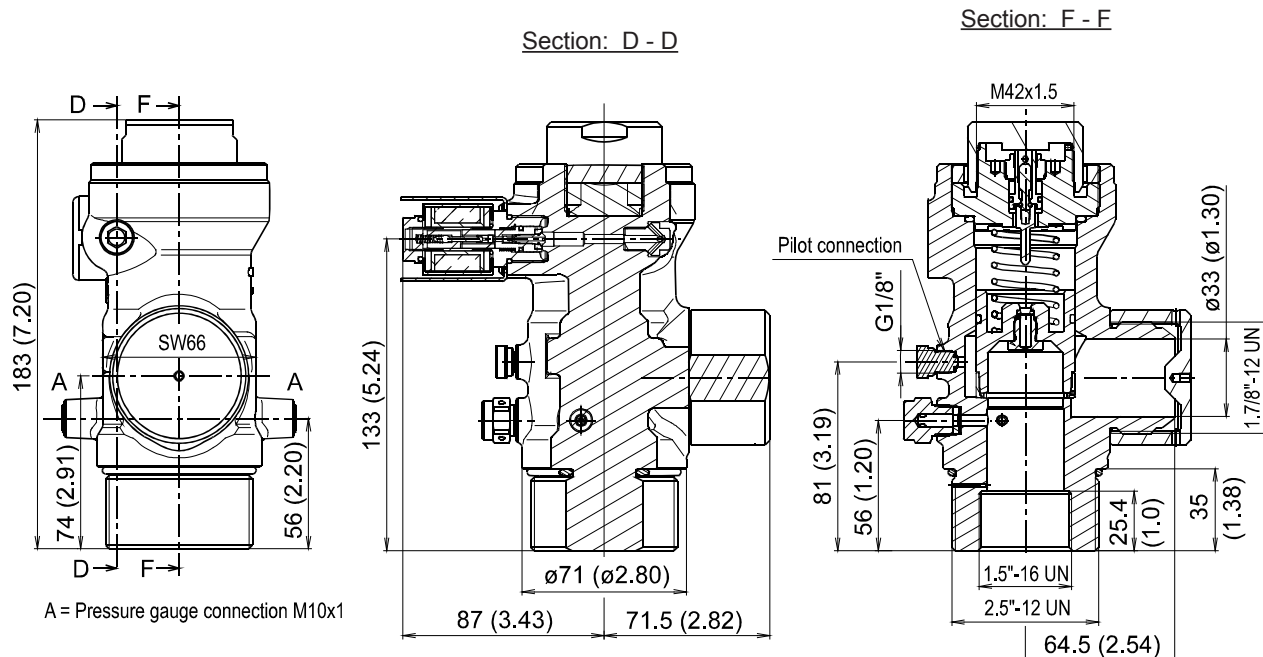
# Extinguishing technology Halocarbon agents **P21.231.131 - 2**

## Halocarbon agents cylinder valve

**Valve B0482-B25 and B0482-B**  
**DN33 with integrated electrical release**  
**VSN 1230/200**

### Dimension drawing

Dimensions in mm (inch)





# Extinguishing technology Halocarbon agents P21.231.131 - 3

## Halocarbon agents cylinder valve

### Valve B0481-A25 and B0481-A DN49, VSN 1230/200



#### Approvals / CE marking



G307011



LISTED



LISTED



APPROVED



1134-CPD-1007

1) Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230)

2) Part of the system approval

#### SAP designation

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

#### Maintenance

see product information 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:  
.....-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):  
- 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. (VSN / 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  
Product informat. valve B0481 DN49 / B0482 DN33 part no.  
887866

#### Not included in delivery

Adapter M12x1.5 - G1/8 VSN 1230/200 .....887644, P21.231.210  
Contact pressure gauge VSN 1230/200 .....P21.231.430  
Dip tube VSN 1230/200 for valve DN49 .....88 7659  
(dip tubes are to be shortened as necessary in acc. to specified  
dimension given of the extinguishing agent cylinder)  
Release devices VSN 1230/200:  
- Electrical .....P21.231.210  
- Electrical with mech. blocking device .....P21.231.210  
- Pneumatic .....P21.231.210  
- Pneumatic/Manual .....P21.231.210  
- Manual .....P21.231.210  
- Tackle pneumatic/manual - marine .....P21.231.210



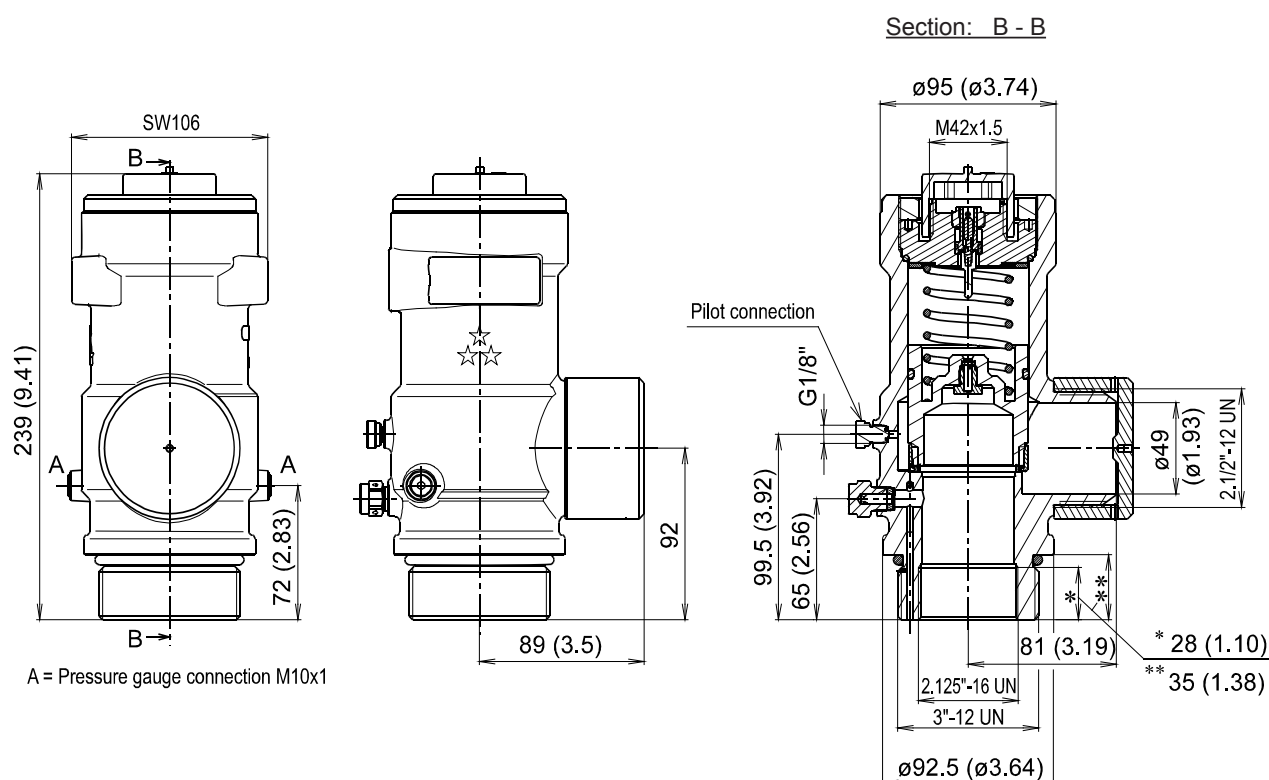
# Extinguishing technology Halocarbon agents **P21.231.131 - 3**

## Halocarbon agents cylinder valve

**Valve B0481-A25 and B0481-A**  
**DN49, VSN 1230/200**

### Dimension drawing

Dimensions in mm (inch)







## Extinguishing technology Halocarbon agents **P21.231.131 - 4**

### Halocarbon agents cylinder valve

#### Valve B0481-B25 und B0481-B DN49 with integrated electrical release VSN 1230/200



#### Approvals / CE marking



G307011



APPROVED



1134-CPD-1007

1) Part of the system approval

#### SAP designation

e.g. part no. 887967: Valve B0481-B25 DN49 with integrated electrical release

#### Maintenance

see product information valve B0481 DN49 / B0482 DN33  
part no. 887866

#### Spare parts

- Bursting disk 63 bar for B0481-B25, part no. 915517
- Bursting disk 88 bar for B0481-B, part no. 889295

Designation		Part no.	Working pressure at 21 °C (69.8 °F)	Weight approx.
Valve with integrated electrical release	B0481-B25 DN49	887967	25 bar (360 psi)	9.3 kg (20.5 lbs)
	B0481-B DN49	887665	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:  
.....-20 °C to +50 °C (-4 °F to 122 °F)  
FM .....-18 °C to +50 °C (0 °F to 122 °F)  
Working pressure at 50 °C (122 °F):  
- Valve B0481-B25 DN49 .....35 bar (508 psi)  
- Valve B0481-B 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  
Integrated electrical release:  
- Voltage .....24 V DC  
- Current intensity .....0.25 A ± 10 %  
- Output .....6 W  
- Protection category .....IP 54  
- Duty cycle .....100 %

#### 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. (VSN / manufacturer) .....887967 / B04810020,  
.....887665 / B04810023  
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-B25/B DN49 with integrated electrical release  
Product informat. valve B0481 DN49 / B0482 DN33 part no.  
887866

#### Not included in delivery

Adapter M12x1.5 - G1/8 VSN 1230/200 .....887644, P21.231.210  
Contact pressure gauge VSN 1230/200 .....P21.231.430  
Dip tube VSN 1230/200 for valve DN49 .....88 7659  
(dip tubes are to be shortened as necessary in acc. to specified  
dimension given of the extinguishing agent cylinder)  
Release devices VSN 1230/200:  
- Pneumatic .....P21.231.210  
- Pneumatic/Manual .....P21.231.210  
- Manual .....P21.231.210  
- Tackle pneumatic/manual - marine .....P21.231.210



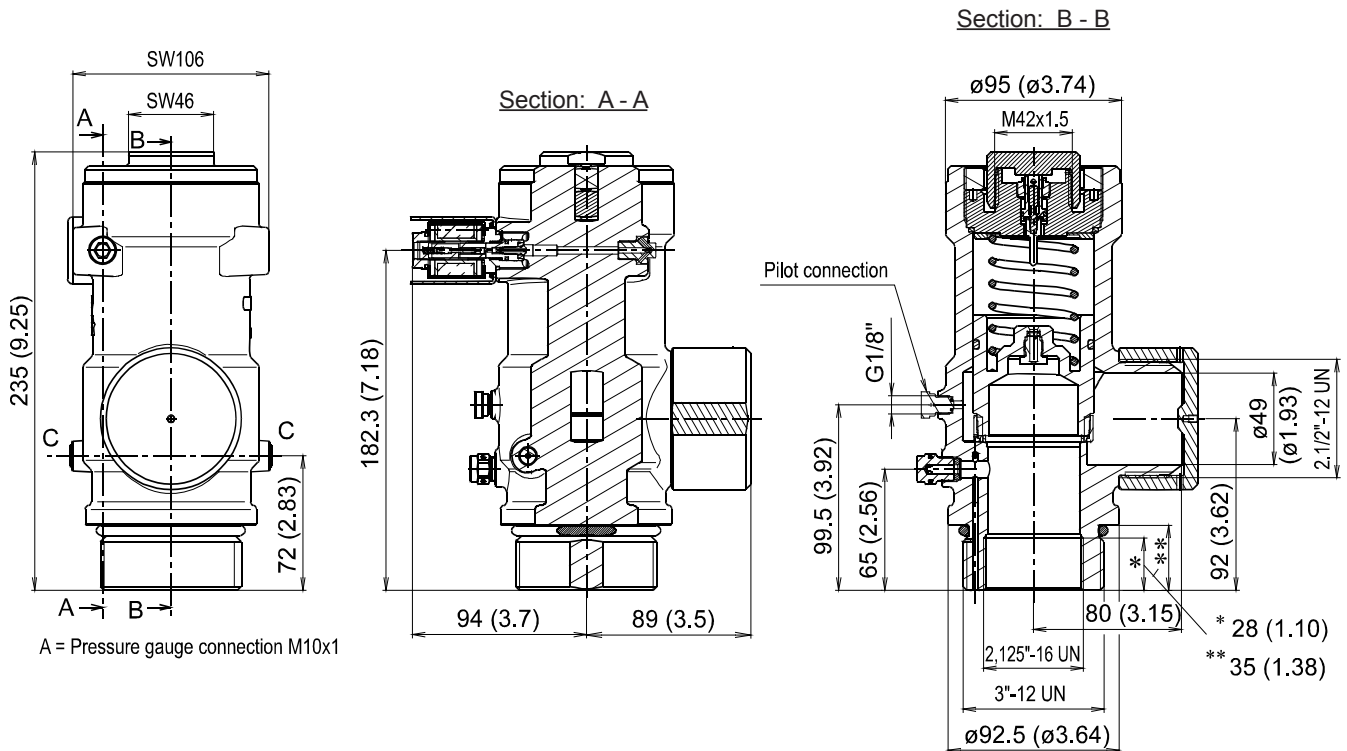
# Extinguishing technology Halocarbon agents **P21.231.131 - 4**

## Halocarbon agents cylinder valve

**Valve B0481-B25 und B0481-B**  
**DN49 with integrated electrical release**  
**VSN 1230/200**

### Dimension drawing

Dimensions in mm (inch)







# Extinguishing technology Halocarbon agents Halocarbon agents cylinder accessories

## P21.231.140 - 2

### Type label extinguishing agent cylinder VSN 200

### Approvals



1) Type label (de and en) Listed system covered by UL-file EX26532,  
Material and technical conditions of supply:  
UL listed Marking and Labeling System

2) Part of the system approval

### SAP designation

e. g. part no. 887897: Type label extinguishing agent cylinder  
VSN 200

### Maintenance maintenance-free

Designation	Language	Part no.	Weight
Type label extinguishing agent cylinder VSN 200	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 listed 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.



# Extinguishing technology Halocarbon agents P21.231.210 - 1

## Cylinder add-on parts Halocarbon agents

### Release device VSN 1230/200 pneumatic



### Approvals / CE marking



1) Only in conjunction with valve B0481, B0482 or B0480

2) Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230)

3) Part of the system approval

### SAP designation

part no. 887669: Release device pneumatic VSN200

### Maintenance

see product information release device pn part no. 887862

Designation	Part no.	Weight
Release device VSN 1230/200 pneumatic	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:

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

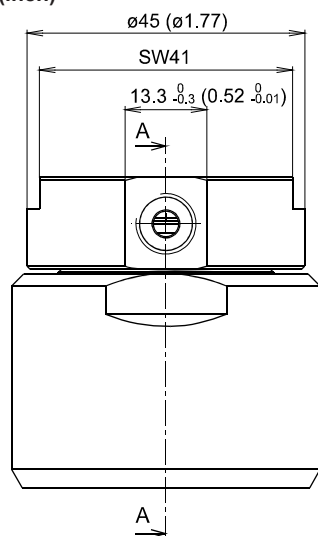
UL / ULC / FM .....-18 °C to +50 °C (0 °F to 122 °F)

### 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 (P21.231.131) and type B0480 (P21.211.131). One extinguishing agent cylinder valve each can be opened pneumatically.

### Included in delivery

Release device VSN 1230/200 pneumatic

Product information release device pn part no. 887862

### Not included in delivery

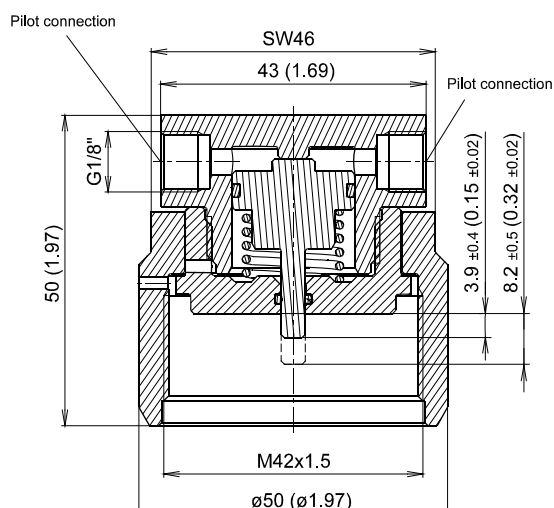
Adapter M12x1.5 - G1/8 VSN 1230/200 .....887644, P21.231.210

Plug for pilot connection G1/8 VSN .....88 8032

Additional possible use also with:

Release device electrical .....P21.231.210

### Section: A - A





# Extinguishing technology Halocarbon agents P21.231.210 - 2

## Cylinder add-on parts Halocarbon agents

### Release device VSN 1230/200 electrical



### Approvals / CE marking



1) Only in conjunction with valve B0481, B0482 or B0480

2) Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230)

3) Part of the system approval

### SAP designation

e.g. part no. 887667: Release device electrical VSN200

### Maintenance

see product information release device el. part no. 887863

for use in accordance with UL system approval:

see product information electrical release

VSN 1230/200 part no. 889299

Designation		Part no.	Weight
Release device VSN 1230/200 electrical	with diode <sup>4)</sup>	887667	2.49 kg (5.5 lbs)
	without diode	889323	

### Technical data

Type / part no. manufacturer with diode .....B04425130  
without diode .....B04425114  
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:  
.....-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)  
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

### Application

Electrical actuation of extinguishing agent cylinder valves of type B0481/B0482 (P21.231.131) and type B0480 (P21.211.131). 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 VSN 1230/200 electrical  
Product information release device el. part no. 887863

### Not included in delivery

Screw reset tool VSN 1230/200 .....88 7645

Additionally further release devices can be installed:

- Pneumatic .....P21.231.210  
- Pneumatic/Manual .....P21.231.210  
- Manual .....P21.231.210  
- Tackle pneumatic/manual - marine .....P21.231.210

<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.



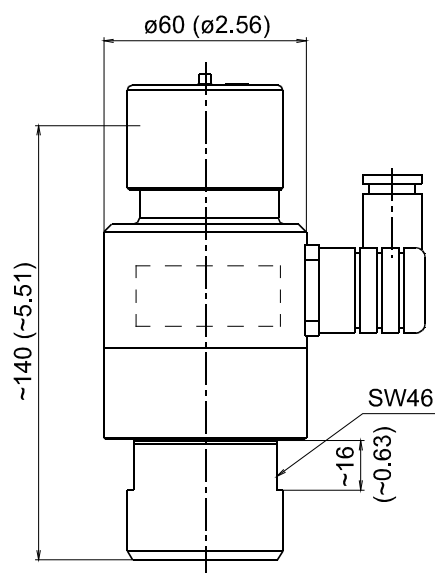
## Extinguishing technology Halocarbon agents **P21.231.210 - 2**

### Cylinder add-on parts Halocarbon agents

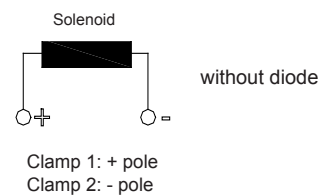
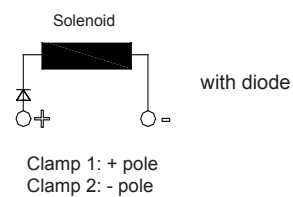
#### Release device VSN 1230/200 electrical

#### Dimension drawing

Dimensions in mm (inch)



#### Terminal connection







## Extinguishing technology Halocarbon agents **P21.231.210 - 3**

### Cylinder add-on parts Halocarbon agents

#### Release device VSN 1230/200 electrical with mech. blocking device



#### Approvals / CE marking



G307011



1134-CPD-1007

1) Only in conjunction with valve B0481, B0482 or B0480

2) Part of the system approval

#### SAP designation

e.g. part no. 887666: Release device electr. with mech. \*  
blocking device VSN200

#### Maintenance

see product information release device el. part no. 887863

#### Spare parts

Pre-fabricated connection cable:

- Cable release device with plug part no. 912427
- Cable release device with socket part no. 912426

Designation		Part no.	Weight
Release device electrical with mech. blocking device	with diode <sup>3)</sup>	887666	2,7 kg (5,95 lbs)
	without diode	889322	

#### Technical data

Type / part no. manufacturer	with diode .....B04425109
	without diode .....B04425129
Nominal voltage	.....24 V / DC $\pm 15\%$
Nominal current	.....0.5 A $\pm 10\%$
IP code	.....IP65
Electrical connection	.....PG9 <sup>3)</sup>
Max. permitted test current	.....20 mA
Operating temperature range:	
	.....-20 °C to +50 °C (-4 °F to 122 °F)
FM	.....-18 °C to +50 °C (0 °F to 122 °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
<u>Micro switches:</u>	
- Voltage	.....48 V DC
- Current	.....max. 1 A
- IP code	.....IP6K7
- Change-over contact	.....potential-free

#### Application

Electrical actuation of extinguishing agent cylinder valves of type B0481/B0482 (P21.231.131) and type B0480 (P21.211.131). 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.

