

VSN 1230 | Fire Extinguishing Systems

Product catalogue 2015





Version: 2015-01

Product catalogue

Gas-Based Suppression Systems

VSN 1230 Fire Extinguishing Systems

Fight fires using the chemical extinguishant FK-5-1-12

Trademark: Novec™ 1230 by 3M™

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

VSN 1230 Fire Extinguishing System P21.231.010 - 1

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CO₂ / inert gas (CF) / VSN 1230/200 P21.214.020 - 1

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Extinguishing technology Halocarbon agents **P21.231.010 - 1**

VSN 1230 Fire Extinguishing System

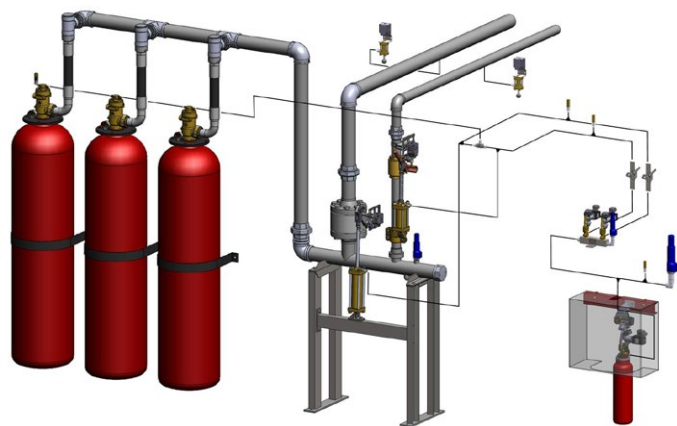


Figure: Multi-zone system

System description

The VSN 1230 fire extinguishing system with fire extinguishant Novec™ 1230 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 Novec™ 1230 has a high extinguishing effectiveness and environmental compatibility (Global Warming Potential GWP = 1, Ozone Depletion Potential ODP = 0). Further advantages are its high personal safety and the small storage volume.

Pressurisation with nitrogen

The extinguishant Novec™ 1230 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.

Approvals



Contact us for information about additional approvals and listings

The extinguishant Novec™ 1230

The extinguishant Novec™ 1230 that is used in VSN 1230 fire extinguishing systems is a liquid that looks like water, but it neither damages computers nor books.

Novec™ 1230 is chemically seen a fluorinated ketone. Since the extinguishant does not conduct electricity, it does not cause short-circuits in electronic devices. For instance computer monitor is full functioning when taking a bath in this liquid.

Novec™ 1230 is not corrosive and does not leave residues - even paper becomes dry again within short time without damage. For this reason it is optimally suitable for the use in areas with electrical and electronic equipment (EDP centres, computer rooms, telecommunications and server rooms, switching and distributor rooms and comparable applications).

High personal safety of Novec™ 1230

While the extinguishing effect of inert gases is based on the displacement of oxygen, Novec™ 1230 absorbs the heat of the flame and interrupts thereby the combustion reaction. Due to the usually used operation concentration of Novec™ 1230 the oxygen concentration within the flooded room amounts to still approx. 19 % by volume. Furthermore the operation concentration of 5,8 % by volume is also far under the NOAEL value of 10 %, from which according to investigations an impairment of persons by Novec™ 1230 is recognisable. Therefore Novec™ 1230 is a safe gas particularly for the use in occupied rooms.

The environmental influence of Novec™ 1230

Differently from the halons frequently used in former times it breaks down in the atmosphere within five days, when being exposed to the natural UV radiation.

Novec™ 1230 is the environmentally compatible alternative to the chemical extinguishants used so far. It has the smallest global warming potential, the shortest atmospheric lifetime and at all no effects on the ozone layer.

After many investigations and according to present knowledge Novec™ 1230 is not subject to sanctions concerning climatic protection regulations.

The manufacturer 3M™ supports this with a redemption guarantee for announced systems if it should come to a prohibition due to climatic protection regulations.

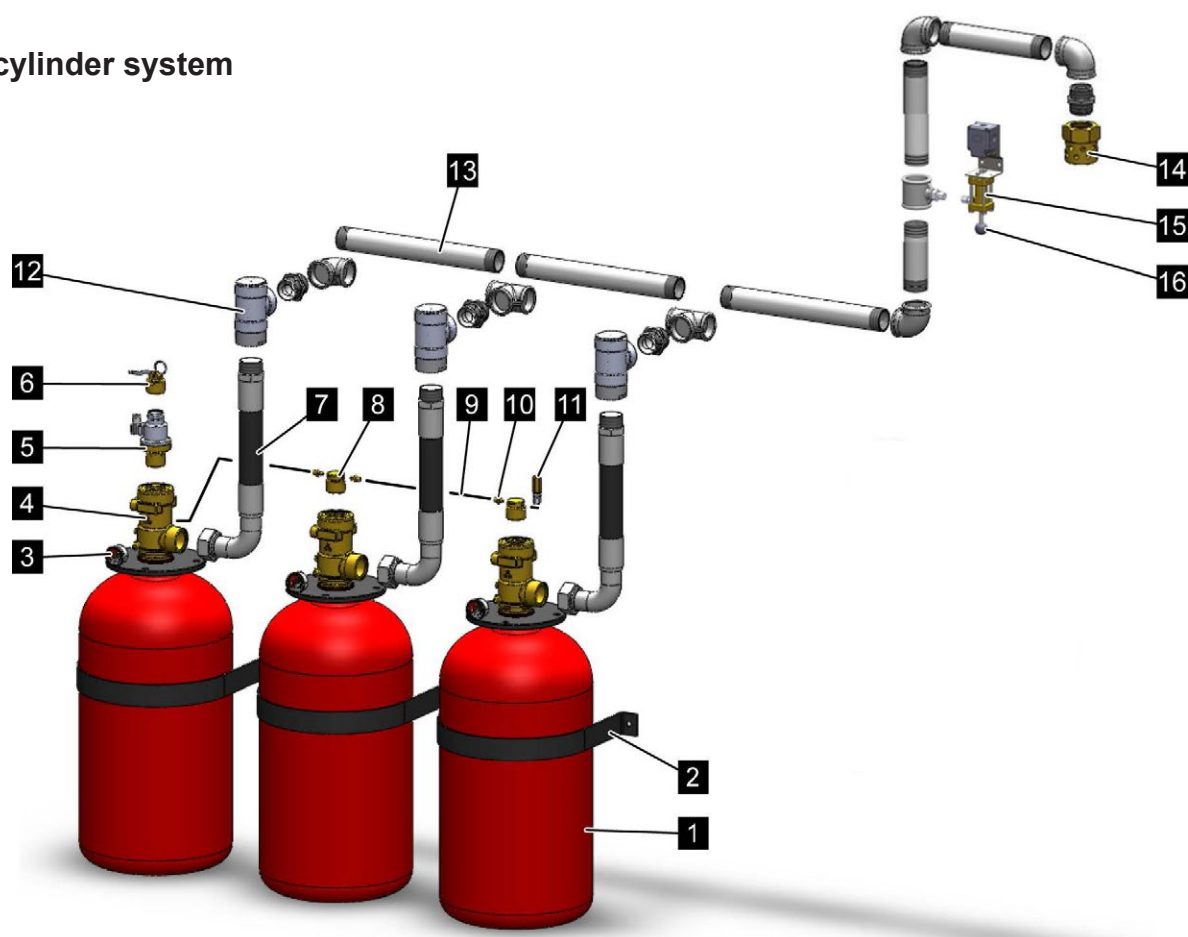


Extinguishing technology Halocarbon agents **P21.231.010 - 1**

VSN 1230 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 VSN-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 NCD	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	-