#### Marking

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

#### Included in delivery

Release device VSN 1230/200 electrical with mech. blocking device compl. with pre-fabricated connection cable  
Product information release device el. part no. 887863

#### Not included in delivery

Screw reset tool VSN 1230/200 .....88 7645  
Additionally further release device can be installed:  
- Manual .....P21.231.210

<sup>3)</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.



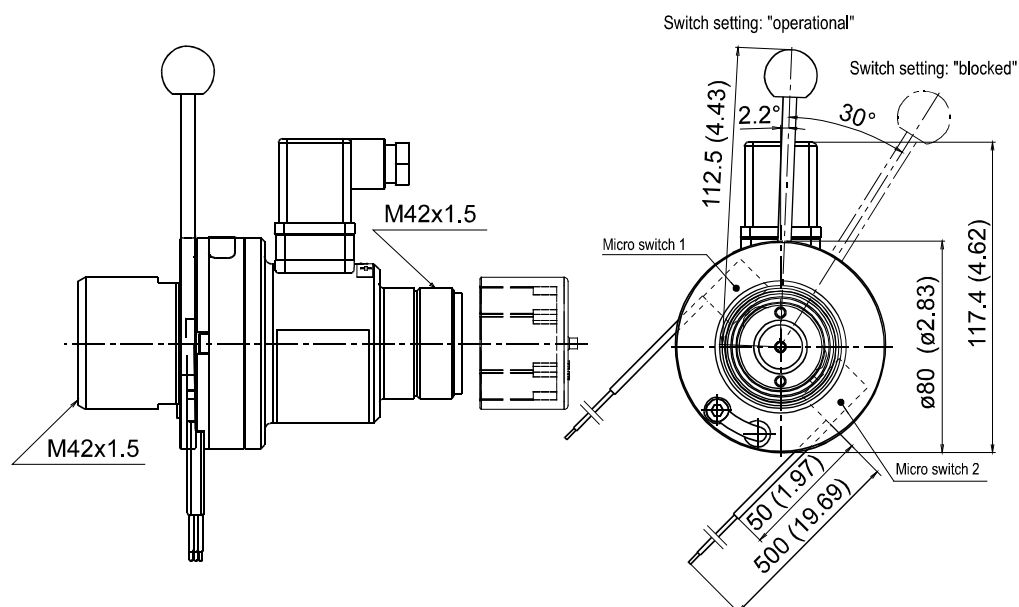
## Extinguishing technology Halocarbon agents **P21.231.210 - 3**

### Cylinder add-on parts Halocarbon agents

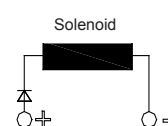
#### Release device VSN 1230/200 electrical with mech. blocking device

##### Dimension drawing

Dimensions in mm (inch)



##### Terminal connection



Clamp 1: + pole  
Clamp 2: - pole





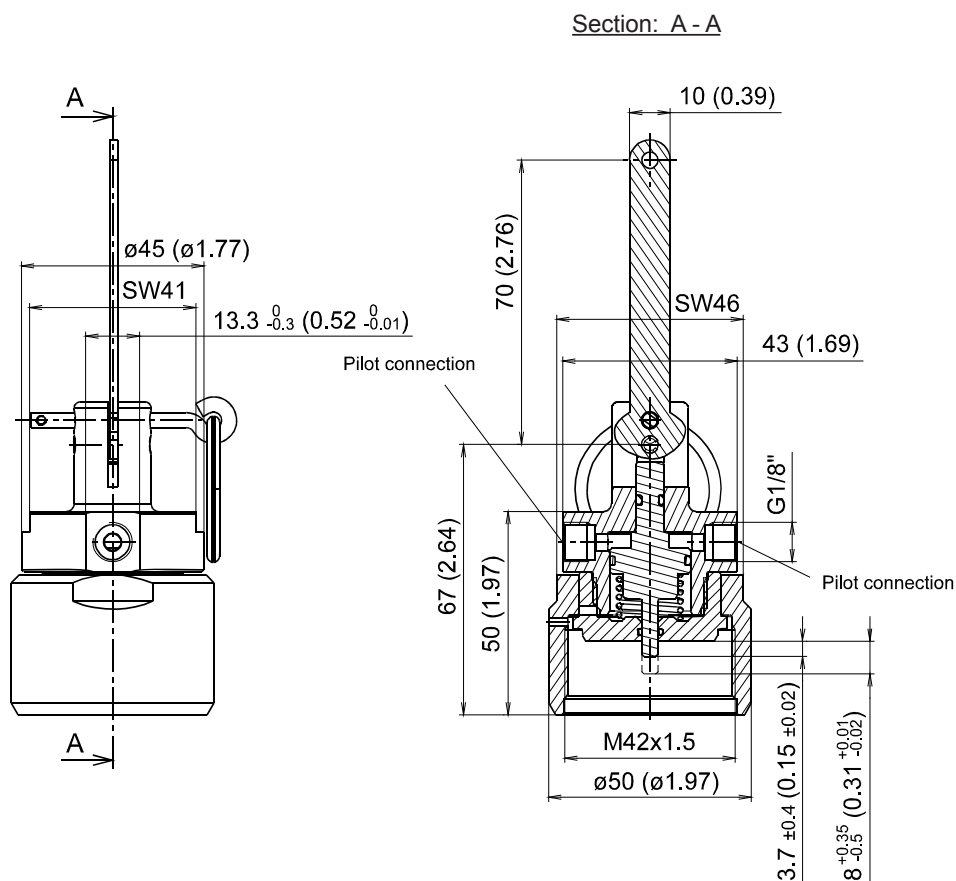
# Extinguishing technology Halocarbon agents **P21.231.210 - 4**

## Cylinder add-on parts Halocarbon agents

### Release device VSN 1230/200 pneumatic/manual

#### Dimension drawing

Dimensions in mm (inch)





# Extinguishing technology Halocarbon agents P21.231.210 - 5

## Cylinder add-on parts Halocarbon agents

### Release device VSN 1230/200 manual



### Approvals



1) Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230)

2) Part of the system approval

### SAP designation

part no. 887668: Release device manual VSN200

### Maintenance

see product information release device ma part no. 887989

Designation	Part no.	Weight
Release device VSN 1230/200 manual	887668	0.41 kg (0.90 lbs)

### Technical data

Type / part no. manufacturer .....B04420100

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)

### Application

Manual actuation of extinguishing agent cylinder valves of type B0481 (P21.231.131) and type B0482 (P21.231.131).

One extinguishing agent cylinder valve each can be opened manually.

### Note

The manual actuation must take place at least 5 seconds.

### Included in delivery

Release device VSN 1230/200 manual

Product information release device ma part no. 887989

### Not included in delivery

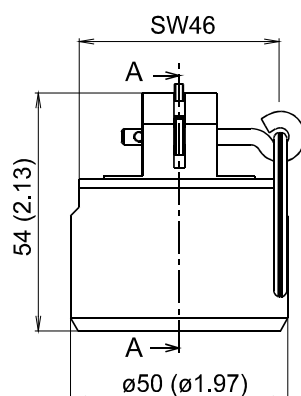
Additional possible use also with release device:

- Electrical .....P21.231.210

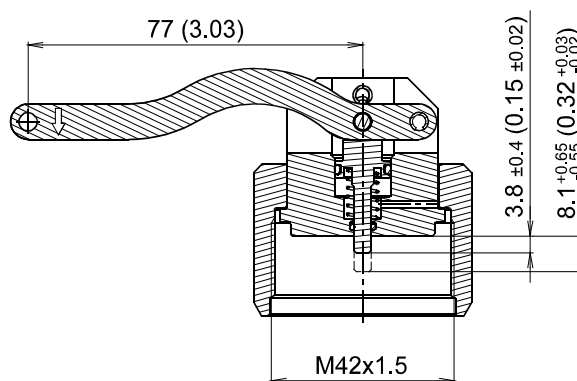
- Electrical with mech. blocking device .....P21.231.210

### Dimension drawing

Dimensions in mm (inch)



Section: A - A





## Extinguishing technology Halocarbon agents **P21.231.210 - 6**

### Cylinder add-on parts Halocarbon agents

#### Release device VSN 1230/200 tackle pneum./manual - marine



**Approvals**  
without approval

#### SAP designation

Part no. 888410: Release device tackle pneum./manual VSN  
200 / 1230

#### Maintenance

Sichtkontrolle und Funktionskontrolle im Rahmen der  
anlagenspezifischen Funktionsprobe.

Designation	Part no.	Weight
Release device VSN 1230/200 tackle pneum./manual - marine	888410	1.25 kg (2.76 lbs)

#### Technical data

Type / part no. manufacturer .....B04420123  
Ansteuerdruck ...min. 21 bar (305 psi), max. 360 bar (5221 psi)  
manuelle Betätigung .....Auslösekraft < 120 N  
Operating temperature .....-20 °C to +50 °C (-4 °F to 122 °F)

#### Application

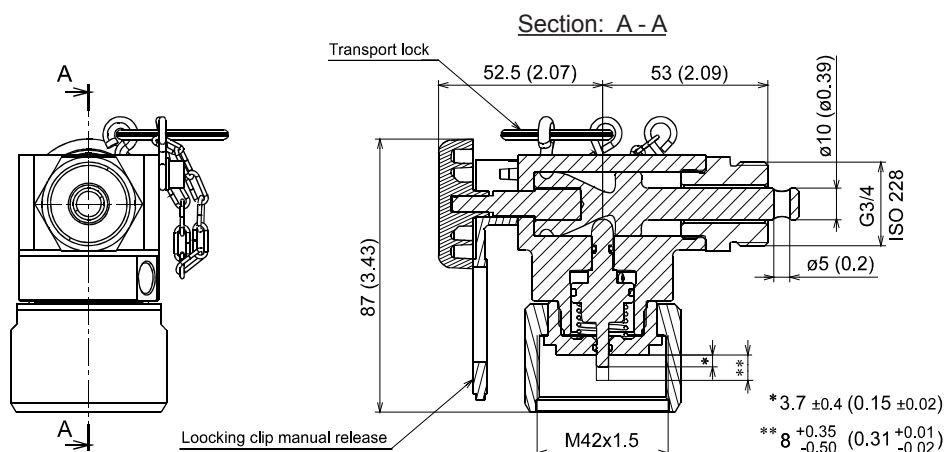
Tackle release for marine application.  
Pneumatic or manual actuation of extinguishing agent cylinder valves of type B0481 (P21.231.131) and type B0482 (P21.231.131) with a max. operating pressure of 60 bar.  
One extinguishing agent cylinder valve each can be opened either manually (hand-released at the valve or via tackle) or pneumatically.

#### 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)



#### Not included in delivery

Ropes and accessories .....P21.214.420  
Wire rope pulley A and B .....P21.214.420  
Seal .....35 4170  
Seal wire DIN1367-0,5-galvanized .....17 5567  
Adapter M12x1.5 - G1/8 VSN 1230/200 .....887644, P21.231.210  
Plug for pilot connection G1/8 VSN .....88 8032

Additional possible use also with release device:

- Electrical .....P21.231.210  
- Electrical with mech. blocking device .....P21.231.210

**Caution: The tackle release device must only be actuated manually if used with the electrical release device with mech. blocking device. The pneumatic actuation is not permitted in this case.**



# Extinguishing technology Halocarbon agents **P21.231.210 - 7**

## Cylinder add-on parts Halocarbon agents

### Hose DN4 - VSN 1230/200



### Approvals / CE marking



G307008


<sup>1)</sup>  
LISTED

<sup>1)</sup>  
LISTED

<sup>2)</sup>  
APPROVED


0786-CPD-30067

<sup>1)</sup> Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230)

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

### SAP designation

e.g. part no. 887834: Hose DN4x 600 - VSN 200/1230

### Maintenance

see product information hose DN4 part no. 887973

Designation		Part no.	L mm (in)	Weight kg (lbs)
Hose - VSN 1230/200	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 - MX 200/1230  
 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 (MX200/1230), 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

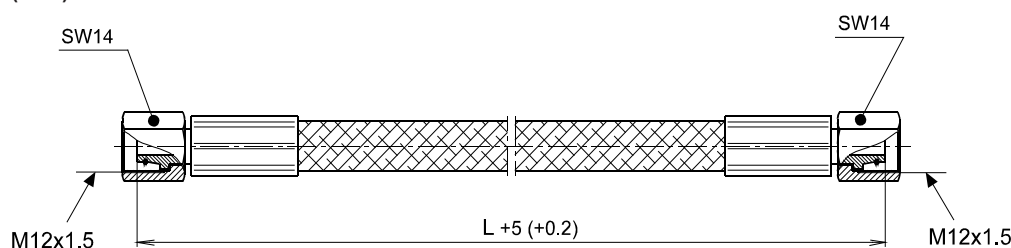
### Included in delivery

Hose DN4 VSN 1230/200

Product information hose DN4 part no. 887973

### Dimension drawing

Dimensions in mm (inch)







## Extinguishing technology Halocarbon agents **P21.231.210 - 8**

### Cylinder add-on parts Halocarbon agents

#### Adapter M12x1,5 - G1/8 VSN 1230/200



#### Approvals

(VdS approval is not required!)



1) Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230)

2) Part of the system approval

#### SAP designation

e.g. part no. 887644: Adapter M12x1.5 - G1/8 VSN200

#### Maintenance

maintenance-free

Designation	Part no.	Weight
Adapter M12x1,5 - G1/8 VSN 1230/200	887644	0.018 kg (0.04 lbs)

#### Technical data

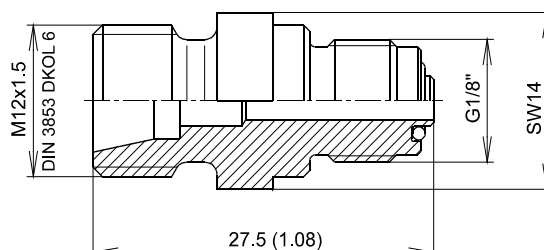
Operating medium .....FK-5-1-12, HFC-227ea,  
 .....argon, nitrogen, CO<sub>2</sub>, IG55, IG541  
 Operating temperature range:  
 .....-20 °C to +50 °C (-4 °F to 122 °F)  
 UL / ULC / FM .....-18 °C to +50 °C (0 °F to 122 °F)  
 Working pressure .....360 bar (5221 psi)  
 Material .....brass

#### Application

To the connection of the hose DN4 / pilot pipe with:  
 - Valves type B0481, valves type B0482  
 - Valves type B0480, BAS  
 - Release device VSN 1230/200 pneumatic/manual  
 - Release device VSN 1230/200 pneumatic

#### Dimension drawing

Dimensions in mm (inch)





# Extinguishing technology Halocarbon agents **P21.231.210 - 9**

## Cylinder add-on parts Halocarbon agents

### Hose DN40 and DN50 VSN 1230/200



### Approvals / CE marking



G307009



LISTED



LISTED



APPROVED



0786-CPD-30066

<sup>1)</sup> Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230)

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

### SAP designation

e.g. part no. 887647: Hose DN40 VSN 200/1230

### Maintenance

see product information hose VSN 1230/200 part no. 887849

Designation		Part no.	Weight kg (lbs)
Hose - VSN 1230/200	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 MX 1230/200  
 DN 40 90° / DN50 90° ..DN 40 / DN50 MX 1230/200 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, yellow chrome dulled  
 Ferrule .....steel, galvanized, yellow chrome dulled  
 Flexible hose line .....with fabric-inserted steel  
 Hexagon nipple .....steel, galvanized, yellow chrome dulled

### 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.. MX200/1230), Batch number, Working pressure (80 bar), Approval (VdS, CE), Date of manufacture (month/year)

### Included in delivery

Hose DN40/DN50 VSN 1230/200  
 Product information hose VSN 1230/200 part no. 887849



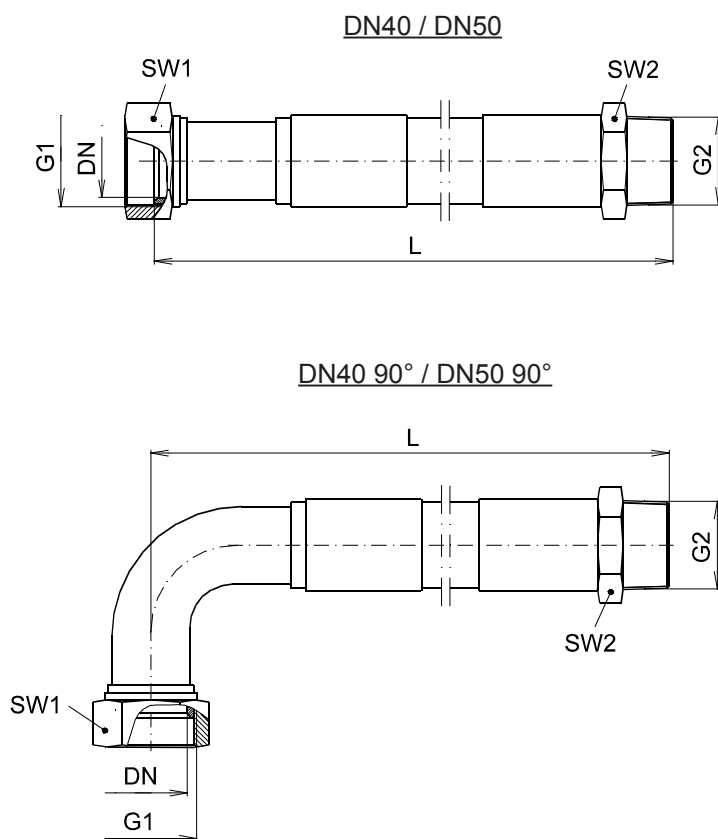
## Extinguishing technology Halocarbon agents **P21.231.210 - 9**

### Cylinder add-on parts Halocarbon agents

#### Hose DN40 and DN50 VSN 1230/200

##### 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



# Extinguishing technology Halocarbon agents **P21.231.210 - 10**

## Cylinder add-on parts Halocarbon agents

### Connection piece DN40 and DN50



### Approvals

(VdS approval is not required!)



<sup>1)</sup> Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230)

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

### SAP designation

e.g. part no. 888052: Connection piece DN40 VSN 200 / 1230

### Maintenance

maintenance-free

Designation		Part no.	Weight kg (lbs)
Connection piece VSN 1230/200	DN40	888052	0.64 (1.44)
	DN40 NPT	914154	
	DN50	888053	1.26 (2.77)
	DN50 NPT	914155	

### Technical data

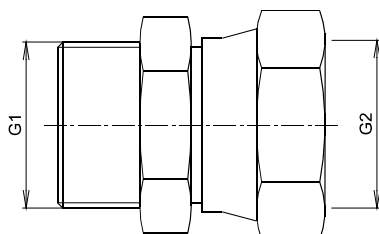
External thread .....tapered, thread seal  
 Internal thread .....UN-nut thread, 74° conical hole  
 Working pressure .....60 bar (870 psi)  
 Material .....steel, galvanized coated

### Application

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

### 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	



# Extinguishing technology Halocarbon agents **P21.231.210 - 11**

## Cylinder add-on parts Halocarbon agents

### Adapter check valve DN50 NPT - ISO



### Approvals

(VdS approval is not required!)



<sup>1)</sup> Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230)

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

### SAP designation

Part no. 887443: Adapter check valve DN50 NPT-ISO  
for extinguishing agent container 52-180 litre

### Maintenance

maintenance-free

Designation	Part no.	Weight
Adapter check valve DN50 NPT-ISO	887443	0.47 kg (1.04 lbs)

### Technical data

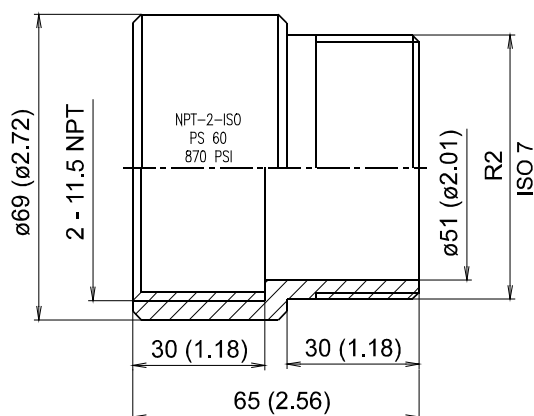
Working pressure .....max. 60 bar (870 psi)  
Thread NPT .....acc. to ANSI / ASME B1.20.1-NPT  
ISO .....acc. to EN 10226  
Material .....steel, galvanized acc. to EN 12329 - Fe/Zn12

### Application

For connecting of ISO threads with NPT pipes in VSN 1230/200 systems.

### Dimension drawing

Dimensions in mm (inch)





# Extinguishing technology Halocarbon agents **P21.231.220 - 1**

## Manifold Halocarbon agents

### Check valve DN50 CR and CR NPT



### Approvals / CE marking



G307012



0786-CPD-30068

<sup>1)</sup> Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230)

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

### SAP designation

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

### Maintenance

see product information check valve part no. 887871

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

### Technical data

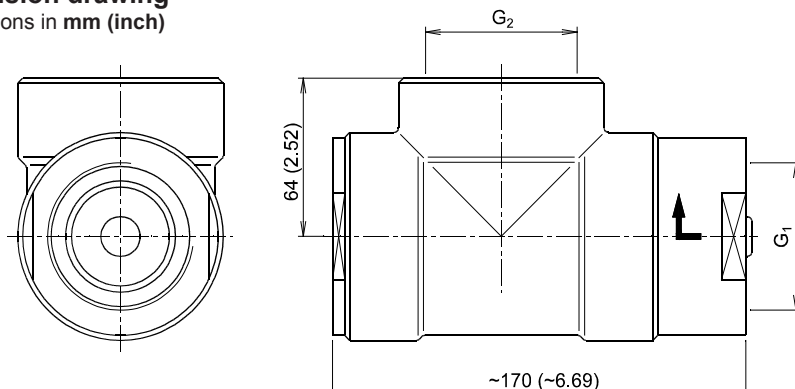
Type .....MX-CR, MX-CR NPT  
 Medium.....FK-5-1-12, HFC-227ea, nitrogen  
 Nominal diameter .....DN50  
 Working pressure .....60 bar (870 psi)  
 Test pressure .....90 bar (1305 psi)  
 Opening pressure .....≤ 3 bar (43.05 psi)  
 Leakage rate at 20 bar (290 psi) .....≤ 20 bubbles / 1 min  
 Operating 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 dismounted 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

Product information 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





# Extinguishing technology Halocarbon agents **P21.231.240 - 1**

## Cylinder rack Halocarbon agents

### Clamp for extinguishing agent cylinder VSN 1230/200



#### Approvals

(VdS approval is not required!)



1) Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230)

2) Part of the system approval

#### SAP designation

e.g. part no. 887628: Clamp for ext. agent cylinder 25/50/52/80l VSN200

#### Maintenance

maintenance-free

Designation		Part no.	Steel cylinder	Weight kg (lbs)
Clamp for extinguishing agent cylinder VSN 1230/200	25/50/52/80l	887628	25 l, 50 l, 52 l, 80 l (ø267)	1.46 (3.2)
	22/40l drawn	888014	22 l, 40 l	1.26 (2.8)
	100l drawn	887988	100 l	1.69 (3.7)
	140l drawn	887638	140 l (ø356)	1.87 (4.1)
	80/140/180l drawn/welded	887639	80 l, 106 l, 140 l, 147 l, 180 l	2.08 (4.6)

#### Technical data

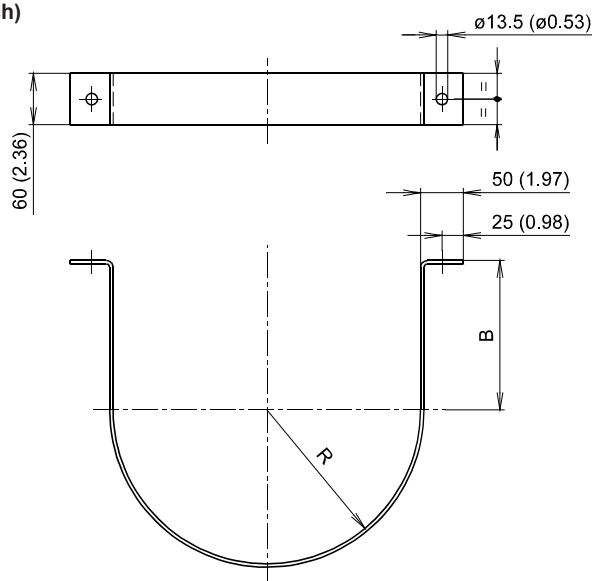
Material .....steel strip EN 10048 - 4,0 x 60, S235JR  
Finish .....matt-finished or powder-coated  
.....RAL 9011 graphite black

#### Not included in delivery

Fastening material

#### Dimension drawing

Dimensions in mm (inch)



Clamp for exting. agent cylinder	R	B
25/50/52/80l	134 (5.28)	120 (4.72)
22/40l drawn	117 (4.60)	112 (4.41)
100l drawn	160 (6.30)	155 (6.10)
140l drawn	180 (7.09)	175 (6.89)
80/140/180l drawn/welded	205 (8.07)	200 (7.87)



## Inert gas extinguishing technology

### Selector valve 200 bar

## P21.211.331 - 2

**Selector valve BV DN25 - 50**  
**CO<sub>2</sub> / IG / VSN 1230/200**



#### Approvals / CE marking



<sup>1)</sup> Listed system covered by UL-File EX6388 (CO<sub>2</sub>) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

<sup>2)</sup> Part of the system approval (VSN 200 and VSN 1230)

#### 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
Selector valve BV	DN25	885189	17.0 kg (37.5 lbs)
	DN40	885191	20.5 kg (45.2 lbs)
	DN50	885192	24.8 kg (54.7 lbs)
	DN25 - NPT	912052	17.0 kg (37.5 lbs)
	DN40 - NPT	912053	20.5 kg (45.2 lbs)
	DN50 -NPT	912054	24.8 kg (54.7 lbs)

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

#### Product sheets also applying

Cylinder D55-H106 .....P21.211.334  
 Ball valves BV DN25, DN40 and DN50 .....P21.211.334

#### 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 VSN 1230/200 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 VSN 1230/200, 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, P21.211.430  
 Manual release lever BV <DN65, 497 mm long .....860346



# Inert gas extinguishing technology

## P21.211.331 - 2

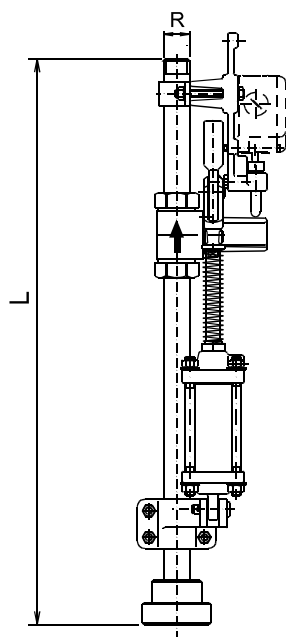
### Selector valve 200 bar

Selector valve BV DN25 - 50

CO<sub>2</sub> / IG / VSN 1230/200

### Dimension drawing

Dimensions in mm (inch)



DN	R	L
25	R1 - DIN 2999	790 (31.1)
40	R1.1/2 - DIN 2999	790 (31.1)
50	R2 - DIN 2999	805 (31.7)
25 - NPT	1 - 11.5 NPT	840 (33.1)
40 - NPT	1.1/2 - 11.5 NPT	820 (32.3)
50 - NPT	2 - 11.5 NPT	820 (32.3)



## Inert gas extinguishing technology

### Selector valve accessories

## P21.211.334 - 4

### Push-button selector valve



### Approvals



<sup>1)</sup> Part of the system approval VSN 1230 (S314012) und VSN 200 (S313007)

<sup>2)</sup> Listed system covered by UL-File EX26532 (Ar, VSN 200 and VSN 1230)

<sup>3)</sup> Part of the system approval (VSN 200 and VSN 1230)

### SAP designation

part no. 822674: Druckknopf Bereichsventil

### Maintenance

see product information 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.

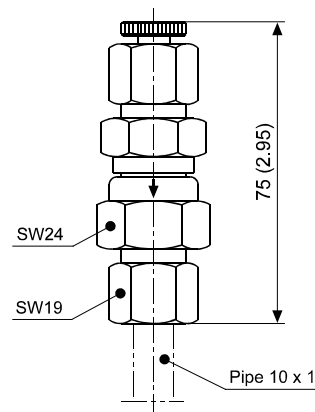
### Included in delivery

Push-button selector valve

Product information push-button selector valve part no. 886501

### Dimension drawing

Dimensions in mm (inch)





# Extinguishing technology Halocarbon agents **P21.231.341 - 1**

## Safety valve Halocarbon agents

### Safety valve G1/2 - 66 bar



### Approvals



1) Part of the system approval S314012 (VSN 1230), S313007 (VSN 200), S312001 (CF Ar 300), S312002 (CF N<sub>2</sub> 300), S312003 (CF N<sub>2</sub> 200), S312004 (CF Ar 200).

2) Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230)

3) Part of the system approval

### SAP designation

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

### Maintenance

maintenance-free

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

### Technical data

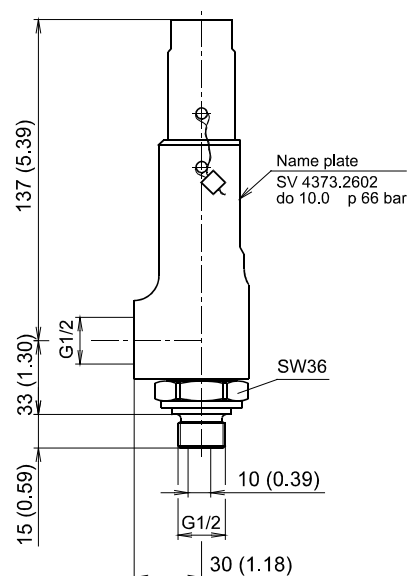
Type .....4373.2602  
 Medium .....FK-5-1-12, HFC-227ea, argon, nitrogen  
 Response pressure max. ...66 bar (957 psi) at +50 °C (122 °F)  
 Operating temperature range:  
 .....-20 °C to +50 °C (-4 °F to 122 °F)  
 UL / ULC / FM .....-18 °C to +50 °C (0 °F to 122 °F)  
 Thread .....acc. to ISO 228  
 Metal seal .....-270 °C to +280 °C (-454 °F to 536 °F)  
 Test certificate .....EN 10204 - 3.1 (response pressure)  
 Position of device .....vertical  
 Safety valve according to pressure equipment directive  
 97/23/EC category IV.

### Application

Manifold selector valve for VSN 1230/200 systems and for Constant Flow systems.

### Dimension drawing

Dimensions in mm (inch)





# Extinguishing technology CO<sub>2</sub> HP

## Safety valve CO<sub>2</sub>

# P21.214.341 - 1

## Safety valve G1/2 - 140 bar



### Approvals



1) Part of the system approval:

- Argotec HD-1 (S398010) / HD-2 (S398011)
- Argon - fire extinguishing system:  
"Oxeo Argon-Löschsystem HD200 (S398003) / HD300 (S303001)"
- Nitrogen - fire extinguishing system:  
"Oxeo Stickstoff-Löschsystem HD200 (S398004) / HD300 (S303002)"
- CF Ar 200 (S312004) / CF Ar 300 (S312001)
- CF N<sub>2</sub> 200 (S312003) / CF N<sub>2</sub> 300 (S312002)
- VSN 1230 (S314012) / VSN 200 (S313007)

2) Listed system covered by:

UL-File EX6388 (CO<sub>2</sub>) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

3) Part of the system approval (VSN 200 and VSN 1230)

### SAP designation

part no. 886282: Safety valve G1/2-140bar

### Maintenance

maintenance-free

Designation	Part no.	Weight
Safety valve G1/2 - 140 bar	886282	1.4 kg (3.09 lbs)

### Technical data

Type .....4373.2612  
 Operating medium .....CO<sub>2</sub> - gaseous  
 Response pressure .....140 bar (2030 psi) at +50 °C (122 °F)  
 Flow rate .....approx. 3014 Nm<sup>3</sup>/h, gaseous  
 Thread .....in acc. to ISO 228  
 Metal seal .....-270 °C to +220 °C (-454 °F to 428 °F)  
 Position of device .....vertical

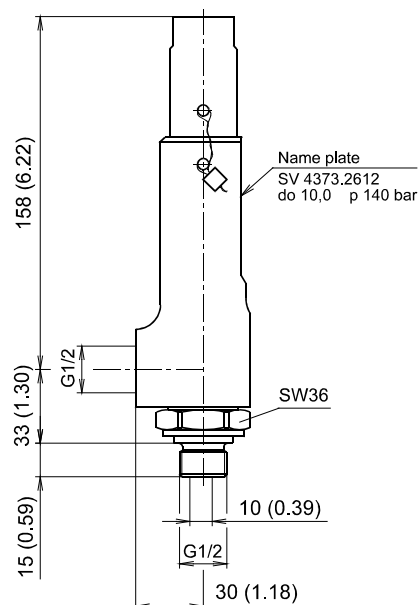
Safety valve according to pressure equipment directive  
 97/23/EC category IV

### Application

- Upstream piping in stationary CO<sub>2</sub> fire extinguishing systems
- Pilot pipe in stationary CO<sub>2</sub>, argon and nitrogen fire extinguishing systems and/or in VSN 1230/200 fire extinguishing systems

### Dimension drawing

Dimensions in mm (inch)





## Extinguishing technology Halocarbon agents **P21.231.360 - 2**

### Nozzle Halocarbon agents

#### Nozzles type CD, VSN 200



#### Approvals



G307010



1) Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230)

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 product information 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			
	C	887761	887783			
CD 1/2 NPT	D	887763	887784	3 (0.1181)	5 (0.1969)	0.2 (0.4)
	A <sup>2)</sup>	889033	889046		6 (0.2362)	
	B <sup>2)</sup>	889034	889048			
	C	889036	889049			
CD 1	D	889037	889050	3 (0.1181)	5 (0.1969)	0.2 (0.4)
	A <sup>2)</sup>	887768	887790		11 (0.4331)	
	B <sup>2)</sup>	887769	887791			
	C	887770	887792			
CD 1 NPT	D	887771	887793	3 (0.1181)	10 (0.3937)	0.4 (0.9)
	A <sup>2)</sup>	889038	889051		11 (0.4331)	
	B <sup>2)</sup>	889039	889052			
	C	889040	889053			
CD 1.1/2	D	889041	889054	3 (0.1181)	10 (0.3937)	0.6 (1.3)
	A <sup>2)</sup>	887777	887799		18 (0.7087)	
	B <sup>2)</sup>	887778	887800			
	C	887779	887801			
CD 1.1/2 NPT	D	887780	887802	3 (0.1181)	16 (0.6299)	0.6 (1.3)
	A <sup>2)</sup>	889042	889055		18 (0.7087)	
	B <sup>2)</sup>	889043	889056			
	C	889044	889057			
	D	889045	889058		16 (0.6299)	

<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.





# Extinguishing technology Halocarbon agents **P21.231.360 - 2**

## Nozzle Halocarbon agents

### Nozzles type CD, VSN 200

#### Technical data

Type .....CD  
 Medium .....HFC-227ea with nitrogen pressure charging  
 Connection thread Rp .....acc. to EN 10226  
 NPT .....acc. to ANSI/ASME B1.20.1  
 Gradation of the bore hole diameters  $\phi d$  .....in 0.1 mm steps  
 Coverage area, corage height .....see design manual  
 Working pressure:  
 .....min. 9.6 bar (139 psi), max. 60 bar (870 psi)  
 UL / ULC / FM .....min. 9 bar (131 psi), max. 60 bar (870 psi)  
 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)  
 Required storage pressure in extinguishing agent container  
 dependent on system at 21 °C (70 °F):  
 .....25 bar (360 psi), 42 bar (610 psi) oder 50 bar (725 psi)  
 Nozzle body Ms .....brass  
 XCrNi .....stainless steel  
 Installation position .....acc. to product information

#### Note

The 180° nozzle spray the extinguishing agent in a semicircle and the 360° in a full circle around the nozzle.  
 The dimensioning of the nozzle bore diameter takes place specifically for the fire extinguishing system using a calculation program suitable for the extinguishing agent.  
 Version A und B are for special use.  
 Using the DesignManager there are other limitations in the minimal and maximal nozzle bore diameters.  
 Details see DesignManager calculation.

#### Application

The nozzles CD are used as room protection nozzles in accordance with system approval in VSN 200 fire extinguishing systems using the extinguishing agent HFC-227ea (Heptafluoropropane). They are used to supply the extinguishing agent within the calculated flow time and distribute it evenly throughout the extinguishing area.

#### Marking

manufacturer / year date (MX/xx) or  
 manufacturer / year date / thread (MX/xx/NPT), type (CD),  
 version and bore diameter d (y x,x),  
 approval sign (VdS), serial number

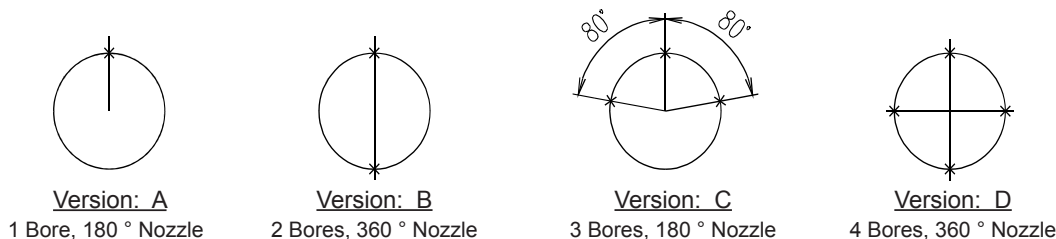
#### Included in delivery

nozzles type CD, VSN 200  
 product information nozzles CD part no. 887869

#### Not included in delivery

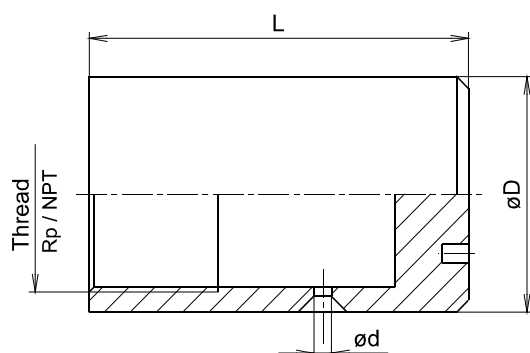
Fitting tool:  
 pin-type face spanner 20x2.9 .....88 7837  
 (for nozzles CD 1/2" and 1")  
 pin-type face spanner 35x3.9 .....88 7838  
 (for nozzles CD 1.1/2")

#### Nozzle bore hole layout



#### Dimension drawing

Dimensions in mm (inch)



Nozzle	Thread Rp / NPT	Version	$\phi d$ $\pm 0,1 (\pm 0.0039)$		L	$\phi D$
			min.	max.		
CD	1/2	A, B, C	3 (0.1181)	6 (0.2362)	55 (2.17)	28 (1.10)
		D		5 (0.1969)		
	1	A, B, C		11 (0.4331)	65 (2.56)	40 (1.58)
		D		10 (0.3937)		
	1.1/2	A, B, C		18 (0.7087)	85 (3.35)	55 (2.17)
		D		16 (0.6299)		



# Extinguishing technology Halocarbon agents **P21.231.360 - 3**

## Nozzle Halocarbon agents

### Adapter hose DN40, DN50 ISO - NPT



### Approvals

(VdS approval is not required!)



1) Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230)

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

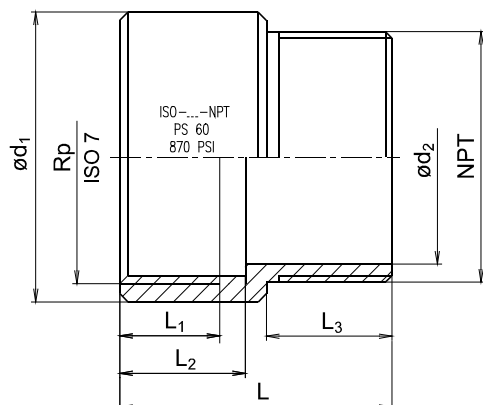
Material .....steel, galvanized acc. to EN 12329 - Fe/Zn12

### Application

To connect VSN 1230/200 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 <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>
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)



# Inert gas extinguishing technology

## Alarm device

# P21.211.410 - 1

### Makrofon



### Approvals / CE marking



G310017



LISTED



LISTED



APPROVED



0786-CPD-30126

1) Listed system covered by UL-File EX6388 (CO<sub>2</sub>) and UL-File EX26532 (Ar, VSN 200 und VSN 1230)

2) Part of the system approval (VSN 200 and VSN 1230)

### SAP designation

part no. 860050: Makrofon

### Maintenance

see product information makrofon part no. 871828

### Spare parts

Union GE 6-PSR-EDA3 .....	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.	Weight
Makrofon	860050	1.15 kg (2.54 lbs)

### Technical data

Operating medium .....	CO <sub>2</sub> , gaseous
Temperature range .....	-20 to +300 °C (-4 to +572 °F)
Working pressure .....	8 bar to 70 bar (116 psi to 1015 psi)
.....overpressure-proof up to 140 bar (2030 psi)	
Consumption at constant 70 bar .....	CO <sub>2</sub> , 147 g/min
Consumption by using a 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

### 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.

**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

### Not included in delivery

Clamping bolt for wall mounting  
silencer makrofon .....877120, P21.211.410

### Included in delivery

Makrofon with bracket (small and large)  
Product information makrofon part no. 871828



# Inert gas extinguishing technology

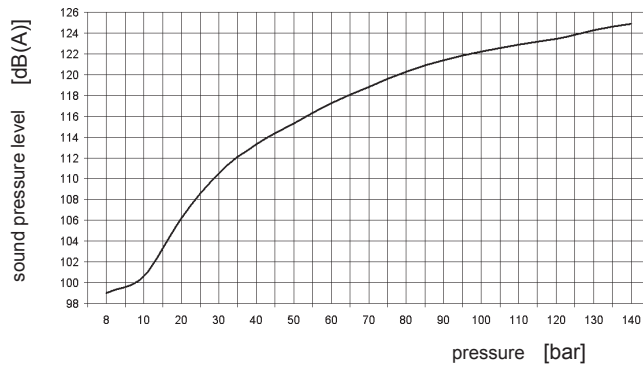
## Alarm device

# P21.211.410 - 1

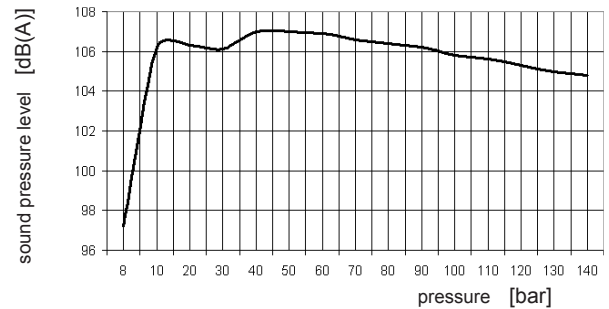
## Makrofon

### A-weighted sound pressure level over the pressure range

#### without silencer



#### with silencer

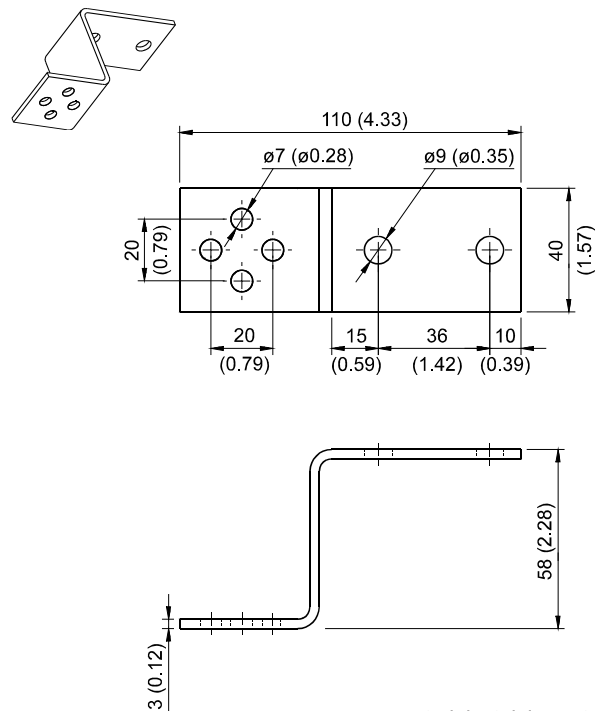
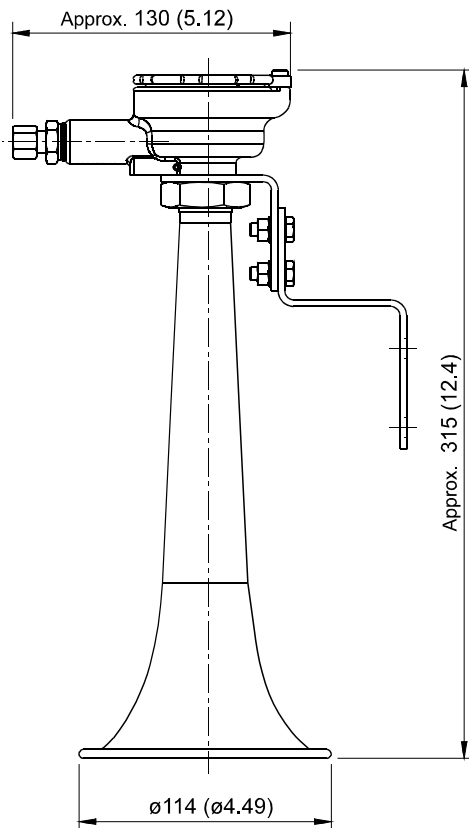


Note: The above shown curves were determined in the laboratory. Due to the influencing factors given in situ, the real values may deviate from the curves.

## Dimension drawing

Dimensions in mm (inch)

### Makrofon dimensions and bracket (large) dimensions



material: stainless steel

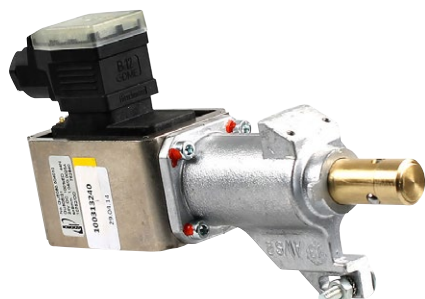


# Inert gas extinguishing technology

## Control device

# P21.211.420 - 1

### Release device EM



### Approvals



- 1) Part of the system approval (release device 24 V DC only):
- Oxeo argon fire extinguishing system HD200 (S398003) / HD300 (S303001)
  - Oxeo nitrogen fire extinguishing system HD200 (S398004) / HD300 (S303002)
  - CF Ar 200 (S312004) / CF Ar 300 (S312001)
  - CF N<sub>2</sub> 200 (S312003) / CF N<sub>2</sub> 300 (S312002)
- 2) Listed system for release device 24 V DC only covered by UL-File EX6388 (CO<sub>2</sub>) and covered by UL-File EX26532 (Ar, VSN 200 and VSN 1230)
- 3) Part of the system approval (VSN 200 and VSN 1230)

### 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	885739	

### Technical data

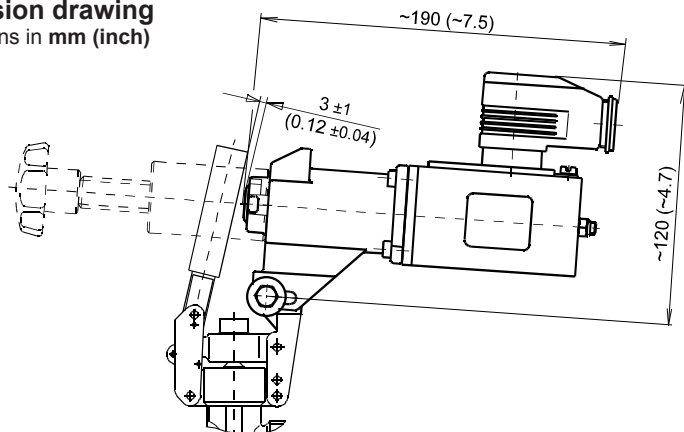
Temperature range  
 Solenoid .....-20 °C to +50 °C (-4 °F to 122 °F)  
 Magnetic force .....44 N  
 Switching duration .....100 %  
 Voltage .....24 V DC (18 - 28 V DC) / 230 V AC  
 Current .....1.04 A / 0.12 A  
 Stroke .....9 mm (0.35")  
 IP code .....IP 54  
 (by accordingly covering of the pull 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  
 - Product information card MVA LÖ .....904653

### Not included in delivery

Reset tool for release device EM .....885530, P21.211.420  
 Bracket for reset tool release device EM ...886367, P21.211.420  
 Monitoring for release device EM .....885740, P21.211.430

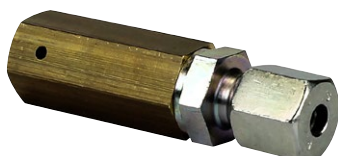


## Inert gas extinguishing technology

### Control device

## P21.211.420 - 6

### Safety device malfunction pressure SFD DN4



### Approvals



- 1) Part of the system approval:
- Argotec HD-1 (S398010) / HD-2 (S398011)
  - Oxeo argon fire extinguishing system HD200 (S398003) / HD300 (S303001)
  - Oxeo nitrogen fire extinguishing system HD200 (S398004) / HD300 (S303002)
  - CF Ar 200 (S312004) / CF Ar 300 (S312001)
  - CF N<sub>2</sub> 200 (S312003) / CF N<sub>2</sub> 300 (S312002)
  - Argotec CO<sub>2</sub> ND-1 (S398012), electrical release
  - Argotec CO<sub>2</sub> ND-1 (S398013), non-electrical release
  - Argotec N<sub>2</sub> ND-1 (S310016)
  - VSN 1230 (S314012) / VSN 200 (S313007)
- 2) Listed system covered by UL-File EX26532 (Ar, VSN 200 and VSN 1230)
- 3) Part of the system approval (VSN 200 and VSN 1230)

### SAP designation

part no. 885869: Safety device malfunction pressure SFD DN4

### Maintenance

see Product information 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 227 ea, 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

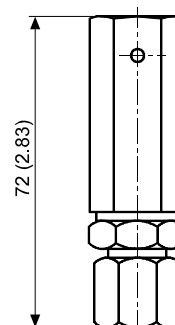
Safety device malfunction pressure SFD DN4  
 Product information safety device malfunction pressure SFD DN4 part no. 885867

### Not included in delivery

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

### Dimension drawing

Dimensions in mm (inch)





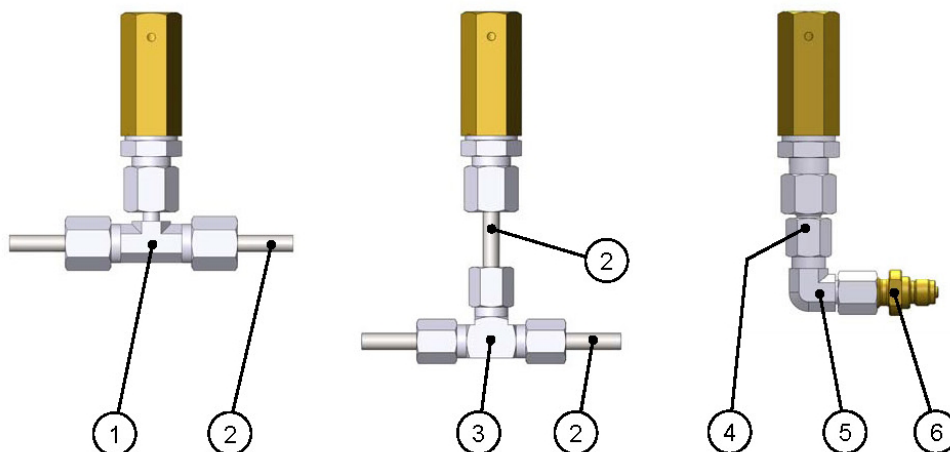
# Inert gas extinguishing technology

## Control device

**P21.211.420 - 6**

### Safety device malfunction pressure SFD DN4

#### 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 L CF .....part no. 889145
- Item 6: Adapter M12x1.5 – G1/8 .....part no. 887644  
(for release device pneumatic or pneumatic/manual)



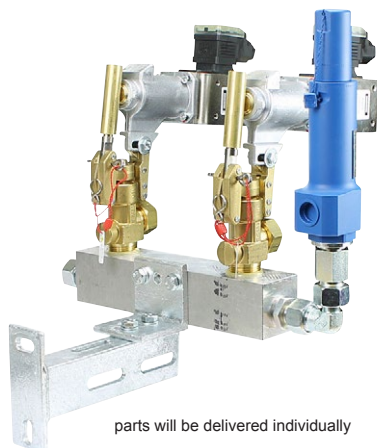


## Inert gas extinguishing technology

### Control device

## P21.211.420 - 8

### Pilot control manifold CO<sub>2</sub> - DN15



parts will be delivered individually

### Approvals



#### 1) Part of the system approval:

- Argotec HD-1 (S398010)
- Oxeo argon fire extinguishing system HD200 (S398003) / HD300 (S303001)
- Oxeo nitrogen fire extinguishing system HD200 (S398004) / HD300 (S303002)
- CF Ar 200 (S312004) / CF Ar 300 (S312001)
- CF N<sub>2</sub> 200 (S312003) / CF N<sub>2</sub> 300 (S312002)
- Argotec CO<sub>2</sub> ND-1 (S398012), electrical release
- VSN 1230 (S314012) / VSN 200 (S313007)

#### 2) Listed system covered by UL-File EX6388 (CO<sub>2</sub>) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

#### 3) Part of the system approval (VSN 200 and VSN 1230)

### SAP designation

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

### Maintenance

see product information pilot control valve 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 .....235 bar (3408 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, P21.214.341  
 Argon cylinder valve K85-20.0-S49 .....871014, P21.211.131  
 Lever - cylinder valve .....885603, P21.211.420  
 Release device EM 24 V DC .....885738, P21.211.420

### 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 and VSN 1230/200 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)  
 Product information valve DN15 part no. 876772

### 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, P21.211.430



# Inert gas extinguishing technology

## Control device

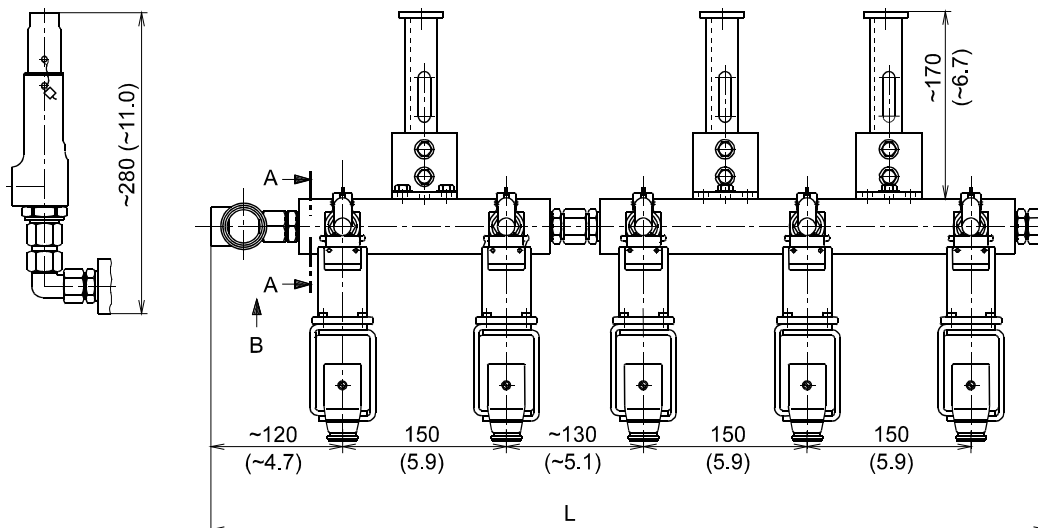
# P21.211.420 - 8

## Pilot control manifold CO<sub>2</sub> - DN15

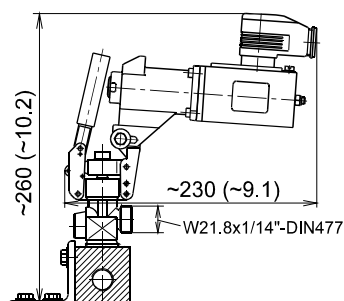
### Dimension drawing

Dimensions in mm (inch)

View: B



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)



## Inert gas extinguishing technology

### Control device

## P21.211.420 - 10

### Disable device complete



### Approvals / CE marking



1) Listed system covered by UL-File EX6388 (CO<sub>2</sub>) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

2) Part of the system approval (VSN 200 and VSN 1230)

### SAP designation

part no. 878070: Disable device complete

### Maintenance

see product information disable device complete  
part no. 878069

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

### Technical data

Operating medium .....CO<sub>2</sub>, argon (IG-01), nitrogen (IG-100),  
.....IG-55, IG-541  
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 CO<sub>2</sub>, argon, nitrogen, IG-55, IG-541 or in VSN 1230/200 fire extinguishing systems. The disable device is corresponding to the german rules BGR 134 (former version ZH 1/206) of the workmen compensations board, a non electrical disable device to lock Argotec® 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 635/40 .....131777  
Retainer shuttle valve .....873497  
2x Cap nut M 6-LA3C .....173959  
2x Progressive ring DPR 6-L/S-A3D .....208208  
Product information 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, P21.211.430  
2x Cheese-head screw DIN84-M4x25-brass .....106745  
2x Washer DIN125-B 4,3 brass .....109734



# Inert gas extinguishing technology

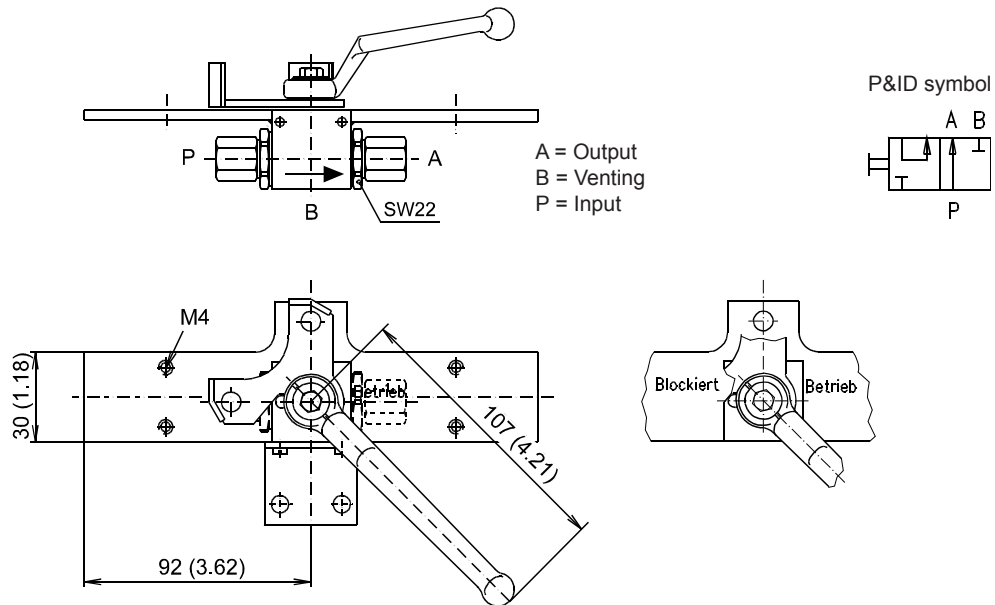
## Control device

# P21.211.420 - 10

## Disable device complete

### Dimension drawing

Dimensions in mm (inch)



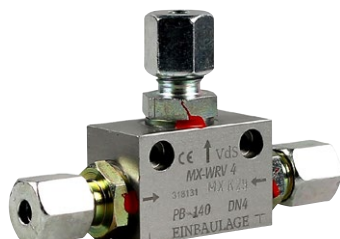


## Inert gas extinguishing technology

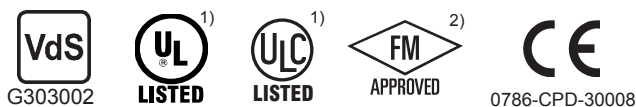
### Control device

## P21.211.420 - 11

### Shuttle non-return valves WRV DN4 and DN8



#### Approvals / CE marking



1) Listed system covered by UL-File EX6388 (CO<sub>2</sub>) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

2) Part of the system approval (VSN 200 and VSN 1230)

#### SAP designation

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

#### Maintenance

see product information 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

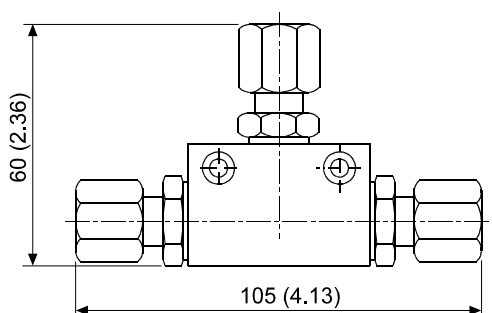
Operating medium .....CO<sub>2</sub> - gaseous  
Working pressure .....2 to 140 bar (29 to 2030 psi)  
Test pressure .....210 bar (3045 psi)  
Rate of pressure rise .....min. 3 bar/s (43,5 psi/s)  
Installation position .....feedings only horizontal  
Shuttle non-return valves .....complies with EN 12094-13  
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 fixed high pressure CO<sub>2</sub>, argon, nitrogen, IG-55 and IG-541 fire extinguishing systems or in VSN 1230/200 fire 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  
Product information shuttle non-return valve part no. 886246

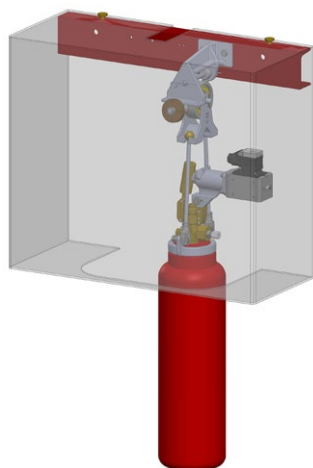


## Extinguishing technology CO<sub>2</sub> HP

### Control device CO<sub>2</sub> HP components

## P21.214.420 - 3

### Pneumatic release device PAE - CO<sub>2</sub> electrical with protective cover



Fastening material not shown

### Approvals



#### 1) Part of the system approval:

- Argotec HD-1 (S398010)
- Oxeo Argon - fire extinguishing system HD200 (S398003)
- Oxeo Argon - fire extinguishing system HD300 (S303001)
- Oxeo Nitrogen - fire extinguishing system HD200 (S398004)
- Oxeo Nitrogen - fire extinguishing system HD300 (S303002)
- Oxeo IG-55 - fire extinguishing system HD300 (S314003)
- Oxeo IG-541 - fire extinguishing system HD300 (S314002)
- CF Ar 200 (S312004) / CF Ar 300 (S312001)
- CF N<sub>2</sub> 200 (S312003) / CF N<sub>2</sub> 300 (S312002)
- VSN 1230 (S314012) / VSN 200 (S313007)

#### 2) Listed system covered by:

UL-File EX6388 (CO<sub>2</sub>) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

### SAP designation

e.g. part no. 885335: PAE-CO<sub>2</sub>-EM-4kg compl.