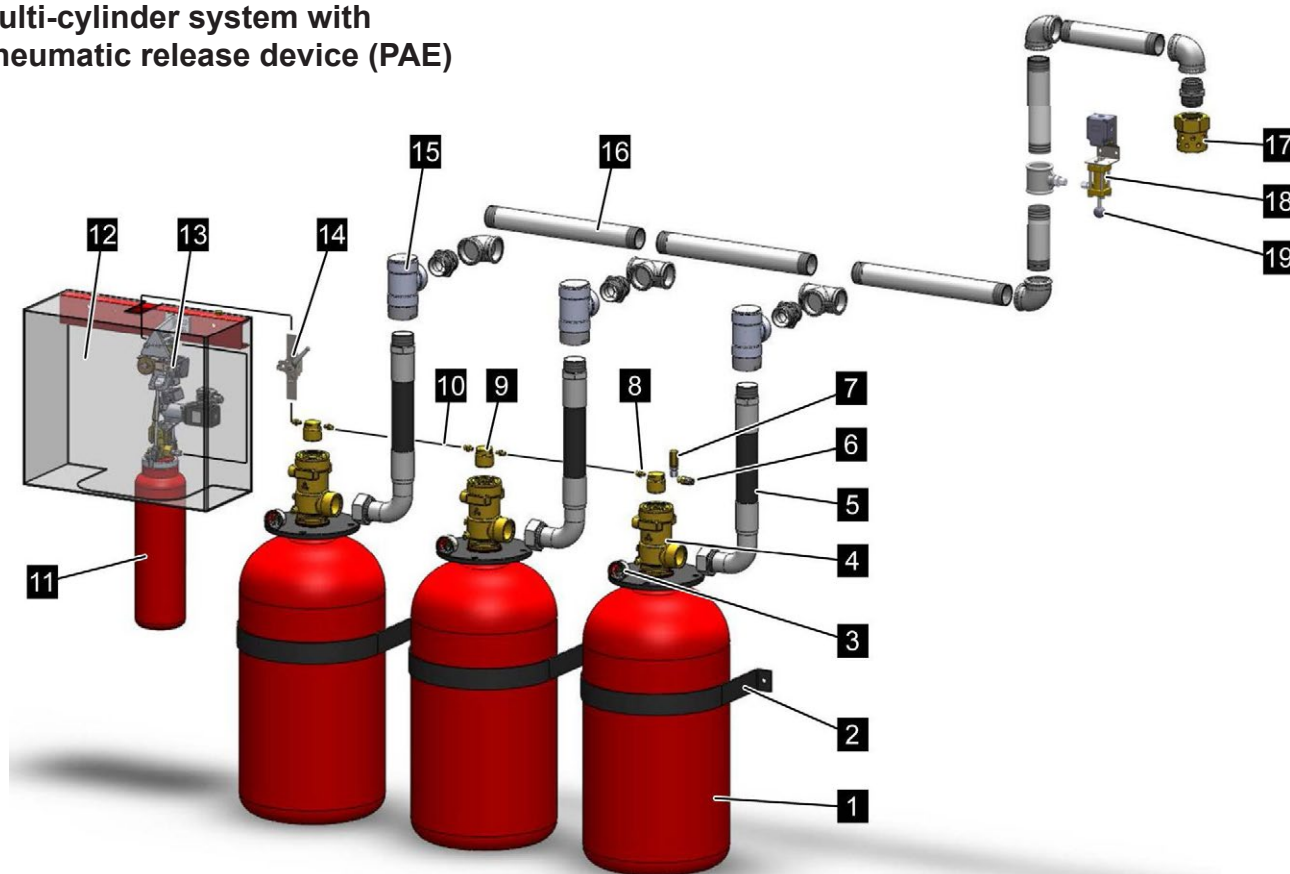


Extinguishing technology Halocarbon agents **P21.231.010 - 1**

VSN 1230 Fire Extinguishing System

Functional diagram single-zone system

Multi-cylinder system with pneumatic release device (PAE)



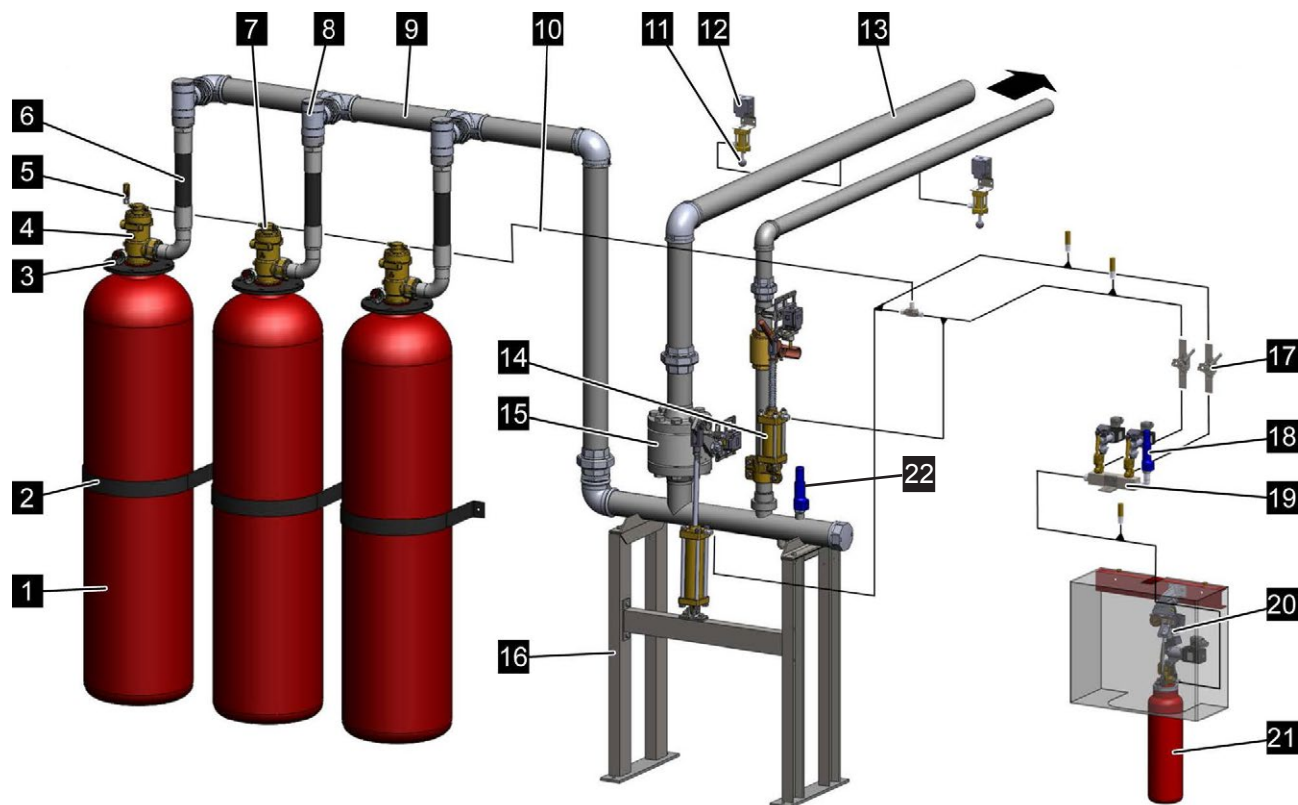
Item	Designation	Product group	Item	Designation	Product group
1	Extinguishing agent cylinder	P21.231.112	11	Extinguishing agent cylinder (Pilot cylinder)	P21.231.112
2	Clamp for extinguishing agent cylinder	P21.231.240	12	Protective cover	P21.214.420
3	Contact pressure gauge	P21.231.430	13	Pneumatic 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 NCD	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 - 1

VSN 1230 Fire Extinguishing System

Functional diagram multi-zone system



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

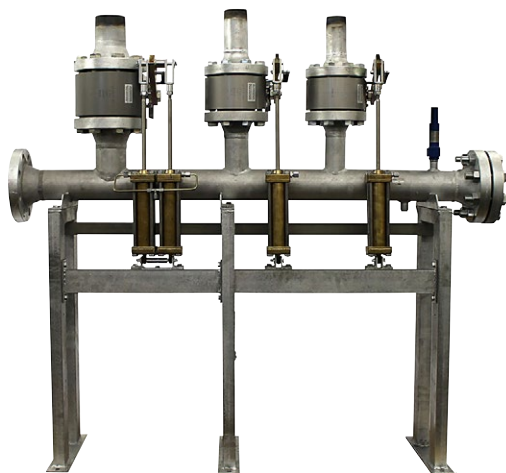
Multi-zone systems safeguard several extinguishing zones. If the extinguishing zones are of different sizes, multi-zone systems will be equipped with several extinguishing agent cylinders. The extinguishing agent supply and, thus, the number of extinguishing agent cylinders always follow the largest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