### Maintenance

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

Designation		Part no.	Weight approx.
Pneumatic release device PAE - CO <sub>2</sub> electrical with protective cover	4 kg	885335	28 kg (62 lbs)
	8 kg	885341	38 kg (84 lbs)

### Technical data

Operating medium .....CO<sub>2</sub> - gaseous  
 Working pressure .....140 bar (2030 psi)  
 Test pressure .....210 bar (3045 psi)  
 Amount filled .....4 kg (8.82 lbs) or 8 kg (17.64 lbs)  
 Pilot cylinder volume .....5.4 l or 10.7 l  
 Thread connection .....for precision steel pipe 6x1

### Product sheets also applying

#### Cylinder with valve 5.4 l / 10.7 l:

- CO<sub>2</sub> - Cylinder EU .....P21.214.113  
 Weighing device WE4 .....P21.214.210  
 Weight for weighing device 0.16 kg / 0.3 kg .....P21.214.210  
 Release device EM 24 V DC .....P21.211.420  
 Lever - cylinder valve EM release .....P21.211.420

### Application

The release device PAE electrical must only be used in accordance with system approval in stationary carbon dioxide, argon, nitrogen, VSN 200 and VSN 1230 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 release device PAE has a protecting cover to protect against unintentional contact. The entire release device PAE is fastened onto a bearing structural element via a U-profile.

### Included in delivery

PAE - CO<sub>2</sub> EM 4 kg .....885334  
 8 kg .....885338  
 Protective cover PAE .....885322  
 Operating instruction PAE-CO<sub>2</sub> part no. 885374  
 as well as fastenings

### Not included in delivery

Pre-assembled connection pipe ....see operating instruction PAE  
 Support weighing device PAE .....886350, P21.214.720  
 Reset tool .....885530, P21.211.420  
 Monitoring loss pneum. actuation device .....888998, P21.214.430  
 Monitoring for release device EM .....885740, P21.211.430



# Extinguishing technology CO<sub>2</sub> HP

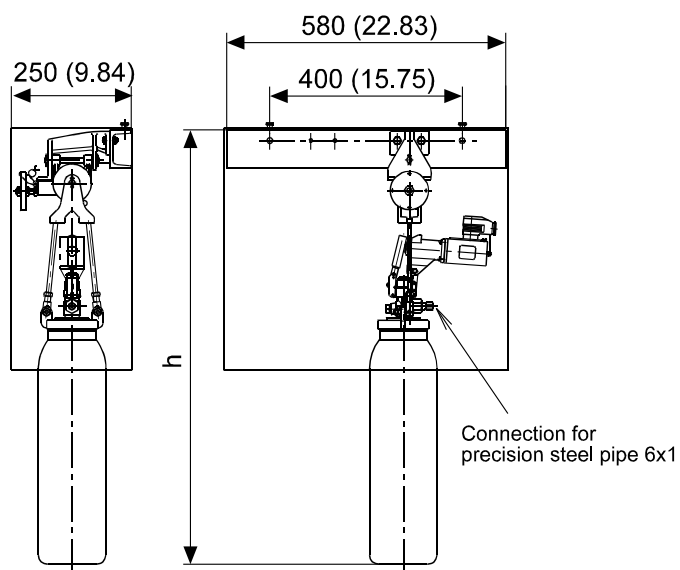
## Control device CO<sub>2</sub> HP components

# P21.214.420 - 3

## Pneumatic release device PAE - CO<sub>2</sub> electrical with protective cover

### Dimension drawing

Dimensions in mm (inch)



PAE	h approx.
4 kg	925 (36.4)
8 kg	1335 (52.6)



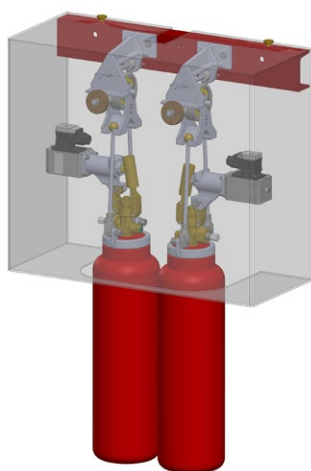


## Extinguishing technology CO<sub>2</sub> HP

### Control device CO<sub>2</sub> HP components

## P21.214.420 - 4

### Pneumatic release device PAE - CO<sub>2</sub> electrical with protective cover, with reserve



Fastening material not shown

### Approvals



#### 1) Part of the system approval:

- Argotec HD-1 (S398010)
- Oxeo Argon - fire extinguishing system HD200 (S398003)
- Oxeo Argon - fire extinguishing system HD300 (S303001)
- Oxeo Nitrogen - fire extinguishing system HD200 (S398004)
- Oxeo Nitrogen - fire extinguishing system HD300 (S303002)
- Oxeo IG-55 - fire extinguishing system HD300 (S314003)
- Oxeo IG-541 - fire extinguishing system HD300 (S314002)
- CF Ar 200 (S312004) / CF Ar 300 (S312001)
- CF N<sub>2</sub> 200 (S312003) / CF N<sub>2</sub> 300 (S312002)
- VSN 1230 (S314012) / VSN 200 (S313007)

#### 2) Listed system covered by:

UL-File EX6388 (CO<sub>2</sub>) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

### SAP designation

e.g. part no. 885337: PAE-CO<sub>2</sub>-EM-4kg reserve compl.

### Maintenance

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

Designation		Part no.	Weight approx.
Pneumatic release device PAE - CO <sub>2</sub> electrical with protective cover, with reserve	4 kg	885337	47 kg (104 lbs)
	8 kg	885343	67 kg (148 lbs)

### Technical data

Operating medium .....CO<sub>2</sub> - gaseous  
 Working pressure .....140 bar (2030 psi)  
 Test pressure .....210 bar (3045 psi)  
 Amount filled .....2x 4 kg (2x 8.82 lbs) or 2x 8 kg (2x 17.64 lbs)  
 Pilot cylinder volume .....5.4 l or 10.7 l  
 Thread connection .....for precision steel pipe 6x1

### Product sheets also applying

#### Cylinder with valve 5.4 l / 10.7 l:

- CO<sub>2</sub> - Cylinder EU .....P21.214.113  
 Weighing device WE4 .....P21.214.210  
 Weight for weighing device 0.16 kg / 0.3 kg .....P21.214.210  
 Release device EM 24 V DC .....P21.211.420  
 Lever - cylinder valve EM release .....P21.211.420

### Application

The release device PAE electrical must only be used in accordance with system approval in stationary carbon dioxide, argon, nitrogen, VSN 200 and VSN 1230 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 release device PAE has a reserve cylinder and a protecting cover to protect against unintentional contact. The entire release device PAE is fastened onto a bearing structural element via a U-profile.

### Included in delivery

PAE - CO<sub>2</sub> EM reserve 4 kg .....885336  
 8 kg .....885342  
 Protective cover PAE .....885322  
 Operating instruction PAE-CO<sub>2</sub> part no. 885374  
 as well as fastenings

### Not included in delivery

Pre-assembled connection pipe .....see operating instruction PAE  
 Support weighing device PAE .....886350, P21.214.720  
 Reset tool .....885530, P21.211.420  
 Monitoring loss pneum. actuation device .....888998, P21.214.430  
 Monitoring for release device EM .....885740, P21.211.430



Extinguishing technology CO<sub>2</sub> HP

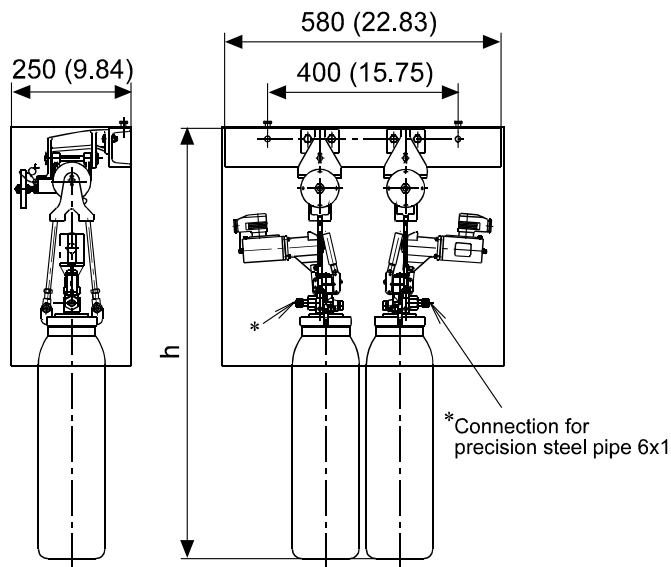
Control device CO<sub>2</sub> HP components

P21.214.420 - 4

Pneumatic release device PAE - CO<sub>2</sub>  
electrical with protective cover, with reserve

Dimension drawing

Dimensions in mm (inch)



PAE	h approx.
4 kg	925 (36.4)
8 kg	1335 (52.6)

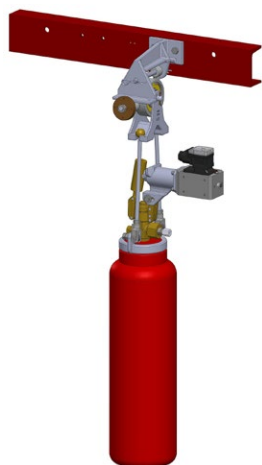


## Extinguishing technology CO<sub>2</sub> HP

### Control device CO<sub>2</sub> HP components

## P21.214.420 - 5

### Pneumatic release device PAE - CO<sub>2</sub> electrical without protective cover



Fastening material not shown

### Approvals



#### 1) Part of the system approval:

- Argotec HD-1 (S398010)
- Oxeo Argon - fire extinguishing system HD200 (S398003)
- Oxeo Argon - fire extinguishing system HD300 (S303001)
- Oxeo Nitrogen - fire extinguishing system HD200 (S398004)
- Oxeo Nitrogen - fire extinguishing system HD300 (S303002)
- Oxeo IG-55 - fire extinguishing system HD300 (S314003)
- Oxeo IG-541 - fire extinguishing system HD300 (S314002)
- CF Ar 200 (S312004) / CF Ar 300 (S312001)
- CF N<sub>2</sub> 200 (S312003) / CF N<sub>2</sub> 300 (S312002)
- VSN 1230 (S314012) / VSN 200 (S313007)

#### 2) Listed system covered by:

UL-File EX6388 (CO<sub>2</sub>) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

### SAP designation

e.g. part no. 885334: PAE-CO<sub>2</sub>-EM-4kg

### Maintenance

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

Designation	Part no.	Weight approx.
Pneumatic release device PAE - CO <sub>2</sub> electrical without protective cover	4 kg	885334
	8 kg	885338
		24 kg (53 lbs)
		34 kg (75 lbs)

### Technical data

Operating medium	CO <sub>2</sub> - gaseous
Working pressure	140 bar (2030 psi)
Test pressure	210 bar (3045 psi)
Amount filled	4 kg (8.82 lbs) or 8 kg (17.64 lbs)
Pilot cylinder volume	5.4 l or 10.7 l
Thread connection	for precision steel pipe 6x1

### Product sheets also applying

#### Cylinder with valve 5.4 l / 10.7 l:

- CO <sub>2</sub> - Cylinder EU	P21.214.113
Weighing device WE4	P21.214.210
Weight for weighing device 0.16 kg / 0.3 kg	P21.214.210
Release device EM 24 V DC	P21.211.420
Lever - cylinder valve EM release	P21.211.420

### Application

The release device PAE electrical must only be used in accordance with system approval in stationary carbon dioxide, argon, nitrogen, VSN 200 and VSN 1230 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 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

PAE - CO <sub>2</sub> EM 4 kg	885334
8 kg	885338

Operating instruction PAE-CO<sub>2</sub> part no. 885374  
as well as fastenings

### Not included in delivery

Pre-assembled connection pipe .....see operating instruction PAE  
Support weighing device PAE .....886350, P21.214.720  
Reset tool .....885530, P21.211.420  
Monitoring loss pneum. actuation device .....888998, P21.214.430  
Monitoring for release device EM .....885740, P21.211.430



# Extinguishing technology CO<sub>2</sub> HP

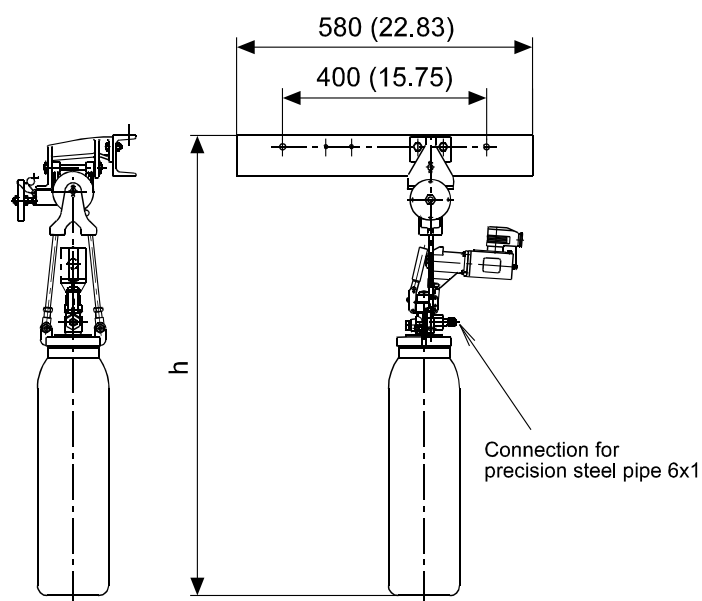
## Control device CO<sub>2</sub> HP components

# P21.214.420 - 5

Pneum. Auslöseeinrichtung PAE - CO<sub>2</sub>  
elektrisch ohne Schutzhaube

### Dimension drawing

Dimensions in mm (inch)



PAE	h approx.
4 kg	925 (36.4)
8 kg	1335 (52.6)

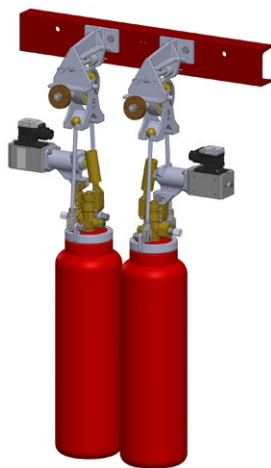


## Extinguishing technology CO<sub>2</sub> HP

### Control device CO<sub>2</sub> HP components

## P21.214.420 - 6

**Pneumatic release device PAE - CO<sub>2</sub>**  
**electrical without protective cover, with reserve**



Fastening material not shown

### Approvals



#### 1) Part of the system approval:

- Argotec HD-1 (S398010)
- Oxeo Argon - fire extinguishing system HD200 (S398003)
- Oxeo Argon - fire extinguishing system HD300 (S303001)
- Oxeo Nitrogen - fire extinguishing system HD200 (S398004)
- Oxeo Nitrogen - fire extinguishing system HD300 (S303002)
- Oxeo IG-55 - fire extinguishing system HD300 (S314003)
- Oxeo IG-541 - fire extinguishing system HD300 (S314002)
- CF Ar 200 (S312004) / CF Ar 300 (S312001)
- CF N<sub>2</sub> 200 (S312003) / CF N<sub>2</sub> 300 (S312002)
- VSN 1230 (S314012) / VSN 200 (S313007)

#### 2) Listed system covered by:

UL-File EX6388 (CO<sub>2</sub>) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

### SAP designation

e.g. part no. 885336: PAE-CO<sub>2</sub>-EM-4kg reserve

### Maintenance

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

Designation		Part no.	Weight approx.
Pneumatic release device PAE - CO <sub>2</sub> electrical without protective cover, with reserve	4 kg	885336	39 kg (86 lbs)
	8 kg	885342	59 kg (130 lbs)

### Technical data

Operating medium .....CO<sub>2</sub> - gaseous  
 Working pressure .....140 bar (2030 psi)  
 Test pressure .....210 bar (3045 psi)  
 Amount filled .....2x 4 kg (2x 8.82 lbs) or 2x 8 kg (2x 17.64 lbs)  
 Pilot cylinder volume .....5.4 l or 10.7 l  
 Thread connection .....for precision steel pipe 6x1

### Product sheets also applying

#### Cylinder with valve 5.4 l / 10.7 l:

- CO<sub>2</sub> - Cylinder EU .....P21.214.113  
 Weighing device WE4 .....P21.214.210  
 Weight for weighing device 0.16 kg / 0.3 kg .....P21.214.210  
 Release device EM 24 V DC .....P21.211.420  
 Lever - cylinder valve EM release .....P21.211.420

### Application

The release device PAE electrical must only be used in accordance with system approval in stationary carbon dioxide, argon, nitrogen, VSN 200 and VSN 1230 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 release device PAE has a reserve cylinder. 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

PAE - CO<sub>2</sub> EM reserve 4 kg .....885336  
 8 kg .....885342

Operating instruction PAE-CO<sub>2</sub> part no. 885374  
 as well as fastenings

### Not included in delivery

Pre-assembled connection pipe ....see operating instruction PAE  
 Support weighing device PAE .....886350, P21.214.720  
 Reset tool .....885530, P21.211.420  
 Monitoring loss pneum. actuation device .....888998, P21.214.430  
 Monitoring for release device EM .....885740, P21.211.430



Extinguishing technology CO<sub>2</sub> HP

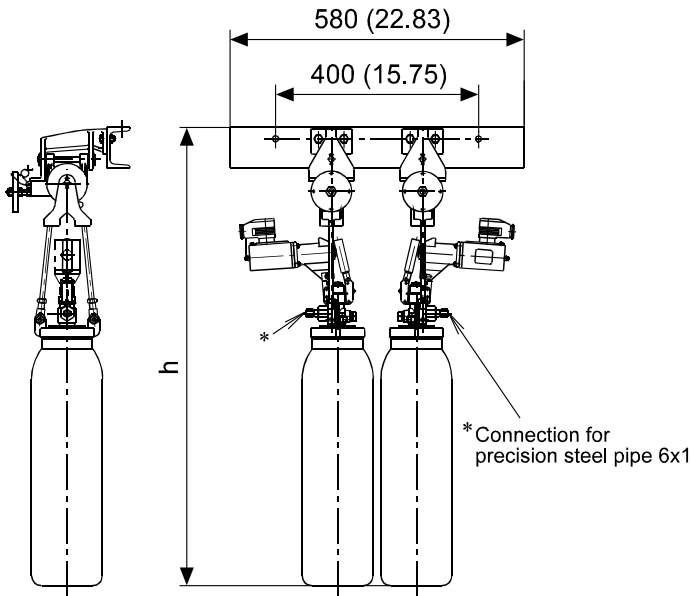
Control device CO<sub>2</sub> HP components

P21.214.420 - 6

Pneumatic release device PAE - CO<sub>2</sub>  
electrical without protective cover, with reserve

Dimension drawing

Dimensions in mm (inch)



PAE	h approx.
4 kg	925 (36.4)
8 kg	1335 (52.6)

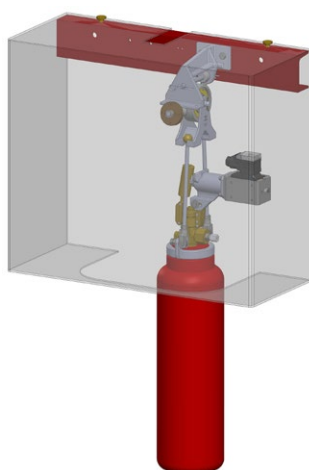


## Extinguishing technology CO<sub>2</sub> HP

### Control device CO<sub>2</sub> HP components

## P21.214.420 - 7

### Pneumatic release device PAE - CO<sub>2</sub> electrical with protective cover, FM/UL



Fastening material not shown

### Approvals



1) Part of the system approval (VSN 200 und VSN 1230)

2) Listed system covered by:  
UL-File EX6388 (CO<sub>2</sub>) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

### 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

Designation		Part no.	Amount filled	Weight approx.
Pneumatic release device PAE - CO <sub>2</sub> electrical with protective cover FM/UL	3.6 kg	911751	3.6 kg (7.9 lbs)	28 kg (62 lbs)
	7.1 kg	911759	7.1 kg (15.7 lbs)	37 kg (82 lbs)

### Technical data

Operating medium .....CO<sub>2</sub> - gaseous  
Working pressure .....140 bar (2030 psi)  
Test pressure .....210 bar (3045 psi)  
Pilot cylinder volume .....5.4 l or 10.7 l  
Thread connection .....for precision steel pipe 6x1

### Product sheets also applying

#### Cylinder with valve 5.4 l / 10.7 l:

- CO<sub>2</sub> - Cylinder UL, EU .....P21.214.113  
Weighing device WE4 .....P21.214.210  
Weight for weighing device 0.16 kg / 0.3 kg .....P21.214.210  
Release device EM 24 V DC .....P21.211.420  
Lever - cylinder valve EM release .....P21.211.420

### Application

The release device PAE electrical must only be used in accordance with system approval in stationary carbon dioxide, argon, nitrogen, VSN 200 and VSN 1230 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 release device PAE has a protecting cover to protect against unintentional contact. The entire release device PAE is fastened onto a bearing structural element via a U-profile.

### Included in delivery

PAE - CO<sub>2</sub> EM FM/UL 3.6 kg .....911750  
FM/UL 7.1 kg .....911758  
Protective cover PAE .....885322  
Adapter connection NPT .....911762  
Operating instruction PAE-CO<sub>2</sub> part no. 885374  
as well as fastenings

### Not included in delivery

Pre-assembled connection pipe ....see operating instruction PAE  
Support weighing device PAE .....886350, P21.214.720  
Reset tool .....885530, P21.211.420  
Monitoring loss pneum. actuation device .....888998, P21.214.430  
Monitoring for release device EM .....885740, P21.211.430





# Extinguishing technology CO<sub>2</sub> HP

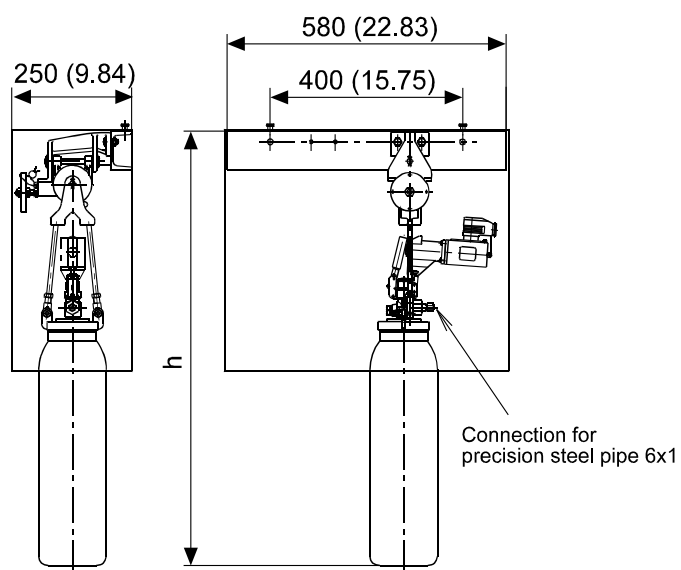
## Control device CO<sub>2</sub> HP components

# P21.214.420 - 7

**Pneumatic release device PAE - CO<sub>2</sub>**  
**electrical with protective cover, FM/UL**

### Dimension drawing

Dimensions in mm (inch)



PAE	h approx.
3.6 kg	925 (36.4)
7.1 kg	1335 (52.6)

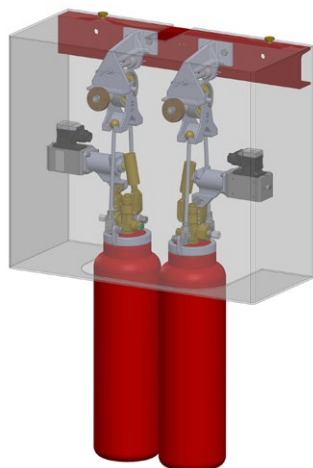


## Extinguishing technology CO<sub>2</sub> HP

### Control device CO<sub>2</sub> HP components

## P21.214.420 - 8

**Pneumatic release device PAE - CO<sub>2</sub> electr. with protective cover, with reserve, FM/UL**



Fastening material not shown

### Approvals



1) Part of the system approval (VSN 200 und VSN 1230)

2) Listed system covered by:  
UL-File EX6388 (CO<sub>2</sub>) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

### SAP designation

e.g. part no. 911753: PAE-CO<sub>2</sub>-EM-3,6kg reserve compl. FM/UL

### Maintenance

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

Designation		Part no.	Amount filled	Weight approx.
Pneumatic release device PAE - CO <sub>2</sub> electrical with protective cover, with reserve FM/UL	3.6 kg	911753	2x 3.6 kg (2x 7.9 lbs)	46 kg (101 lbs)
	7.1 kg	911761	2x 7.1 kg (2x 15.7 lbs)	61 kg (134 lbs)

### Technical data

Operating medium .....CO<sub>2</sub> - gaseous  
Working pressure .....140 bar (2030 psi)  
Test pressure .....210 bar (3045 psi)  
Pilot cylinder volume .....5.4 l or 10.7 l  
Thread connection .....for precision steel pipe 6x1

### Product sheets also applying

#### Cylinder with valve 5.4 l / 10.7 l:

- CO<sub>2</sub> - Cylinder UL, EU .....P21.214.113  
Weighing device WE4 .....P21.214.210  
Weight for weighing device 0.16 kg / 0.3 kg .....P21.214.210  
Release device EM 24 V DC .....P21.211.420  
Lever - cylinder valve EM release .....P21.211.420

### Application

The release device PAE electrical must only be used in accordance with system approval in stationary carbon dioxide, argon, nitrogen, VSN 200 and VSN 1230 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 release device PAE has a reserve cylinder and a protecting cover to protect against unintentional contact. The entire release device PAE is fastened onto a bearing structural element via a U-profile.

### Included in delivery

PAE - CO<sub>2</sub> EM reserve FM/UL 3.6 kg .....911752  
FM/UL 7.1 kg .....911760

Protective cover PAE .....885322

Adapter connection NPT .....911762

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

as well as fastenings

### Not included in delivery

Pre-assembled connection pipe ....see operating instruction PAE  
Support weighing device PAE .....886350, P21.214.720  
Reset tool .....885530, P21.211.420  
Monitoring loss pneum. actuation device .....888998, P21.214.430  
Monitoring for release device EM .....885740, P21.211.430



# Extinguishing technology CO<sub>2</sub> HP

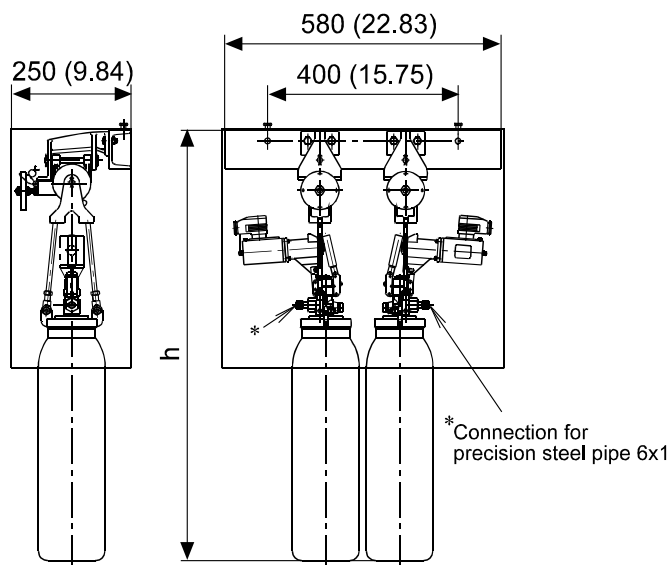
## Control device CO<sub>2</sub> HP components

# P21.214.420 - 8

**Pneumatic release device PAE - CO<sub>2</sub> electr.  
with protective cover, with reserve, FM/UL**

### Dimension drawing

Dimensions in mm (inch)



PAE	h approx.
3.6 kg	925 (36.4)
7.1 kg	1335 (52.6)

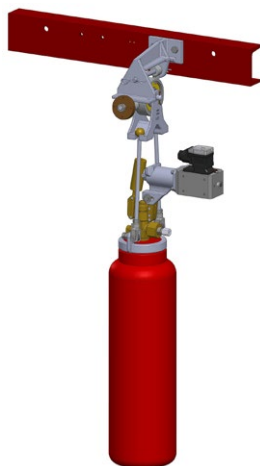


## Extinguishing technology CO<sub>2</sub> HP

### Control device CO<sub>2</sub> HP components

## P21.214.420 - 9

### Pneumatic release device PAE - CO<sub>2</sub> electrical without protective cover, FM/UL



Fastening material not shown

### Approvals



1) Part of the system approval (VSN 200 und VSN 1230)

2) Listed system covered by:  
UL-File EX6388 (CO<sub>2</sub>) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

### SAP designation

e.g. part no. 911750: PAE-CO<sub>2</sub>-EM-3.6kg FM/UL

### Maintenance

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

Designation		Part no.	Amount filled	Weight approx.
Pneumatic release device PAE - CO <sub>2</sub> electrical without protective cover FM/UL	3.6 kg	911750	3.6 kg (7.9 lbs)	24 kg (53 lbs)
	7.1 kg	911758	7.1 kg (15.7 lbs)	33 kg (73 lbs)

### Technical data

Operating medium .....CO<sub>2</sub> - gaseous  
Working pressure .....140 bar (2030 psi)  
Test pressure .....210 bar (3045 psi)  
Pilot cylinder volume .....5.4 l or 10.7 l  
Thread connection .....for precision steel pipe 6x1

### Product sheets also applying

#### Cylinder with valve 5.4 l / 10.7 l:

- CO<sub>2</sub> - Cylinder UL, EU .....P21.214.113  
Weighing device WE4 .....P21.214.210  
Weight for weighing device 0.16 kg / 0.3 kg .....P21.214.210  
Release device EM 24 V DC .....P21.211.420  
Lever - cylinder valve EM release .....P21.211.420

### Application

The release device PAE electrical must only be used in accordance with system approval in stationary carbon dioxide, argon, nitrogen, VSN 200 and VSN 1230 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 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

PAE - CO<sub>2</sub> EM FM/UL 3.6 kg .....911750  
FM/UL 7.1 kg .....911758  
Adapter connection NPT .....911762  
Operating instruction PAE-CO<sub>2</sub> part no. 885374  
as well as fastenings

### Not included in delivery

Pre-assembled connection pipe ....see operating instruction PAE  
Support weighing device PAE .....886350, P21.214.720  
Reset tool .....885530, P21.211.420  
Monitoring loss pneum. actuation device .....888998, P21.214.430  
Monitoring for release device EM .....885740, P21.211.430



Extinguishing technology CO<sub>2</sub> HP

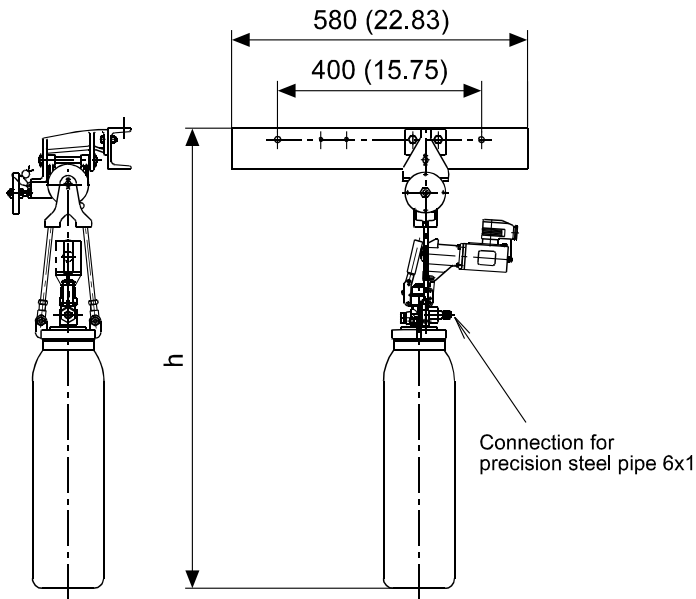
Control device CO<sub>2</sub> HP components

P21.214.420 - 9

Pneumatic release device PAE - CO<sub>2</sub>  
electrical without protective cover, FM/UL

Dimension drawing

Dimensions in mm (inch)



PAE	h approx.
3.6 kg	925 (36.4)
7.1 kg	1335 (52.6)

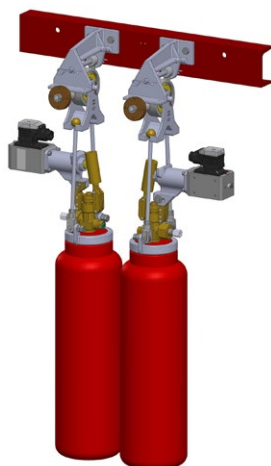


## Extinguishing technology CO<sub>2</sub> HP

### Control device CO<sub>2</sub> HP components

## P21.214.420 - 10

**Pneumatic release device PAE - CO<sub>2</sub> electr. without protective cover, with reserve, FM/UL**



Fastening material not shown

### Approvals



1) Part of the system approval (VSN 200 und VSN 1230)

2) Listed system covered by:  
UL-File EX6388 (CO<sub>2</sub>) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

### SAP designation

e.g. part no. 911752: PAE-CO<sub>2</sub>-EM-3,6kg reserve FM/UL

### Maintenance

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

Designation		Part no.	Amount filled	Weight approx.
Pneumatic release device PAE - CO <sub>2</sub> electrical without protective cover, with reserve FM/UL	3.6 kg	911752	2x 3.6 kg (2x 7.9 lbs)	38 kg (84 lbs)
	7.1 kg	911760	2x 7.1 kg (2x 15.7 lbs)	57 kg (126 lbs)

### Technical data

Operating medium .....CO<sub>2</sub> - gaseous  
Working pressure .....140 bar (2030 psi)  
Test pressure .....210 bar (3045 psi)  
Pilot cylinder volume .....5.4 l or 10.7 l  
Thread connection .....for precision steel pipe 6x1

### Product sheets also applying

Cylinder with valve 5.4 l / 10.7 l:

- CO<sub>2</sub> - Cylinder UL, EU .....P21.214.113  
Weighing device WE4 .....P21.214.210  
Weight for weighing device 0.16 kg / 0.3 kg .....P21.214.210  
Release device EM 24 V DC .....P21.211.420  
Lever - cylinder valve EM release .....P21.211.420

### Application

The release device PAE electrical must only be used in accordance with system approval in stationary carbon dioxide, argon, nitrogen, VSN 200 and VSN 1230 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 release device PAE has a reserve cylinder. 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

PAE - CO<sub>2</sub> EM reserve FM/UL 3.6 kg .....911752  
FM/UL 7.1 kg .....911760  
Adapter connection NPT .....911762  
Operating instruction PAE-CO<sub>2</sub> part no. 885374  
as well as fastenings

### Not included in delivery

Pre-assembled connection pipe .....see operating instruction PAE  
Support weighing device PAE .....886350, P21.214.720  
Reset tool .....885530, P21.211.420  
Monitoring loss pneum. actuation device .....888998, P21.214.430  
Monitoring for release device EM .....885740, P21.211.430



# Extinguishing technology CO<sub>2</sub> HP

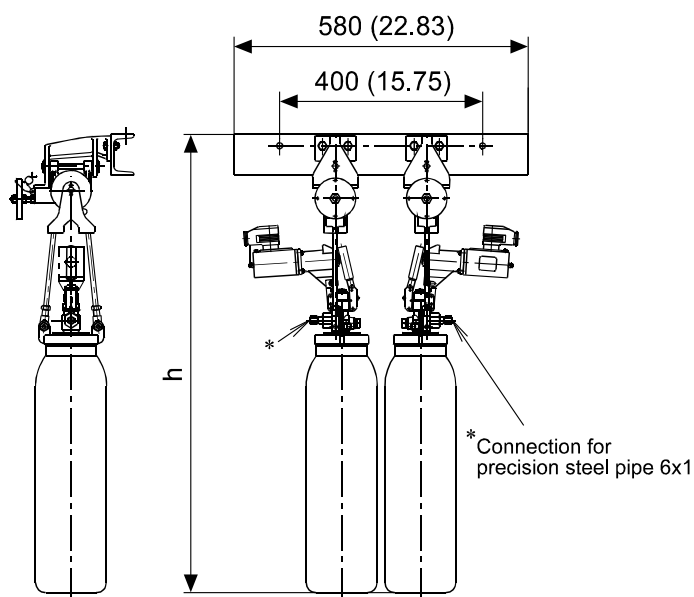
## Control device CO<sub>2</sub> HP components

**P21.214.420 - 10**

**Pneumatic release device PAE - CO<sub>2</sub> electr.  
without protective cover, with reserve, FM/UL**

### Dimension drawing

Dimensions in mm (inch)



PAE	h approx.
3.6 kg	925 (36.4)
7.1 kg	1335 (52.6)



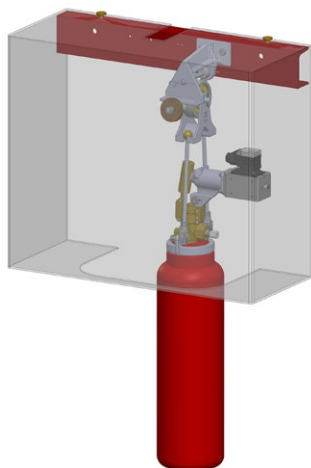


## Extinguishing technology CO<sub>2</sub> HP

### Control device CO<sub>2</sub> HP components

## P21.214.420 - 11

### Pneumatic release device PAE - CO<sub>2</sub> electrical with protective cover, DOT FM/UL



Not included in delivery: Cylinder with valve  
Fastening material not shown

#### Approvals



1) Part of the system approval (VSN 200 und VSN 1230)

2) Listed system covered by:  
UL-File EX6388 (CO<sub>2</sub>) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

#### SAP designation

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

#### Maintenance

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

Designation	Part no. <sup>3)</sup>	Amount filled	Weight approx.
Pneumatic release device PAE - CO <sub>2</sub> electrical with protective cover DOT FM/UL	911755	6.8 kg (15.0 lbs)	37 kg (82 lbs)

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

**Caution:** It is not allowed to transport filled steel cylinder (DOT) in Europe

#### Technical data

Operating medium .....CO<sub>2</sub> - gaseous  
Working pressure .....140 bar (2030 psi)  
Test pressure .....210 bar (3045 psi)  
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 .....P21.214.210  
Weight for weighing device 0.16 kg / 0.3 kg .....P21.214.210  
Release device EM 24 V DC .....P21.211.420  
Lever - cylinder valve EM release .....P21.211.420

#### Application

The release device PAE electrical must only be used in accordance with system approval in stationary carbon dioxide, argon, nitrogen, VSN 200 and VSN 1230 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.

The release device PAE has a protecting cover to protect against unintentional contact. The entire release device PAE is fastened onto a bearing structural element via a U-profile.

#### Included in delivery

PAE - CO<sub>2</sub> EM DOT FM/UL 6.8 kg .....911754  
Protective cover PAE .....885322  
Adapter connection NPT .....911762  
Operating instruction PAE-CO<sub>2</sub> part no. 885374  
as well as fastenings

#### Not included in delivery

Cylinder with valve 10.7 l:

- CO<sub>2</sub> - Cylinder DOT - UL .....  
Pre-assembled connection pipe ....see operating instruction PAE  
Support weighing device PAE .....886350, P21.214.720  
Reset tool .....885530, P21.211.420  
Monitoring loss pneum. actuation device .....888998, P21.214.430  
Monitoring for release device EM .....885740, P21.211.430



Extinguishing technology CO<sub>2</sub> HP

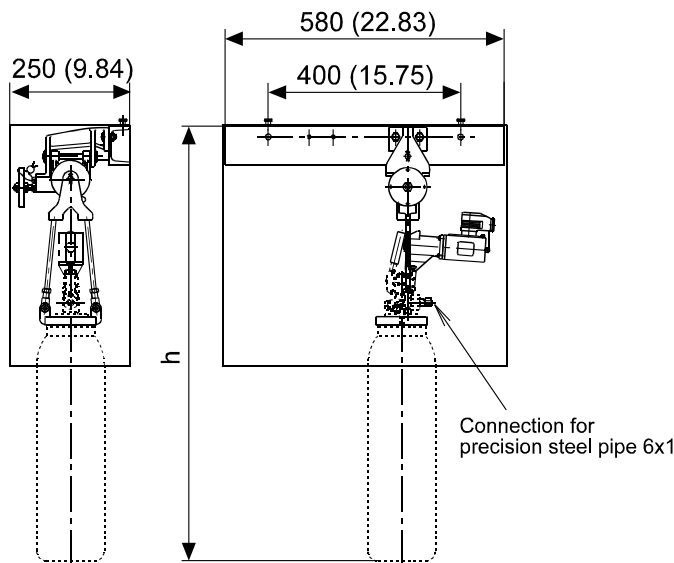
Control device CO<sub>2</sub> HP components

P21.214.420 - 11

Pneumatic release device PAE - CO<sub>2</sub>  
electrical with protective cover, DOT FM/UL

Dimension drawing

Dimensions in mm (inch)



PAE	h approx.
6.8 kg	1335 (52.6)

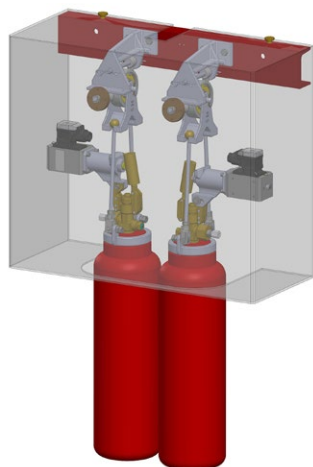


## Extinguishing technology CO<sub>2</sub> HP

### Control device CO<sub>2</sub> HP components

## P21.214.420 - 12

**Pneumatic release device PAE - CO<sub>2</sub> electr. with protective cover, with reserve, DOT FM/UL**



Not included in delivery: Cylinder with valve  
Fastening material not shown

### Approvals



1) Part of the system approval (VSN 200 und VSN 1230)

2) Listed system covered by:  
UL-File EX6388 (CO<sub>2</sub>) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

### SAP designation

part no. 911757: PAE-CO<sub>2</sub>-EM-6,8kg reserve compl. DOT FM/UL

### Maintenance

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

Designation	Part no. <sup>3)</sup>	Amount filled	Weight approx.
Pneumatic release device PAE - CO <sub>2</sub> electrical with protective cover, with reserve DOT FM/UL	911757	6.8 kg (15.0 lbs)	61 kg (134 lbs)

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

**Caution:** It is not allowed to transport filled steel cylinder (DOT) in Europe

### Technical data

Operating medium .....CO<sub>2</sub> - gaseous  
Working pressure .....140 bar (2030 psi)  
Test pressure .....210 bar (3045 psi)  
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 .....P21.214.210  
Weight for weighing device 0.16 kg / 0.3 kg .....P21.214.210  
Release device EM 24 V DC .....P21.211.420  
Lever - cylinder valve EM release .....P21.211.420

### Application

The release device PAE electrical must only be used in accordance with system approval in stationary carbon dioxide, argon, nitrogen, VSN 200 and VSN 1230 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.