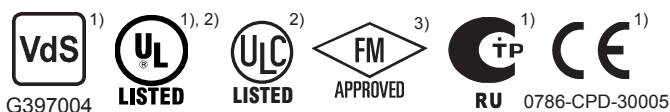
Extinguishing technology CO₂ HP CO₂ Manifold WAX-AVDU

P21.214.020 - 1

**Manifold selector valve DN65/80/100 complete
pneumatic, CO₂ / 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 (CO₂) 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 ₂ , 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 CO₂- 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 ₂)	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 CO₂ HP

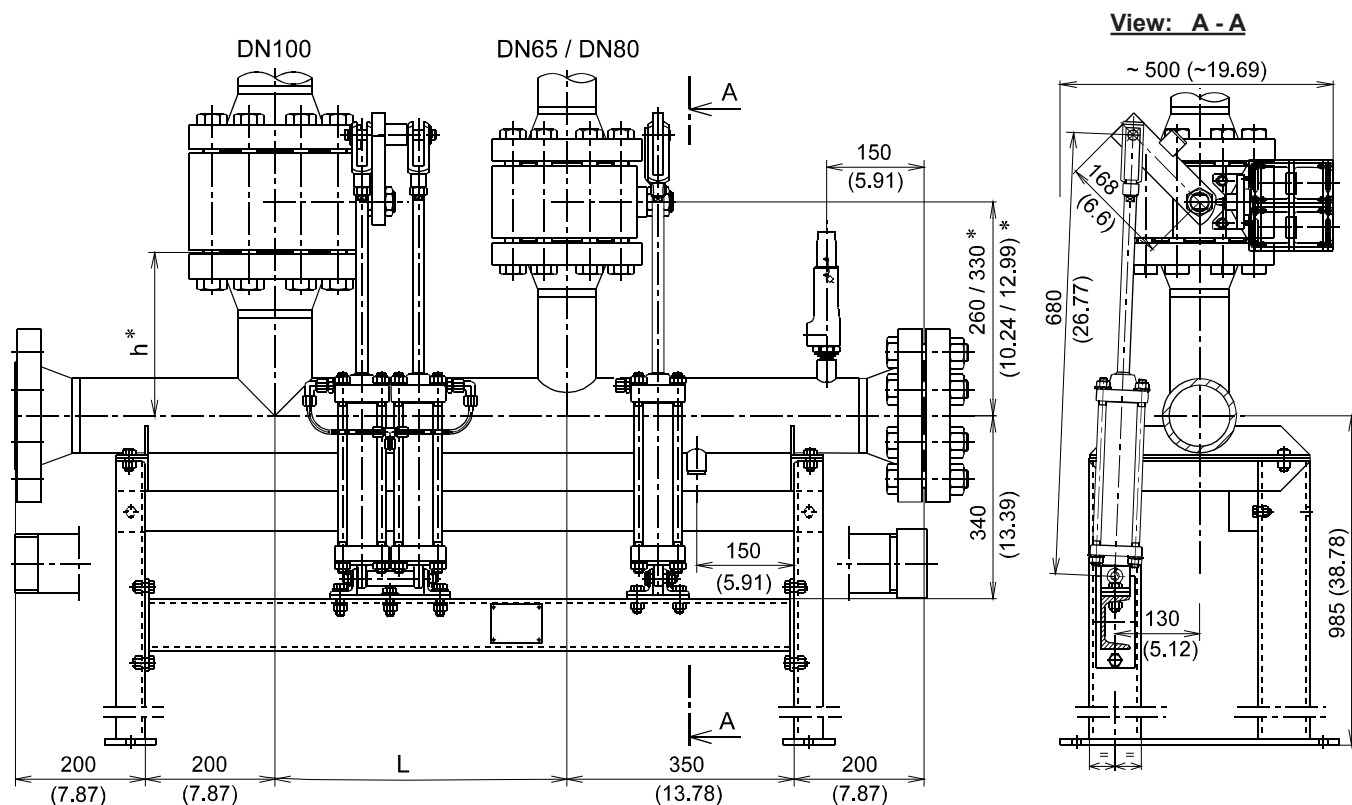
CO₂ Manifold WAX-AVDU

P21.214.020 - 1

**Manifold selector valve DN65/80/100 complete
pneumatic, CO₂ / 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 **P21.231.112 - 1**

Cylinder Halocarbon agents assembled

**Extinguishing agent cyl. UL/FM/GL,
VSN 1230 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 1230
- 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. 888488: Extinguishing agent cyl. UL/FM/GL 22.0
I-A-25bar-VSN 1230 EU/DOT/GOST-R

Maintenance

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

Pressure at 21 °C (70 °F) bar (psi)	Steel cylinder ⁷⁾	Nominal volume l (lbs)	Part no.		Amount filled ⁵⁾			Empty weight approx. kg (lbs)
			Valve type ⁶⁾		min. kg (lbs)	max.		
			A / A25	B / B25 (not UL / ULC)		VdS kg (lbs)	CE / GL / UL ULC / FM kg (lbs)	
25 (360)	TPED, GL, GOST-R	22.0 (60)	888488	888489	8.8 (19.5)	23.1 (50.9)	26.4 (58.2)	50 (110)
		40.0 (100)	888490	888491	16 (35.3)	42 (92.5)	48 (105.8)	59 (130)
		80.0 (220) ⁸⁾	888502	888503	32 (70.6)	84 (185.1)	96 (211.6)	104 (229)
		100.0 (270)	888504	888505	40 (88.2)	105 (231.4)	120 (264.5)	127 (280)
	TPED, GL, GOST-R, DOT	80.0 (220) ⁹⁾	888578	888579	32 (70.6)	84 (185.1)	96 (211.6)	99 (218)
		140.0 (390)	888580	888581	56 (123.5)	147 (324.0)	168 (370.3)	131 (289)
		180.0 (500)	888582	888583	72 (158.8)	189 (416.6)	216 (476.1)	179 (395)
42 (610)	TPED, GL, GOST-R	22.0 (60)	888492	888494	8.8 (19.5)	23.1 (50.9)	26.4 (58.2)	50 (110)
		40.0 (100)	888495	888496	16 (35.3)	42 (92.5)	48 (105.8)	59 (130)
		80.0 (220) ⁸⁾	888508	888509	32 (70.6)	84 (185.1)	96 (211.6)	104 (229)
		100.0 (270)	888510	888512	40 (88.2)	105 (231.4)	120 (264.5)	127 (280)
	TPED, GL, GOST-R, DOT	80.0 (220) ⁹⁾	888585	888586	32 (70.6)	84 (185.1)	96 (211.6)	99 (218)
		140.0 (390)	888587	888588	56 (123.5)	147 (324.0)	168 (370.3)	131 (289)
		180.0 (500)	888589	888590	72 (158.8)	189 (416.6)	216 (476.1)	179 (395)
50 (725)	TPED, GL, GOST-R	22.0 (60)	888497	888498	8.8 (19.5)	23.1 (50.9)	26.4 (58.2)	50 (110)
		40.0 (100)	888499	888501	16 (35.3)	42 (92.5)	48 (105.8)	59 (130)
		80.0 (220) ⁸⁾	888515	888516	32 (70.6)	84 (185.1)	96 (211.6)	104 (229)
		100.0 (270)	888517	888518	40 (88.2)	105 (231.4)	120 (264.5)	127 (280)
	TPED, GL, GOST-R, DOT	80.0 (220) ⁹⁾	888591	888592	32 (70.6)	84 (185.1)	96 (211.6)	99 (218)
		140.0 (390)	888593	888594	56 (123.5)	147 (324.0)	168 (370.3)	131 (289)
		180.0 (500)	888595	888597	72 (158.8)	189 (416.6)	216 (476.1)	179 (395)

⁵⁾ Order informations

The order has to be specified with the filling quantity.

The extinguishing agent FK-5-1-12 part no. 888054 must be ordered additionally.