The release device PAE has a reserve cylinder and a protecting cover to protect against unintentional contact. The entire release device PAE is fastened onto a bearing structural element via a U-profile.

### Included in delivery

PAE - CO<sub>2</sub> EM DOT FM/UL 6.8 kg .....911754  
Protective cover PAE .....885322  
Adapter connection NPT .....911762  
Operating instruction PAE-CO<sub>2</sub> part no. 885374  
as well as fastenings

### Not included in delivery

Cylinder with valve 10.7 l:

- CO<sub>2</sub> - Cylinder DOT - UL .....  
Pre-assembled connection pipe ....see operating instruction PAE  
Support weighing device PAE .....886350, P21.214.720  
Reset tool .....885530, P21.211.420  
Monitoring loss pneum. actuation device .....888998, P21.214.430  
Monitoring for release device EM .....885740, P21.211.430



Extinguishing technology CO<sub>2</sub> HP

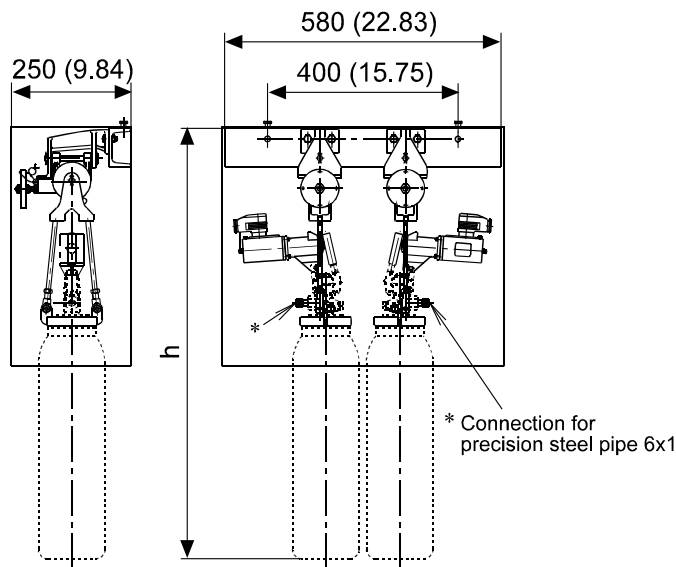
Control device CO<sub>2</sub> HP components

P21.214.420 - 12

Pneumatic release device PAE - CO<sub>2</sub> electr.  
with protective cover, with reserve, DOT FM/UL

Dimension drawing

Dimensions in mm (inch)



PAE	h approx.
6.8 kg	1335 (52.6)

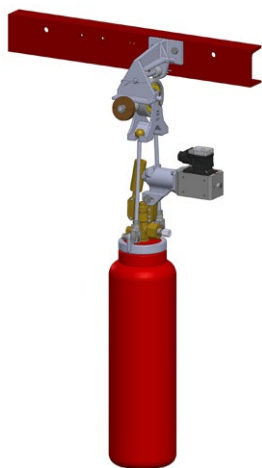


## Extinguishing technology CO<sub>2</sub> HP

### Control device CO<sub>2</sub> HP components

## P21.214.420 - 13

**Pneumatic release device PAE - CO<sub>2</sub>**  
electrical without protective cover, DOT FM/UL



Not included in delivery: Cylinder with valve  
Fastening material not shown

### Approvals



1) Part of the system approval (VSN 200 und VSN 1230)

2) Listed system covered by:  
UL-File EX6388 (CO<sub>2</sub>) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

### SAP designation

part no. 911754: PAE-CO<sub>2</sub>-EM-6.8kg DOT FM/UL

### Maintenance

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

Designation	Part no. <sup>3)</sup>	Amount filled	Weight approx.
Pneumatic release device PAE - CO <sub>2</sub> electrical without protective cover DOT FM/UL	911754	6.8 kg (15.0 lbs)	33 kg (73 lbs)

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

**Caution:** It is not allowed to transport filled steel cylinder (DOT) in Europe

### Technical data

Operating medium .....CO<sub>2</sub> - gaseous  
Working pressure .....140 bar (2030 psi)  
Test pressure .....210 bar (3045 psi)  
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 .....P21.214.210  
Weight for weighing device 0.16 kg / 0.3 kg .....P21.214.210  
Release device EM 24 V DC .....P21.211.420  
Lever - cylinder valve EM release .....P21.211.420

### Application

The release device PAE electrical must only be used in accordance with system approval in stationary carbon dioxide, argon, nitrogen, VSN 200 and VSN 1230 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. 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

PAE - CO<sub>2</sub> EM DOT FM/UL 6.8 kg .....911754  
Adapter connection NPT .....911762  
Operating instruction PAE-CO<sub>2</sub> part no. 885374  
as well as fastenings

### Not included in delivery

Cylinder with valve 10.7 l:

- CO<sub>2</sub> - Cylinder DOT - UL .....  
Pre-assembled connection pipe ....see operating instruction PAE  
Support weighing device PAE .....886350, P21.214.720  
Reset tool .....885530, P21.211.420  
Monitoring loss pneum. actuation device .....888998, P21.214.430  
Monitoring for release device EM .....885740, P21.211.430



Extinguishing technology CO<sub>2</sub> HP

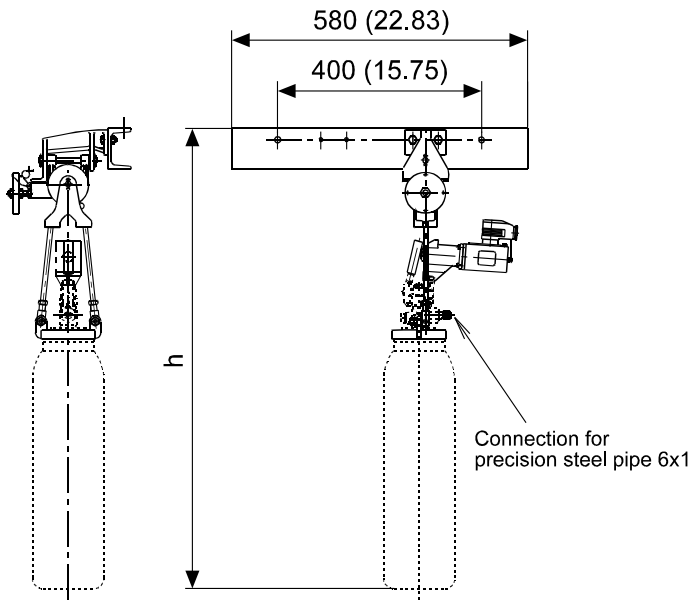
P21.214.420 - 13

Control device CO<sub>2</sub> HP components

Pneumatic release device PAE - CO<sub>2</sub>  
electrical without protective cover, DOT FM/UL

Dimension drawing

Dimensions in mm (inch)



PAE	h approx.
6.8 kg	1335 (52.6)

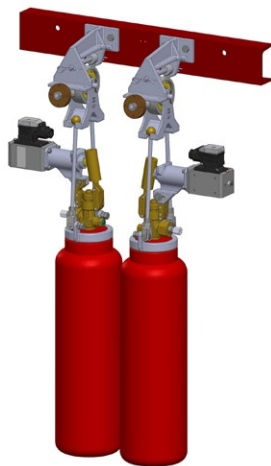


## Extinguishing technology CO<sub>2</sub> HP

### Control device CO<sub>2</sub> HP components

## P21.214.420 - 14

**Pneumatic release device PAE - CO<sub>2</sub> electr. without protective cover, with reserve, DOT FM/UL**



Not included in delivery: Cylinder with valve  
Fastening material not shown

### Approvals



1) Part of the system approval (VSN 200 und VSN 1230)

2) Listed system covered by:  
UL-File EX6388 (CO<sub>2</sub>) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

### SAP designation

part no. 911752: PAE-CO<sub>2</sub>-EM-6,8kg reserve DOT FM/UL

### Maintenance

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

Designation	Part no. <sup>3)</sup>	Amount filled	Weight approx.
Pneumatic release device PAE - CO <sub>2</sub> electrical without protective cover, with reserve DOT FM/UL	911756	6.8 kg (15.0 lbs)	57 kg (126 lbs)

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

**Caution:** It is not allowed to transport filled steel cylinder (DOT) in Europe

### Technical data

Operating medium .....CO<sub>2</sub> - gaseous  
Working pressure ..... 140 bar (2030 psi)  
Test pressure ..... 210 bar (3045 psi)  
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 ..... P21.214.210  
Weight for weighing device 0.16 kg / 0.3 kg ..... P21.214.210  
Release device EM 24 V DC ..... P21.211.420  
Lever - cylinder valve EM release ..... P21.211.420

### Application

The release device PAE electrical must only be used in accordance with system approval in stationary carbon dioxide, argon, nitrogen, VSN 200 and VSN 1230 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.

The release device PAE has a reserve cylinder. 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

PAE - CO<sub>2</sub> EM DOT FM/UL 6.8 kg ..... 911754  
Adapter connection NPT ..... 911762  
Operating instruction PAE-CO<sub>2</sub> part no. 885374  
as well as fastenings

### Not included in delivery

#### Cylinder with valve 10.7 l:

- CO<sub>2</sub> - Cylinder DOT - UL .....  
Pre-assembled connection pipe .... see operating instruction PAE  
Support weighing device PAE ..... 886350, P21.214.720  
Reset tool ..... 885530, P21.211.420  
Monitoring loss pneum. actuation device ..... 888998, P21.214.430  
Monitoring for release device EM ..... 885740, P21.211.430





Extinguishing technology CO<sub>2</sub> HP

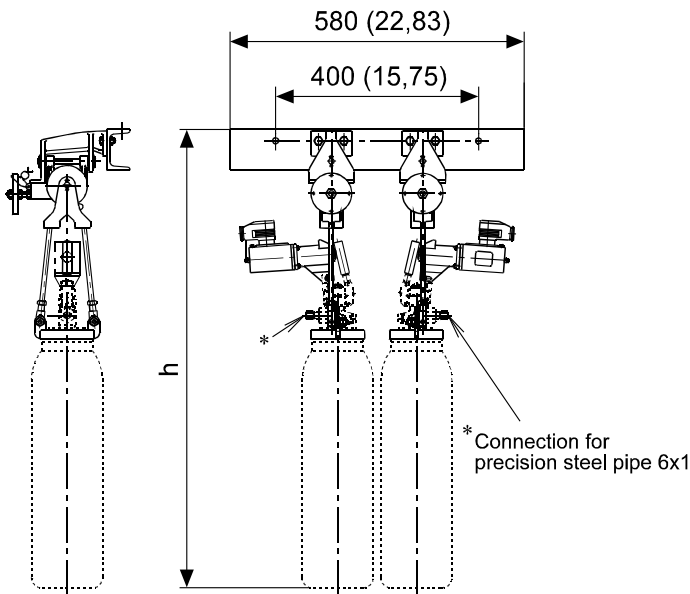
Control device CO<sub>2</sub> HP components

P21.214.420 - 14

Pneumatic release device PAE - CO<sub>2</sub> electr.  
without protective cover, with reserve, DOT FM/UL

Dimension drawing

Dimensions in mm (inch)



PAE	h approx.
6.8 kg	1335 (52.6)



# Extinguishing technology Halocarbon agents **P21.231.430 - 1**

## Monitoring device Halocarbon agents

### Contact pressure gauge VSN1230/200

### Approvals



0786-CPD-30095

### SAP designation

e.g. part no. 888604: Contact pressure gauge 40bar / 22.5 (NC)

### 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 20 °C (68 °F) bar (psi)	Switching mode <sup>2)</sup>	Part no.	Pressure range / switching point bar (psi)	Max. operating pressure at 50 °C (122 °F) bar (psi)	Tolerance acc. to EN 12094-10 bar (psi)	Weight kg (lbs)
25 (363)	break contact (NC)	888604	40 / 22.5 (580 / 326)	35 (508)	± 0.9 (± 13)	0.17 (0.37)
42 (609)		888606	60 / 38 (870 / 551)	53 (767)	± 1.3 (± 19)	0.16 (0.35)
50 (725)		888607	60 / 45 (870 / 653)	60 (870)	± 1.3 (± 19)	0.16 (0.35)
25 (363)	make contact (NO)	888608	40 / 22.5 (580 / 326)	35 (508)	± 0.9 (± 13)	0.17 (0.37)
42 (609)		888610	60 / 38 (870 / 551)	53 (767)	± 1.3 (± 19)	0.16 (0.35)
50 (725)		888611	60 / 45 (870 / 653)	60 (870)	± 1.3 (± 19)	0.17 (0.37)
<b>Caution special type:</b> Contact pressure gauge without VdS system approval for VSN 200/1230 fire extinguishing system						
42 (609)	break contact (NC)	888605	60 / 36 (870 / 522)	53 (767)	± 1.3 (± 19)	0.16 (0.35)
	make contact (NO)	888609				0.17 (0.37)

<sup>1)</sup> The pressure gauge may be used only in the temperature range from +5 °C to +25 °C (41 °F to 77 °F) at the side of the extinguishing agent cylinders to be monitored.

#### <sup>2)</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>3)</sup> Note for temperature ranges

Observe a working temperature from +5 °C to +25 °C (41 °F to 77 °F) to receive an indication of loss of extinguishing agent in accordance with VdS / CE.

The mechanical, electrical function of the contact pressure gauge is guaranteed within the product temperature ranges from -40 °C up to +60 °C (-40 °F to 140 °F).

### Technical data

Type .....PGS 21.050  
 Pressure medium .....FK-5-1-12, HFC-227ea  
 Nominal size .....50  
 Accuracy class .....1.6  
 Temperature ranges: <sup>3)</sup>  
 Working temperature .....+5 °C to +25 °C (41 °F to 77 °F)  
 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  
 Directives, Standards ..EN837-1, VdS CEA 4030, EN 12094-10  
 CE conformity ....acc. to Construction Products Regulation (EU)  
 .....No. 305/2011

### Marking

manufacturer code (WIK), bar, accuracy class (1,6), type designation (PGS 21.050), switch pressure via set point on dial, year (WW YY), approval sign (VdS, CE)



# Extinguishing technology Halocarbon agents **P21.231.430 - 1**

## Monitoring device Halocarbon agents

### Contact pressure gauge VSN1230/200

#### Electrical data

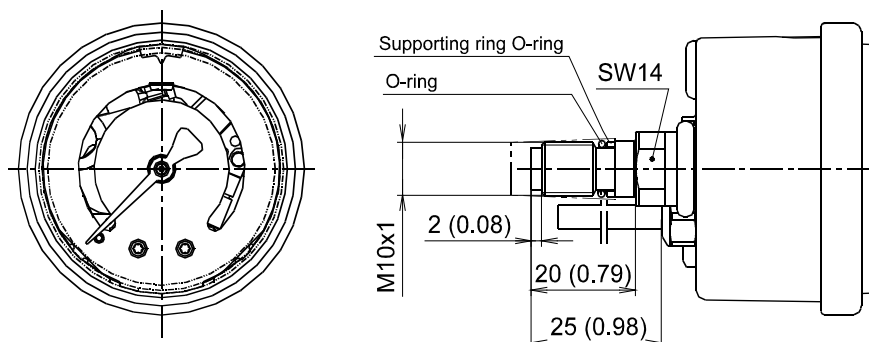
Switching voltage .....4.5 – 24 V DC / VAC  
 Switching current .....5 – 100 mA  
 Contact load .....max. 3 W, dry contact  
 Conducting wire .....two-core, 100 cm (39.37")  
 Cross-section of conducting wire ...0.14 mm<sup>2</sup> (0.000217 square inch),  
 .....AWG 26

#### Design of instrument dial

Material .....aluminium, white  
 Scale .....dual scale (bar / psi)  
 Indicating range .....0 to pressure range  
 Indicating range marked:  
 - in red .....0 to switching point  
 - in green .....switching point to max. working pressure  
 .....at 50 °C (122 °F)

#### Dimension drawing

Dimensions in mm (inch)





# Extinguishing technology Halocarbon agents **P21.231.430 - 4**

## Monitoring device Halocarbon agents

### Contact pressure gauge UL, VSN 200



### Approvals



1) Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230)

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.

### Technical data

Pressure medium .....HFC-227ea, N<sub>2</sub>  
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)  
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

### 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



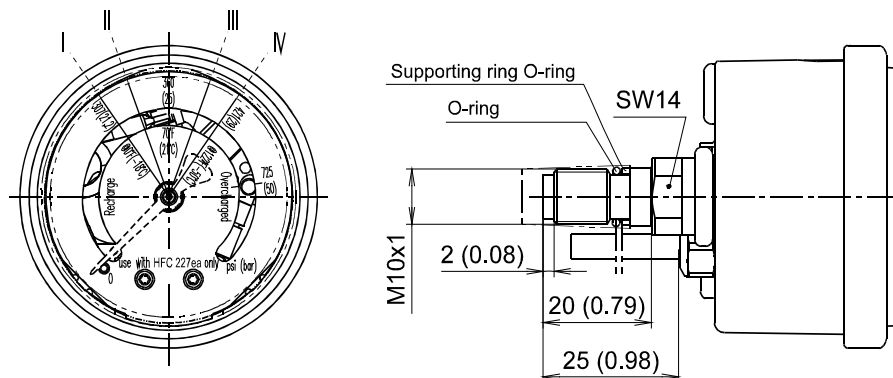
# Extinguishing technology Halocarbon agents **P21.231.430 - 4**

## Monitoring device Halocarbon agents

### Contact pressure gauge UL, VSN 200

#### 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 l (25)   70°F   (21°C)	290 (20) @0°F (-18°C)	493 (34) @122°F (50°C)
610 (42)	480-549	549-671	671-767	610 l (42)   70°F   (21°C)	480 (33) @0°F (-18°C)	767 (53) @122°F (50°C)
725 (50)	587-653	653-798	798-864	725 l (50)   70°F   (21°C)	587 (40) @0°F (-18°C)	864 (60) @122°F (50°C)



# Extinguishing technology Halocarbon agents **P21.231.430 - 5**

## Monitoring device Halocarbon agents

### Pressure gauge UL, VSN 200



### Approvals



<sup>1)</sup> Listed system covered by UL-file EX26532 (Ar, VSN 200 and VSN 1230)

<sup>2)</sup> 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



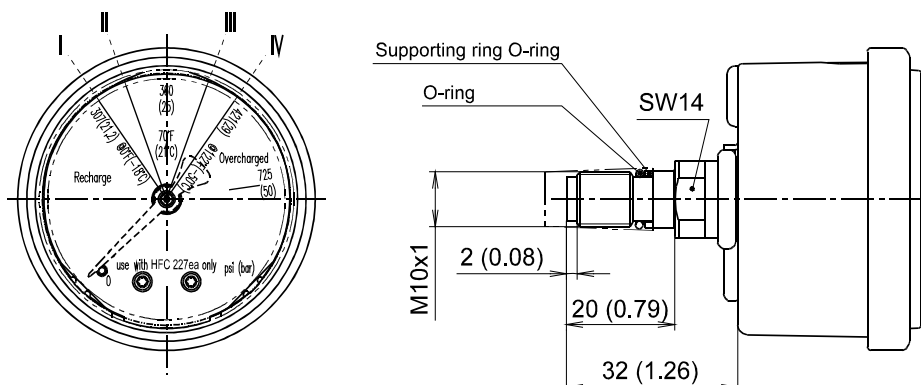
## Extinguishing technology Halocarbon agents **P21.231.430 - 5**

### Monitoring device Halocarbon agents

#### Pressure gauge UL, VSN 200

#### 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)





# Inert gas extinguishing technology

## Monitoring device

# P21.211.430 - 4

### Limit switch ZS 256-11z



### Approvals



<sup>1)</sup> Listed system covered by UL-File EX26532 (Ar, VSN 200 and VSN 1230)

<sup>2)</sup> Part of the system approval (VSN 200 and VSN 1230)

### SAP designation

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

### Maintenance

Functional check within the framework of system-specific functional test

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

### Technical data

Type .....ZS 256-11z-M20-2219  
Housing .....thermopl. glass fiber concentrated, self-quenching  
IP code .....IP67  
Contact material .....silver  
Contacts .....1 NC, 1 NO  
.....galvanically isolated contact bridges  
Operating temperature .....-30 °C to +80 °C (-22 °F to 176 °F)  
Switch system .....spring control with  
.....twofold brake contacts, forced opener  
Nominal isolation voltage .....500 V  
Permanent current .....10 A

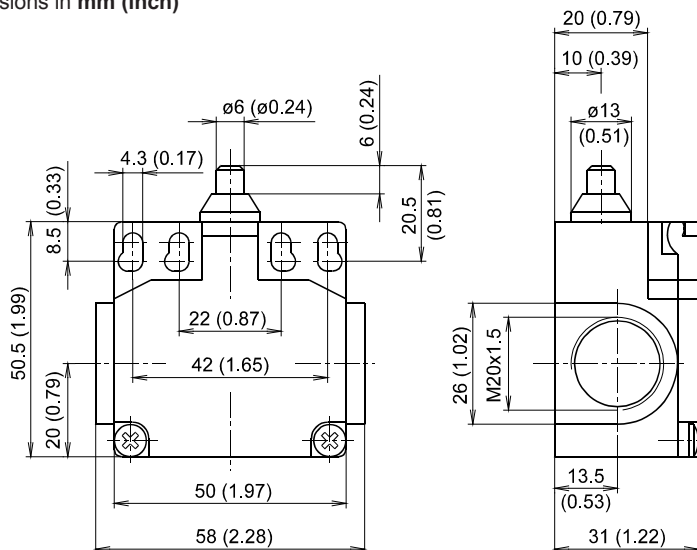
Nominal operation current / voltage .....4 A (230 V AC);  
.....2,5 A (400 V AC); 1 A (500 V AC)  
Short-circuit protection .....10 A slow blow, 16 A quick blow  
Actuation force .....min. 9 N  
Mechn. durability .....20x10<sup>6</sup> switching cycles  
Operation speed .....max. 1 m/s, min. 0,01 m/s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

### Application

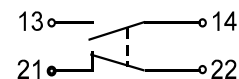
Pneumatic timer PV-3-BND,  
Control device pneum. SEP-2 and SEP-2-B.

### Dimension drawing

Dimensions in mm (inch)



### Circuit diagram:





# Inert gas extinguishing technology

## Monitoring device

# P21.211.430 - 5

### Limit switch Typ US 432y, 2 contacts



### Approvals



<sup>1)</sup> Listed system covered by UL-File EX26532 (Ar, VSN 200 and VSN 1230)

<sup>2)</sup> Part of the system approval (VSN 200 and VSN 1230)

### SAP designation

part no. 724420: Limit switch US 432Y-M20-2352 2 contacts

### Maintenance

see mounting and wiring instructions of the manufacturer

Designation	Part no.	Weight
Limit switch type US 432y, 2 contacts	724420	0.31 kg (0.68 lbs)

### Technical data

Type .....US 432y-M20-2352  
Housing .....alloy die-cast metal, chrome dulled and varnished  
IP code .....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. 7 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

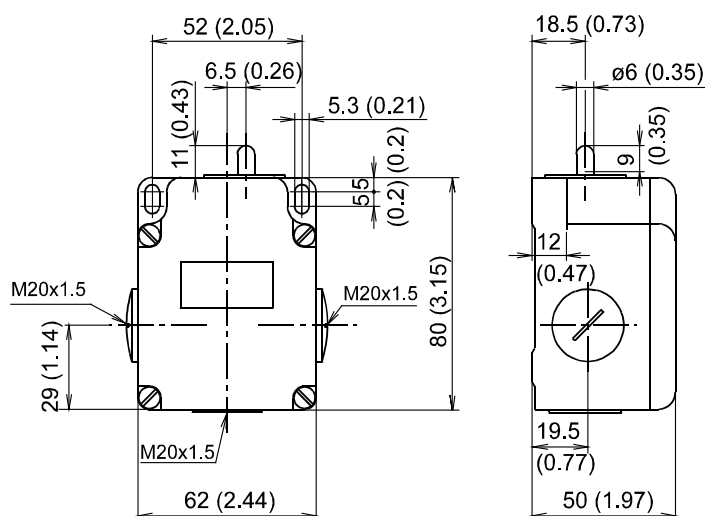
limit switch pneum. operated, manifold set, selector valve

### Included in delivery

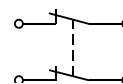
Limit switch type US 432y with mounting and wiring instructions

### 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



# Inert gas extinguishing technology

## Monitoring device

# P21.211.430 - 6

### Limit switch US 434y, 4 contacts



### Approvals



1) Listed system covered by UL-File EX26532 (Ar, VSN 200 and VSN 1230)

2) Part of the system approval (VSN 200 and VSN 1230)

### 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

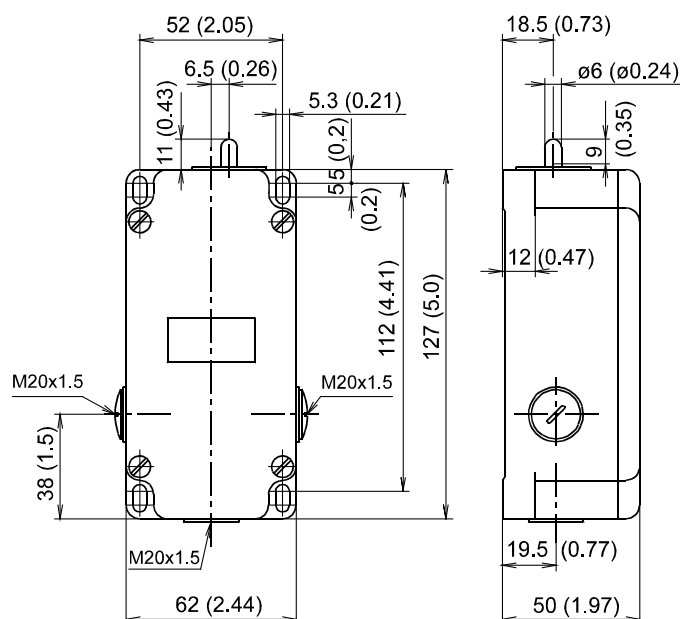
limit switch pneum. operated, manifold set, selector valve

### Included in delivery

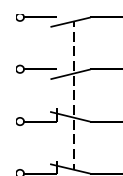
Limit switch US 434y with mounting and wiring instructions

### 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



## Inert gas extinguishing technology

### Monitoring device

## P21.211.430 - 8

### Monitoring release device EM



### Approvals



<sup>1)</sup> Listed system covered by UL-File EX26532 (Ar, VSN 200 and VSN 1230)

<sup>2)</sup> Part of the system approval (VSN 200 and VSN 1230)

### SAP designation

part no. 885740: Überwachung EM-Auslösung

### Maintenance

see product information 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 .....P21.211.430

### Included in delivery

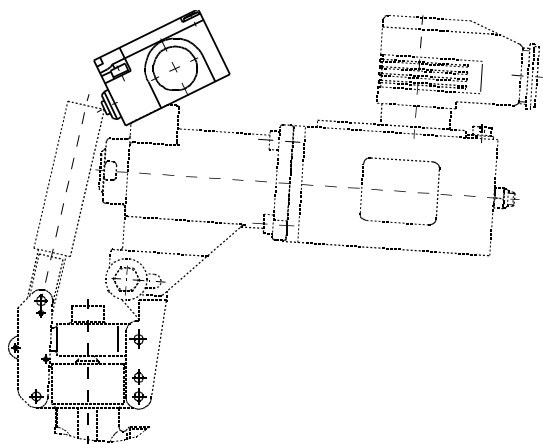
Limit switch ZS 256-11z .....828482, P21.211.430

2x Cheese-head screw DIN84-M4x25-Ms .....106745

2x Washer DIN125-B4.3-Ms .....109734

Product information monitoring EM-release .....885742

### Installations example





# Inert gas extinguishing technology

## Monitoring device

# P21.211.430 - 9

### Limit switch pneum. operated

### Approvals



#### 1) Part of the system approval:

- Argotec HD-1 (S398010) / HD-2 (S398011)
- Oxeo Argon - fire extinguishing system HD200 (S398003)
- Oxeo Argon - fire extinguishing system HD300 (S303001)
- Oxeo Nitrogen - fire extinguishing system HD200 (S398004)
- Oxeo Nitrogen - fire extinguishing system HD300 (S303002)
- CF Ar 200 (S312004) / CF Ar 300 (S312001)
- CF N<sub>2</sub> 200 (S312003) / CF N<sub>2</sub> 300 (S312002)
- Argotec CO<sub>2</sub> ND-1 (S398012), electrical release
- Argotec CO<sub>2</sub> ND-1 (S398013), non-electrical release
- Argotec N<sub>2</sub> ND-1 (S310016)

#### 2) Listed system covered by UL-File EX26532 (Ar, VSN 200 and VSN 1230)

#### 3) Part of the system approval (VSN 200 and VSN 1230)

### SAP designation

part no. 826758: Limit switch pneum. operated

### Maintenance

Functional check within the framework of system-specific functional test

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

### Application

The limit switch pneum. operated may only be used in accordance with system approval in stationary CO<sub>2</sub>, argon and nitrogen fire extinguishing systems.

### Function description

In case of fire the selector valve is released and the extinguishing line is flooded. The presence of pressure actuates the cylinder, which in turn opens or closes the floating contacts of the limit switch depending on how the contacts are set (make or break).

### Product sheets also applying

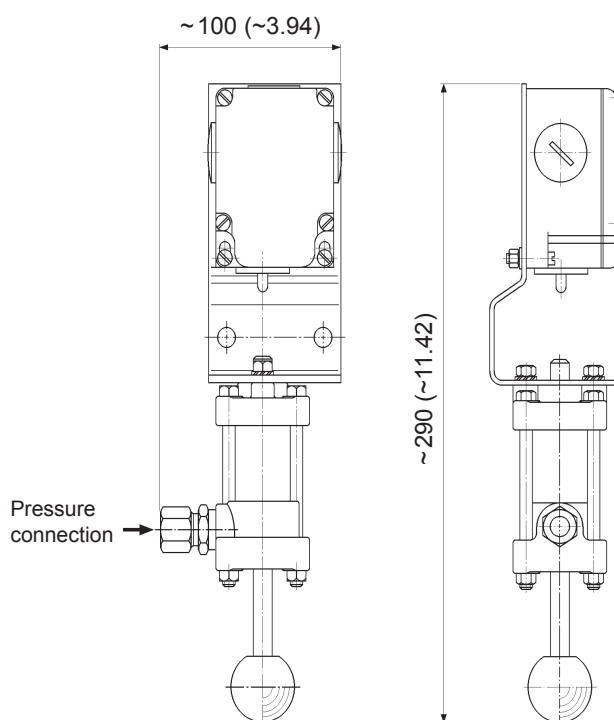
Cylinder ø25 x H30 .....P21.214.420  
Limit switch US 432y .....P21.211.430

### Included in delivery

Cylinder ø25 x H30 .....227303, P21.214.420  
Limit switch type US 432y .....724420, P21.211.430  
Support limit switch pneum. activated .....827866  
Union GE 6-PSR-EDA3C .....125578, M1-11-01  
2x Cheese-head screw DIN84-M5x25-Ms .....106915  
2x Hex. nut DIN934-M5-Ms .....108444  
2x Washer DIN125-B-5,3-Ms .....109771  
Product information limit switch pneumatic .....827740  
as well as fastening material

### Dimension drawing

Dimensions in mm (inch)





## Extinguishing technology CO<sub>2</sub> HP

### Monitoring device CO<sub>2</sub>

## P21.214.430 - 5

### Monitoring loss pneumatic activation device PAE

### Approvals



<sup>1)</sup>Listed system covered by UL-File EX26532 (Ar, VSN 200 and VSN 1230)

<sup>2)</sup>Part of the system approval (VSN 200 and VSN 1230)



### SAP designation

part no. 888998: Monitoring loss pneumatic activation

### Maintenance

see product information monitoring loss pneumatic activation device part no. 888999

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

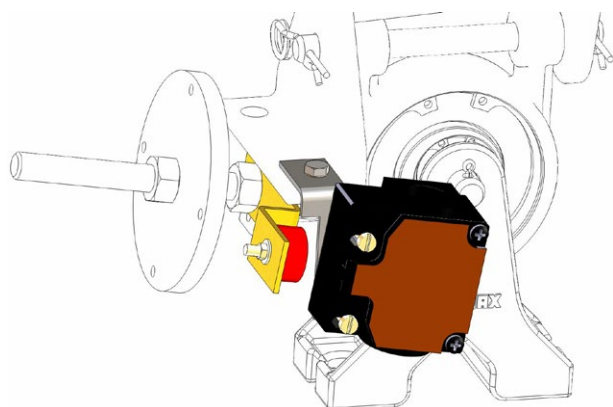
### Application

The monitoring loss pneumatic activation device may only be used in accordance with system approval in stationary CO<sub>2</sub>-, argon- and nitrogen fire 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, P21.214.430  
 Magnet bracket for ÜWA loss PAE .....876875  
 Bracket limit switch monitoring loss PAE WE4 .....888986  
 Product information monitoring loss  
 pneumatic activation device .....888999  
 as well as screws, nuts and washers

### Mounting example





## Extinguishing technology Halocarbon agents **P21.231.710 - 12**

### Accessories Halocarbon agents

#### Labels VSN 200

#### Caution! ...



#### Approvals

no approval required

#### SAP designation

e.g. part no. 915479: Sign VSN200 Caution! This area is protected by a VSN 200 fire extinguishing system Alu 210x210

#### Maintenance

maintenance-free

Text	Part no.	Weight
CAUTION! This area is protected by a VSN 200 fire extinguishing system.	915479	0.12 kg (0.26 lbs)
CAUTION! Do <u>NOT</u> enter unless automatic release is isolated.	915480	
CAUTION! Do <u>NOT</u> enter unless isolate valve is in the closed position.	915481	

#### Technical data

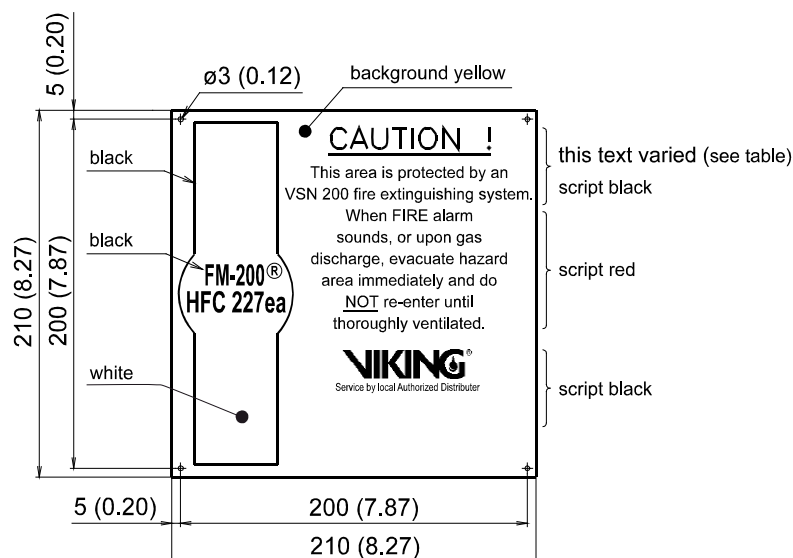
Material .....aluminium plate 1 mm (0.04") thickness  
 Script type .....Helvetica medium face  
 Company logo .....RAL 5002 - blue

#### Not included in delivery

Fastening material

#### Dimension drawing

Dimensions in mm (inch)







## Extinguishing technology Halocarbon agents **P21.231.720 - 1**

### Mounting accessories Halocarbon agents

#### Toolkit VSN 1230/200



#### Approvals

no approval required

#### SAP designation

e.g. part no. 910907: Toolkit VSN 200 / 1230 compl.

#### Maintenance

see product information:

- Toolkit VSN 1230/200 compl. part no. 912237
- Test device service part no. 888622

#### Spare parts

Sensor tip for leak detector part no. 912094  
(has to be replaced after 20 operating hours of the leak detector)

Designation	Part no.	Weight
Toolkit VSN 1230/200	910907	4.89 kg (10.77 lbs)
<b>Optional tools</b>		
Test device service pressure gauge	888051	0.65 kg (1.43 lbs)
Leak detector for halogens	910851	0.52 kg (1.15 lbs)

#### Technical data

Dimensions B x H x T .....approx. 460 x 105 x 370 mm

.....(18,1" x 4,1" x 14,6")

Material .....polypropylene

#### Application

Tollkit special prepared for installation and service of VSN 1230/200 systems

#### Content toolkit VSN 1230/200

- Torque wrench 9x12 5-50 Nm
- Pin type face wrench 35x3.9 for nozzles CD 1 ¼ - 1 ½
- Pin type face wrench 20x2.9 for nozzles CD ½ - 1
- Pin wrench adjustable D = 5 mm
- 2x Combination wrench 14 mm
- Combination T-L-Shapes wrench hex 4 mm
- Combination wrench 10 mm
- 5x Plug for pressure gauge outlet VSN 200
- 5x Plug for pilot connection G1/8 VSN 200
- 5x Adapter M12x1.5 – G1/8 VSN 200
- Insert open end wrench 9x12 10 mm
- Open end wrench 41 mm aluminum complete
- Screwdriver Pozidriv PZ1
- Insert open end wrench 9x12 14 mm
- Combination T-L-Shapes wrench hex 3 mm
- Socket 1/2" 8 mm Hex Bit / long
- Ratchet insert tool 9x12 ½"
- Tool for 2 hole nut 20x2.9 complete
- Tool for 2 hole nut 35x3.9 complete
- Insert open end wrench 9x12 46 mm complete
- Socket ½" 17 mm hexagon
- Insert open end wrench 9x12 50 mm complete
- Reset tool release device EM
- Screw reset tool VSN 200
- Mounting aid O-/supporting ring pressure gauge
- 10x Supporting ring O-ring pressure gauge VSN200
- 10x O-Ring pressure gauge VSN200

#### Optional tools

- (1) Test device service pressure gauge
- (2) Leak detector for halogens with sensor tip (3)





## Extinguishing technology CO<sub>2</sub> HP

### Assembly accessories CO<sub>2</sub>

## P21.214.720 - 2

### Support weighing device PAE

#### Approvals

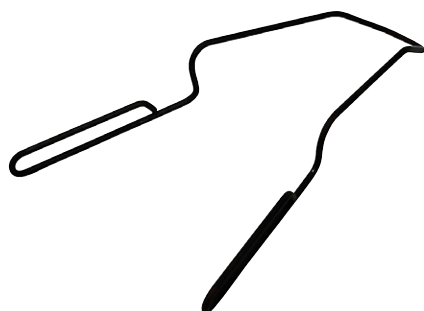
no approval required

#### 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

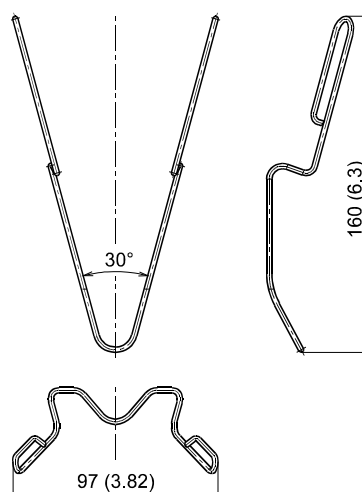
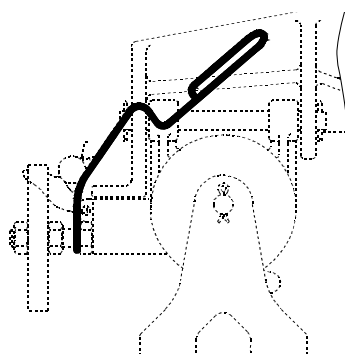
#### Dimension drawing

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









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