⁶⁾ - ⁹⁾ Footnotes see on page 2



Extinguishing technology Halocarbon agents Cylinder Halocarbon agents assembled

P21.231.112 - 1

Extinguishing agent cyl. UL/FM/GL, VSN 1230 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:

- TPED, 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 $\varnothing D = 267 \text{ mm}$ (10.51")

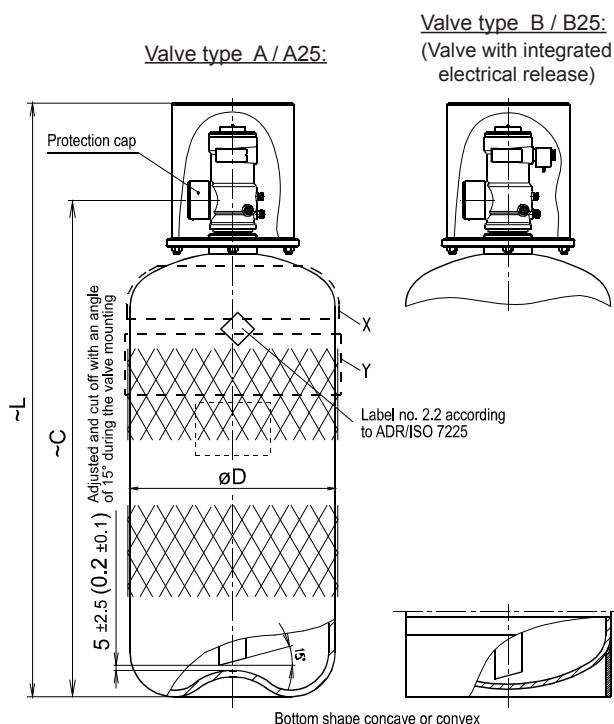
9) 80.0 l - Exting. agent cylinder with $\varnothing D = 406 \text{ mm}$ (15.98")

Marking

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

Dimension drawing

Dimensions in mm (inch)



Technical data

Extinguishing agentFK-5-1-12

.....Trademark: Novec™ 1230 from 3M™

Fill ratio:

- min.0.4 kg/l (25.0 lbs/ft³)

- max. VdS1.05 kg/l (65.5 lbs/ft³)

CE / GL / UL / ULC / FM1.2 kg/l (74.9 lbs/ft³)

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 filledby a qualified filling centre

Filling reportwith order no. and cylinder no.

Transportsee safety data sheet

ValvesP21.231.131

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 pressuremax. 60 bar / 60 °C (870 psi / 140 °F)

FinishRAL3000 - 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):

Markingacc. 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 weightxxxxxxx

- DOT specificationDOT-3AA-910

Not included in delivery

Type labelP21.231.140 - 1

Adapter M12x1.5 - G1/8 VSN 1230/200887644, P21.231.210

Contact pressure gauge VSN 1230/200P21.231.430

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

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

- PneumaticP21.231.210

- Pneumatic/ManualP21.231.210

- ManualP21.231.210

- Tackle pneumatic/manual - marineP21.231.210

Release devices for valve type A / A25 only:

- ElectricalP21.231.210

- Electrical with mech. blocking deviceP21.231.210

Nominal volume	~L	~C	øD ±3 (±0.12)	Nominal diameter valve
22.0 l (60 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 (220 lbs)	1960 (77.17)	1757 (69.17)	267 (10.51)	
80.0 l (220 lbs)	1090 (42.91)	887 (34.92)	406 (15.98)	DN49
100.0 l (270 lbs)	1800 (70.87)	1597 (62.87)	316 (12.44)	
140.0 l (390 lbs)	1570 (61.81)	1367 (53.82)	406 (15.98)	
180.0 l (500 lbs)	1910 (75.20)	1792 (70.55)	406 (15.98)	



Extinguishing technology Halocarbon agents P21.231.112 - 2

Cylinder Halocarbon agents assembled

**Extinguishing agent cylinder UL/FM,
VSN 1230 type 25, (welded)
22 l, 52 l, 106 l, 147 l, 180 l**



Approvals



- 1) Part of the system approval VSN 1230.
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. 914147: Exting. agent cyl. UL/FM 22L-A-25bar-VSN1230 DOT/TC

Maintenance

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

Pressure at 21 °C (70 °F) bar (psi)	Nominal volume l (lbs)	Part no. Valve type ⁶⁾		Steel cylinder ⁷⁾	Amount filled ⁵⁾			Empty weight approx. kg (lbs)
		A25	B25 (not UL / ULC)		min.	max.		
						VdS kg (lbs)	CE / UL ULC / FM kg (lbs)	
UL / FM - extinguishing agent cylinder								
25 (360)	22.0 (60)	914147	914722	DOT / TC ⁸⁾	8.8 (19.5)	23.1 (50.9)	26.4 (58.2)	40 (88)
	52.0 (140)	889109	889110		20.8 (45.9)	54.6 (120.3)	62.4 (137.5)	49 (108)
	106.0 (280)	889111	889112		42.4 (93.5)	111.3 (245.3)	127.2 (280.4)	86 (190)
	147.0 (390)	889113	889115		58.8 (129.7)	154.3 (340.2)	176.4 (388.8)	104 (229)
	180.0 (500)	910510	910511		72.0 (158.8)	189.0 (416.6)	216.0 (476.1)	142 (313)
UL / FM - extinguishing agent cylinder with liquid level indicator (no part of the VdS system approval)								
25 (360)	106.0 (280)	914151	-	DOT / TC ⁸⁾	42.4 (93.5)	111.3 (245.3)	127.2 (280.4)	95 (210)
	147.0 (390)	914152	-		58.8 (129.7)	154.3 (340.2)	176.4 (388.8)	114 (251)
	180.0 (500)	914153	-		72.0 (158.8)	189.0 (416.6)	216.0 (476.1)	130 (286)

⁵⁾ Order informations

The order has to be specified with the filling quantity.

The extinguishing agent FK-5-1-12 part no. 888054 must be ordered additionally.

- ⁶⁾ 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)

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

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



Extinguishing technology Halocarbon agents P21.231.112 - 2

Cylinder Halocarbon agents assembled

Extinguishing agent cylinder UL/FM, VSN 1230 type 25, (welded) 22 l, 52 l, 106 l, 147 l, 180 l

Technical data

Extinguishing agentFK-5-1-12
.....Trademark: Novec™ 1230 from 3M™

Fill ratio:

- min.0.4 kg/l (25.0 lbs/ft³)
- max. VdS1.05 kg/l (65.5 lbs/ft³)
CE / UL / ULC / FM1.2 kg/l (74.9 lbs/ft³)

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 filledby a qualified filling centre
Filling reportwith order no. and cylinder no.
Transportsee safety data sheet
ValvesP21.231.131

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

steel cylinder (welded)according to DOT and TC regulations
Working pressuremax. 35 bar / 50 °C (507 psi / 122 °F)
FinishFederal Red P20750
.....other colour upon customer request

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

Markingaccording to DOT and TC regulations

Additional marking:

- Owner marking, **M**inimax **F**euerschutzMF
- Owner no. (acc. to order)xxxxxxx
- Tare weightTARExxx
- DOT specificationDOT-4BW500
- TC specificationTC-4BWM34

Marking

Part no. marked in the area Y

Not included in delivery

Type labelP21.231.140 - 1
Adapter M12x1.5 - G1/8 VSN 1230/200887644, P21.231.210
Contact pressure gauge VSN 1230/200P21.231.430
Clamp for extinguishing agent cyl. VSN 1230/200P21.231.240

Release devices for valve type A25 and B25:

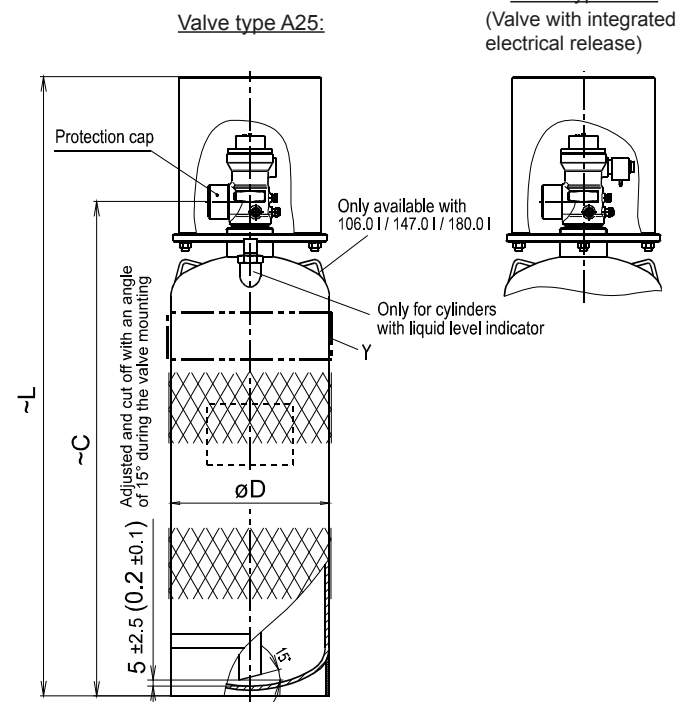
Pneumatic, pneumatic/manual, manual,
tackle pneumatic/manual - marineP21.231.210

Release devices for valve type A25 only:

Electrical, electrical with mech. blocking deviceP21.231.210

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 (140 lbs)	1435 (56.50)	1128 (44.41)	254 (10)
106.0 l (280 lbs)	1240 (48.82)	924 (36.38)	406.6 (16)
147.0 l (390 lbs)	1575 (62.01)	1258 (49.53)	406.6 (16)
180.0 l (500 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



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. 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. agentFK-5-1-12, HFC-227ea
Nominal diameterDN33 (1.1/2")
(free cross-sectional area
at minimum flow path: 697 mm² (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 DN33max. 35 bar (508 psi)
- Ventil B0482-A DN33max. 60 bar (870 psi)
To be used for steel cylinderfrom 22.0 l to 50.0 l
.....(60 lbs to 140 lbs)
Valve typetype 2 acc. to EN 12094-4
CE conformityacc. to Construction Products Regulation (EU)
.....No. 305/2011

Material / Finish

Housing, Adapter, Screwsbrass
Spindles, Seal retainerbrass
O-ring / Seal of seatNBR
Bursting disknickel
Springsteel
DampingPA 6.6

Marking

Approvalπ0029 - CE1134 - VdS
Part no. (VSN / manufacturer)887964 / B04820021,
.....887662 / B04820023
Manufacturing dateWW/YY
Manufacture's sign3 stars
Working pressure25 bar / 50 bar at 21 °C
Nominal diameterø33

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 1230/200887644, P21.231.210
Contact pressure gauge VSN 1230/200P21.231.430
Dip tube VSN 1230/200 for valve DN3388 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:
- ElectricalP21.231.210
- Electrical with mech. blocking deviceP21.231.210
- PneumaticP21.231.210
- Pneumatic/ManualP21.231.210
- ManualP21.231.210
- Tackle pneumatic/manual - marineP21.231.210



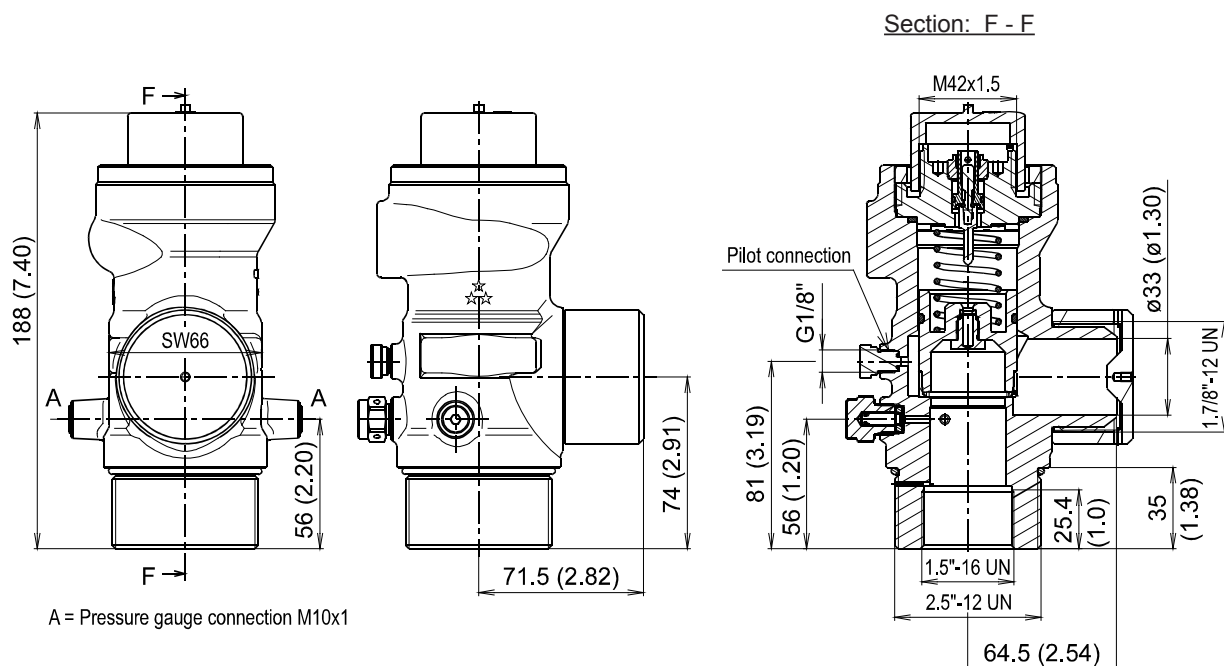
Extinguishing technology Halocarbon agents P21.231.131 - 1

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

¹⁾ 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. agentFK-5-1-12, HFC-227ea)
Nominal diameterDN33 (1.1/2")
(free cross-sectional area
at minimum flow path: 697 mm² (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 DN3335 bar (508 psi)
- Valve B0482-B DN3360 bar (870 psi)
To be used for steel cylinderfrom 22.0 l to 50.0 l
.....(60 lbs to 140 lbs)
Valve typetype 2 acc. to EN 12094-4
CE conformityacc. to Construction Products Regulation (EU)
.....No. 305/2011
Integrated electrical release:
- Voltage24 V DC
- Current intensity0.25 A ±10 %
- Output6 W
- Protection categoryIP 54
- Duty cycle100 %

Material / Finish

Housing, Adapter, Screwsbrass
Spindles, Seal retainerbrass
O-ring / Seal of seatNBR
Bursting disknickel
Springsteel
DampingPA 6.6

Marking

Approvalπ0029 - CE1134 - VdS
Part no. (VSN / manufacturer)887965 / B04820022,
.....887663 / B04820024
Manufacturing dateWW/YY
Manufacture's sign3 stars
Working pressure25 bar / 50 bar at 21 °C
Nominal diameterø33

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 1230/200887644, P21.231.210
Contact pressure gauge VSN 1230/200P21.231.430
Dip tube VSN 1230/200 for valve DN3388 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:
- PneumaticP21.231.210
- Pneumatic/ManualP21.231.210
- ManualP21.231.210
- Tackle pneumatic/manual, marineP21.231.210



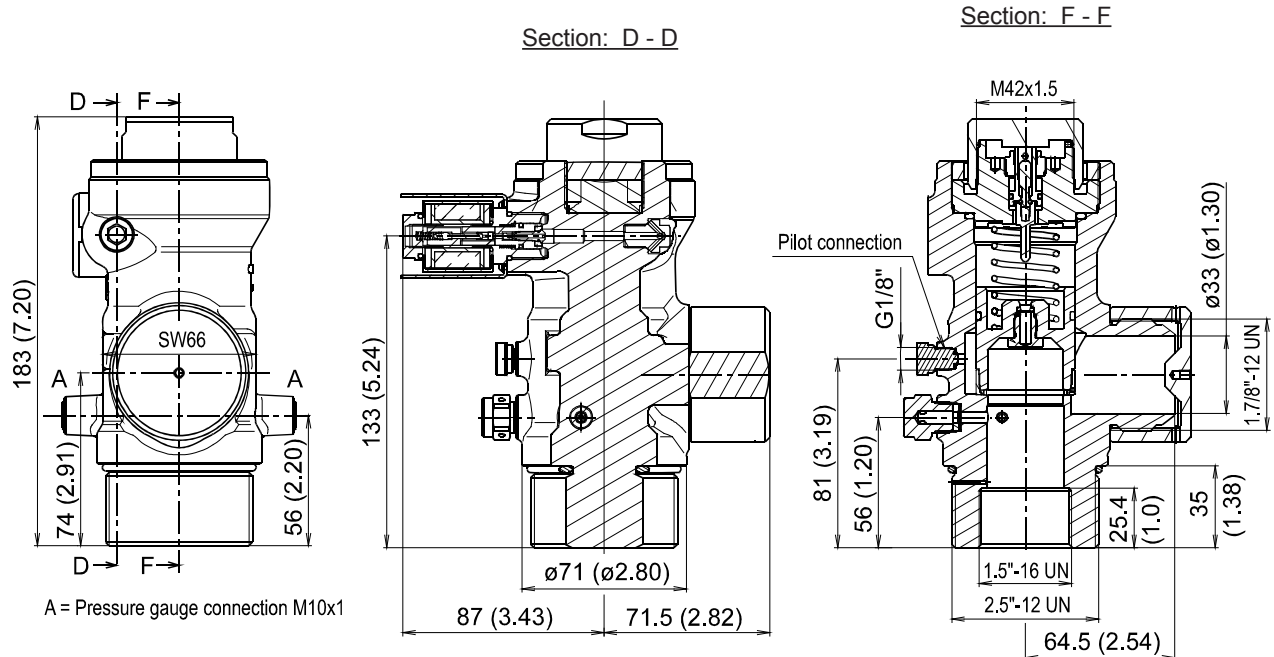
Extinguishing technology Halocarbon agents **P21.231.131 - 2**

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. agentFK-5-1-12, HFC-227ea
Nominal diameterDN49 (2")
(free cross-sectional area
at minimum flow path:1515 mm² (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 DN4935 bar (508 psi)
- Valve B0481-A DN4960 bar (870 psi)
To be used for steel cylinderfrom 80.0 l to 180.0 l
.....(220 lbs to 500 lbs)
Valve typetype 2 acc. to EN 12094-4
CE conformityacc. to Construction Products Regulation (EU)
.....No. 305/2011

Material / Finish

Housing, Adapter, Screwsbrass
Spindles, Seal retainerbrass
O-ring / Seal of seatNBR
Bursting disknickel
Springsteel
DampingPA 6.6

Marking

Approvalπ0029 - CE1134 - VdS
Part no. (VSN / manufacturer)887966 / B04810020,
.....887664 / B04810022
Manufacturing dateWW/YY
Manufacture's sign3 stars
Working pressure25 bar / 50 bar at 21 °C
Nominal diameterø49

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 1230/200887644, P21.231.210
Contact pressure gauge VSN 1230/200P21.231.430
Dip tube VSN 1230/200 for valve DN4988 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:
- ElectricalP21.231.210
- Electrical with mech. blocking deviceP21.231.210
- PneumaticP21.231.210
- Pneumatic/ManualP21.231.210
- ManualP21.231.210
- Tackle pneumatic/manual - marineP21.231.210



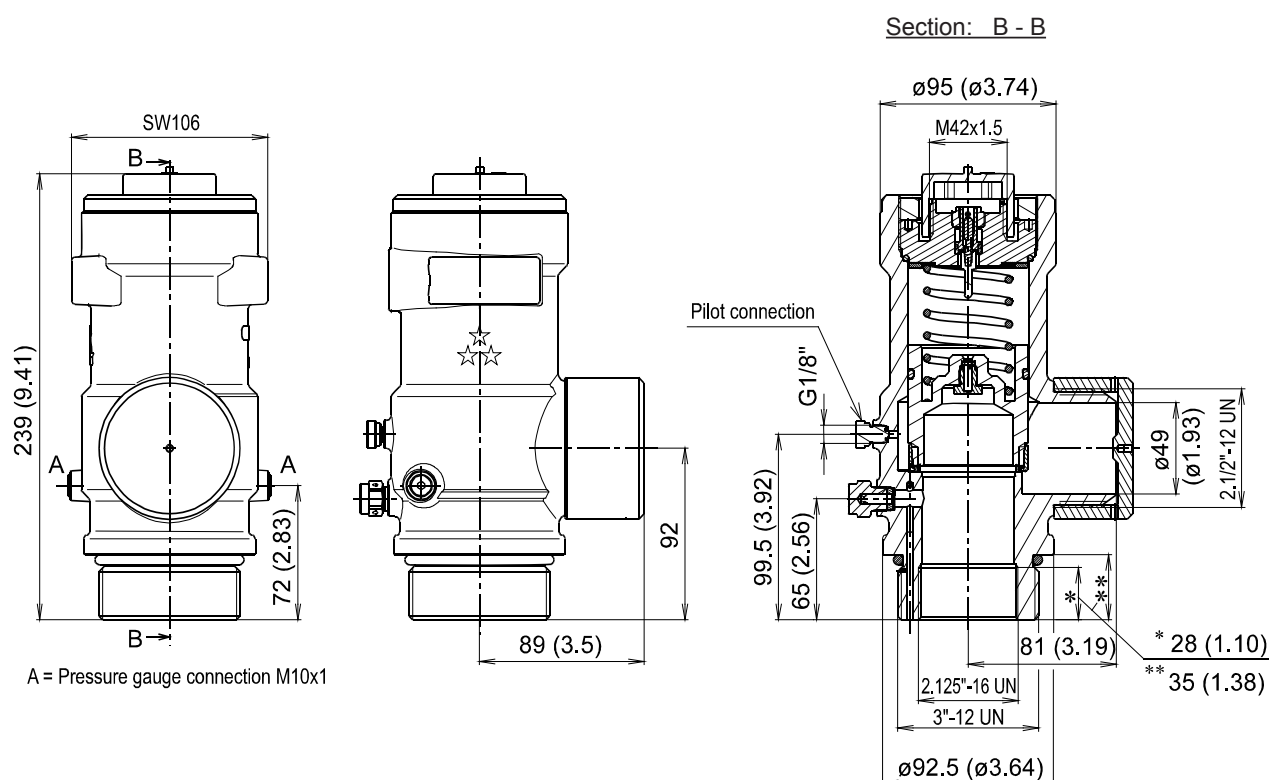
Extinguishing technology Halocarbon agents **P21.231.131 - 3**

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. agentFK-5-1-12, HFC-227ea
Nominal diameterDN49 (2")
(free cross-sectional area
at minimum flow path:1515 mm² (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 DN4935 bar (508 psi)
- Valve B0481-B DN4960 bar (870 psi)
To be used for steel cylinderfrom 80.0 l to 180.0 l
.....(220 lbs to 500 lbs)
Valve typetype 2 acc. to EN 12094-4
CE conformityacc. to Construction Products Regulation (EU)
.....No. 305/2011
Integrated electrical release:
- Voltage24 V DC
- Current intensity0.25 A ± 10 %
- Output6 W
- Protection categoryIP 54
- Duty cycle100 %

Material / Finish

Housing, Adapter, Screwsbrass
Spindles, Seal retainerbrass
O-ring / Seal of seatNBR
Bursting disknickel
Springsteel
DampingPA 6.6

Marking

Approvalπ0029 - CE1134 - VdS
Part no. (VSN / manufacturer)887967 / B04810020,
.....887665 / B04810023
Manufacturing dateWW/YY
Manufacture's sign3 stars
Working pressure25 bar / 50 bar at 21 °C
Nominal diameterø49

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 1230/200887644, P21.231.210
Contact pressure gauge VSN 1230/200P21.231.430
Dip tube VSN 1230/200 for valve DN4988 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:
- PneumaticP21.231.210
- Pneumatic/ManualP21.231.210
- ManualP21.231.210
- Tackle pneumatic/manual - marineP21.231.210



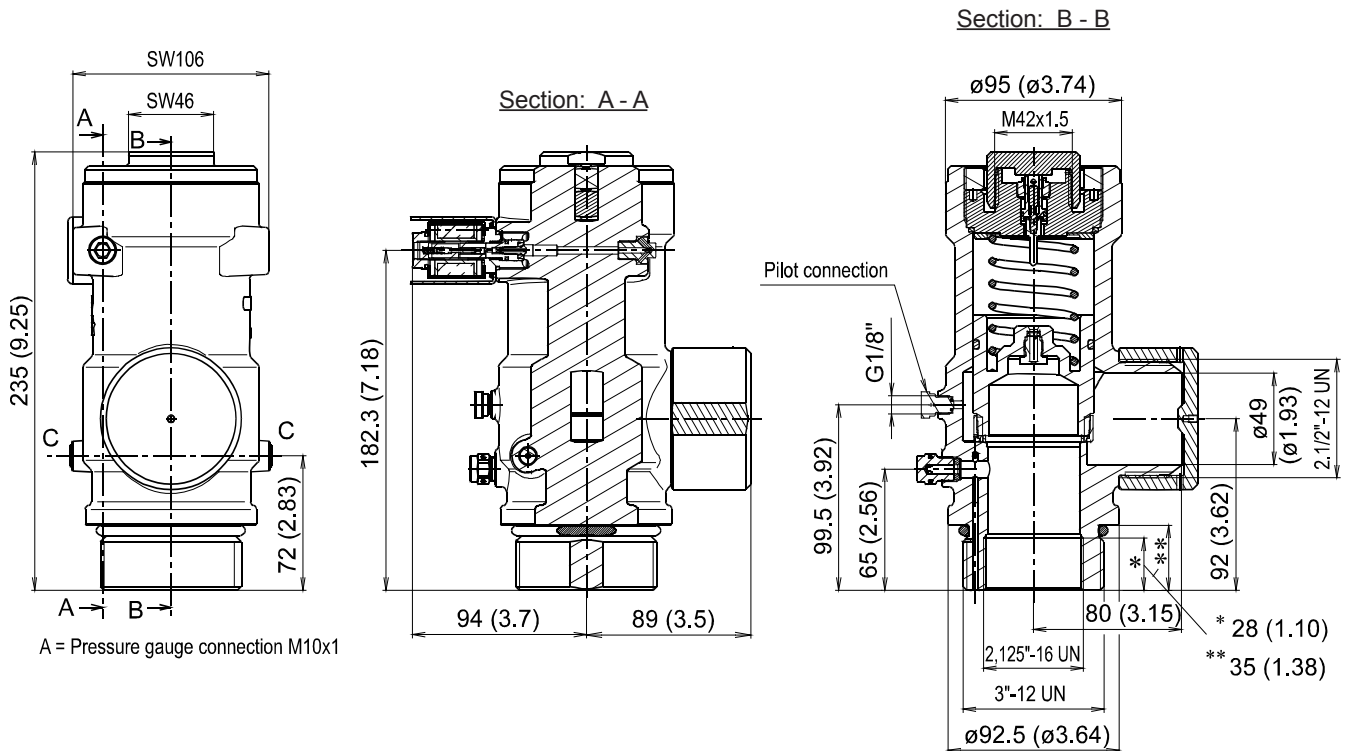
Extinguishing technology Halocarbon agents **P21.231.131 - 4**

Halocarbon agents cylinder valve

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

Dimension drawing

Dimensions in mm (inch)

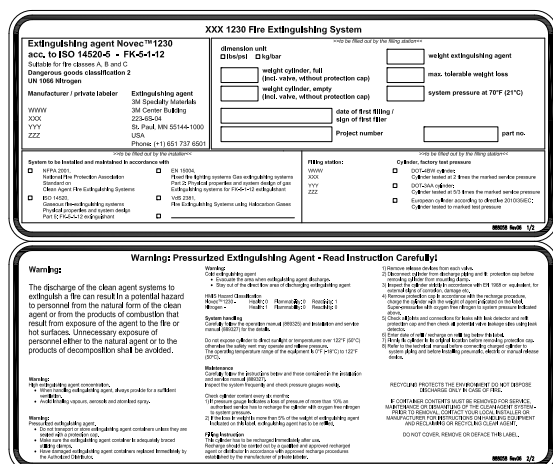


P21.231.140 - 1

Approvals



2) Part of the system approval



e.g. part no. 888057: Type label extinguishing agent cylinder
VSN 1230

Maintenance
maintenance-free

Designation	Language	Part no.	Weight
Type label extinguishing agent cylinder VSN 1230	German (de)	888057 ³⁾	0.025 kg (0.055 lbs)
	English (en)	888058	
	Spanish (es)	910909 ³⁾	
	Portuguese (pt)	911749 ³⁾	
	French (fr)	914364 ³⁾	

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

Material PVC foil self adhesive 0.2 mm thickness

Dimensions (width x height)297 x 250 (11,69" x 9,84")
 ScriptRAL9004 - black
 GroundRAL9003 - white
 Gluepermanent, sticking firmly
 Storage of glue layermin. 3 years
 For glass surfaces, plastic surfaces, structured cast metal
 surfaces, and powdered/varnished surfaces.

Type label
extinguishing agent cylinder VSN 1230

Type label extinguishing agent cylinder VSN 1230 English (en)

Extinguishing agent Novec™1230

acc. to ISO 14520-5 - FK-5-1-12

Suitable for fire classes A, B and C

Dangerous goods classification 2

UN 1066 Nitrogen

Manufacturer / private labeler

XXX Extinguishing agent
3M Speciality Materials
3M Center Building
223-6S-04
YYY St. Paul, MN 55144-1000
ZZZ USA
Phone: (+1) 651 737 6501

>>to be filled out by the installer<<

System to be installed and maintained in accordance with

☐ NFPA 2001, EN 15004, Fixed fire fighting systems Gas extinguishing systems
☐ National Fire Protection Association Standard on Part 2: Physical properties and system design of gas
☐ Clean Agent Fire Extinguishing Systems Extinguishing systems for FK-5-1-12 extinguishant
☐ ISO 14520, VdS 2381, Fire Extinguishing Systems using Halocarbon Gases
☐ Gaseous fire-extinguishing systems Physical properties and system design
☐ Part 5: FK-5-1-12 extinguishant

XXX 1230 Fire Extinguishing System

>>to be filled out by the filling station<<

dimension unit <input type="checkbox"/> lbs/psl <input type="checkbox"/> kg/lbar	<input type="text"/>	weight extinguishing agent	<input type="text"/>
<input type="text"/>	weight cylinder, full (incl. valve, without protection cap)	max. tolerable weight loss	<input type="text"/>
<input type="text"/>	weight cylinder, empty (incl. valve, without protection cap)	system pressure at 70°F (21°C)	<input type="text"/>
<input type="text"/>	date of first filling / sign of first filler		
<input type="text"/>	Project number		part no. <input type="text"/>

>>to be filled out by the filling station<<

Filling station: WWWW XXX YYY ZZZ	Cylinder, factory test pressure <input type="checkbox"/> DOT-4BW cylinder; Cylinder tested at 2 times the marked service pressure <input type="checkbox"/> DOT-3AA cylinder; Cylinder tested at 5/3 times the marked service pressure <input type="checkbox"/> European cylinder according to directive 2010/35/EC; Cylinder tested to marked test pressure
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888058 Rev06 1/2

Warning: Pressurized Extinguishing Agent - Read Instruction Carefully!

Warning:

The discharge of the clean agent systems to extinguish a fire can result in a potential hazard to personnel from the natural form of the clean agent or from the products of combustion that result from exposure of the agent to the fire or hot surfaces. Unnecessary exposure of personnel either to the natural agent or to the products of decomposition shall be avoided.

Warning:
High extinguishing agent concentration.

- When handling extinguishing agent, always provide for a sufficient ventilation;
- Avoid inhaling vapours, aerosols and atomized spray.

Warning:

- Pressurized extinguishing agent,
- Do not transport or store extinguishing agent containers unless they are sealed with a protection cap.
- Make sure the extinguishing agent container is adequately braced during damp.
- Have damaged extinguishing agent containers replaced immediately by the Authorized Distributor.

Warning:

- Call your distributor when extinguishing agent discharges.
- Stay out of the direct flow area of discharging extinguishing agent

HMS Hazard Classification
Novec™1230 - Health: 0 Flammability: 0 Reactivity: 1
Nitrogen - Health: 1 Flammability: 0 Reactivity: 0

System handling

Carefully follow the operation manual (889325) and installation and service manual (889327) for the details.

Do not expose cylinder to direct sunlight or temperatures over 122°F (50°C) otherwise the safety vent may operate and relieve pressure.
The operating temperature range of the equipment is 0°F (-18°C) to 122°F (50°C).

Maintenance

Carefully follow the instructions below and those contained in the Installation and service manual (889327).

Inspect the system frequently and check pressure gauges weekly.

Check cylinder content every six months:

- 1) If pressure gauge indicates a loss of pressure of more than 10% an overhaul of the cylinder has to be carried out by a qualified person authorized to system pressure.
- 2) If the loss in weight is more than 5% of the weight of extinguishing agent indicated on this label, extinguishing agent has to be refilled.

Filling instruction

This cylinder has to be recharged immediately after use.
Recharge should be carried out by a qualified and approved recharged agent or distributor in accordance with approved recharge procedures established by the manufacturer or private labeller.

- 1) Remove release device from each valve.
- 2) Disconnect cylinder from discharging piping and fit protection cap before releasing the cylinder from the filling station.
- 3) Inspect the cylinder strictly in accordance with EN 1988 or equivalent, for external signs of corrosion, damage etc.
- 4) Remove protection cap in accordance with the recharge procedure, charge the cylinder with the weight of agent indicated on the label. Super-pressure with oxygen free nitrogen to system pressure Indicated above.
- 5) Check all joints and connections for leaks with leak detector and refill protection cap and then check all potential valve leakage sites using leak detector.
- 6) Enter date of refill / recharge on refill tag below this label.
- 7) The cylinder has to be released from the filling station as soon as possible.
- 8) Refer to the technical manual before connecting charging cylinder to system piping and before installing pneumatic, electric or manual release device.

RECYCLING PROTECTS THE ENVIRONMENT DO NOT DISPOSE
DISCHARGE ONLY IN CASE OF FIRE.

IF CONTAINER CONTENTS MUST BE REMOVED FOR SERVICE,
MAINTENANCE OR DISMANTLING OF THE CLEAN AGENT SYSTEM,
PRIOR TO REMOVAL CONTACT YOUR LOCAL INSTALLER OR
MANUFACTURER FOR INSTRUCTIONS ON HANDLING EQUIPMENT
AND RECLAIMING OR RECYCLING CLEAN AGENT.

DO NOT COVER, REMOVE OR DEFACE THIS LABEL.

888058 Rev06 2/2



Extinguishing technology Halocarbon agents P21.231.210 - 1

Cylinder add-on parts Halocarbon agents

Release device VSN 1230/200 pneumatic



Approvals / CE marking



G307011



LISTED



LISTED



APPROVED



1134-CPD-1007

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. manufacturerB04420066

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)

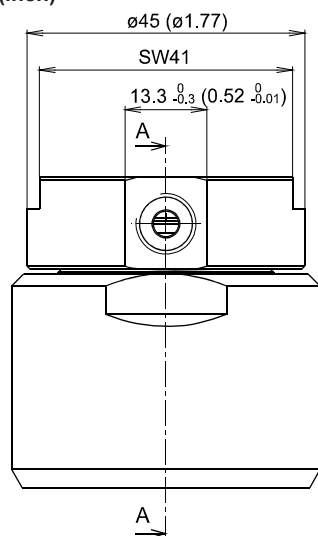
UL / ULC / FM-18 °C to +50 °C (0 °F to 122 °F)

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

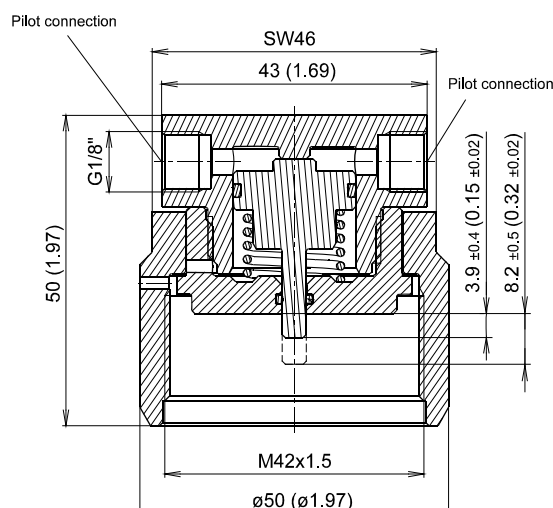
Adapter M12x1.5 - G1/8 VSN 1230/200887644, P21.231.210

Plug for pilot connection G1/8 VSN88 8032

Additional possible use also with:

Release device electricalP21.231.210

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 ⁴⁾	887667	2.49 kg (5.5 lbs)
	without diode	889323	

Technical data

Type / part no. manufacturer with diodeB04425130
without diodeB04425114
Nominal voltage24 V / DC $\pm 15\%$
Nominal current0.5 A $\pm 10\%$
IP codeIP65
Electrical connectionPG9
Max. permitted test current20 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 connection100 % duty ratio
Actuation force at the contact with the plunger ≥ 500 N
Holding force in resting state100 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 1230/20088 7645

Additionally further release devices can be installed:

- PneumaticP21.231.210
- Pneumatic/ManualP21.231.210
- ManualP21.231.210
- Tackle pneumatic/manual - marineP21.231.210

⁴⁾ 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.



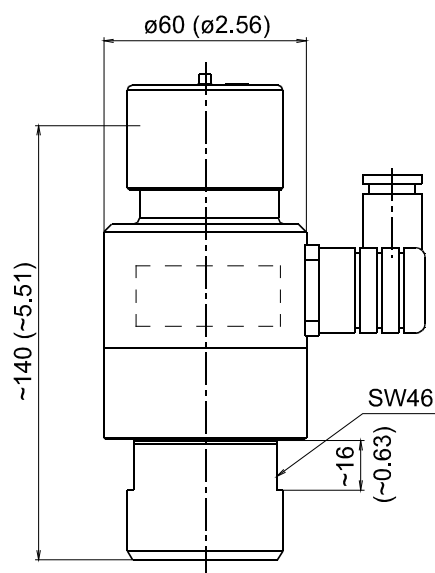
Extinguishing technology Halocarbon agents **P21.231.210 - 2**

Cylinder add-on parts Halocarbon agents

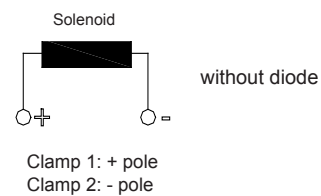
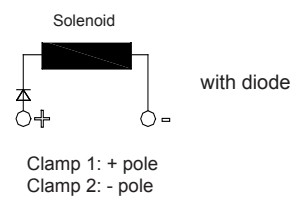
Release device VSN 1230/200 electrical

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 ³⁾	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 ³⁾
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 ≥ 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 1230/20088 7645
Additionally further release device can be installed:
- ManualP21.231.210

³⁾ 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.



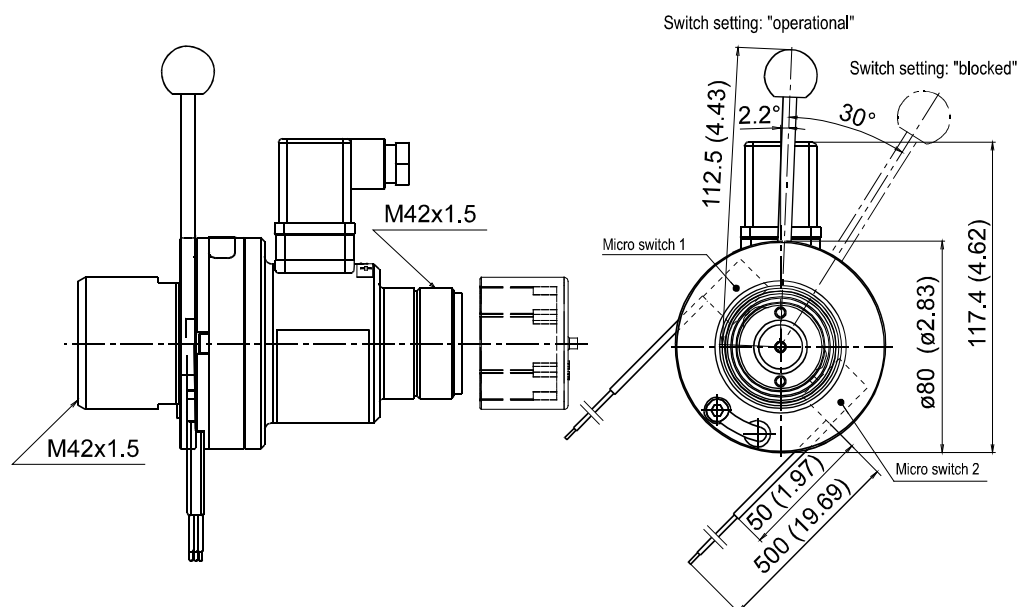
Extinguishing technology Halocarbon agents **P21.231.210 - 3**

Cylinder add-on parts Halocarbon agents

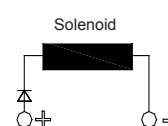
Release device VSN 1230/200 electrical with mech. blocking device

Dimension drawing

Dimensions in mm (inch)



Terminal connection



Clamp 1: + pole
Clamp 2: - pole



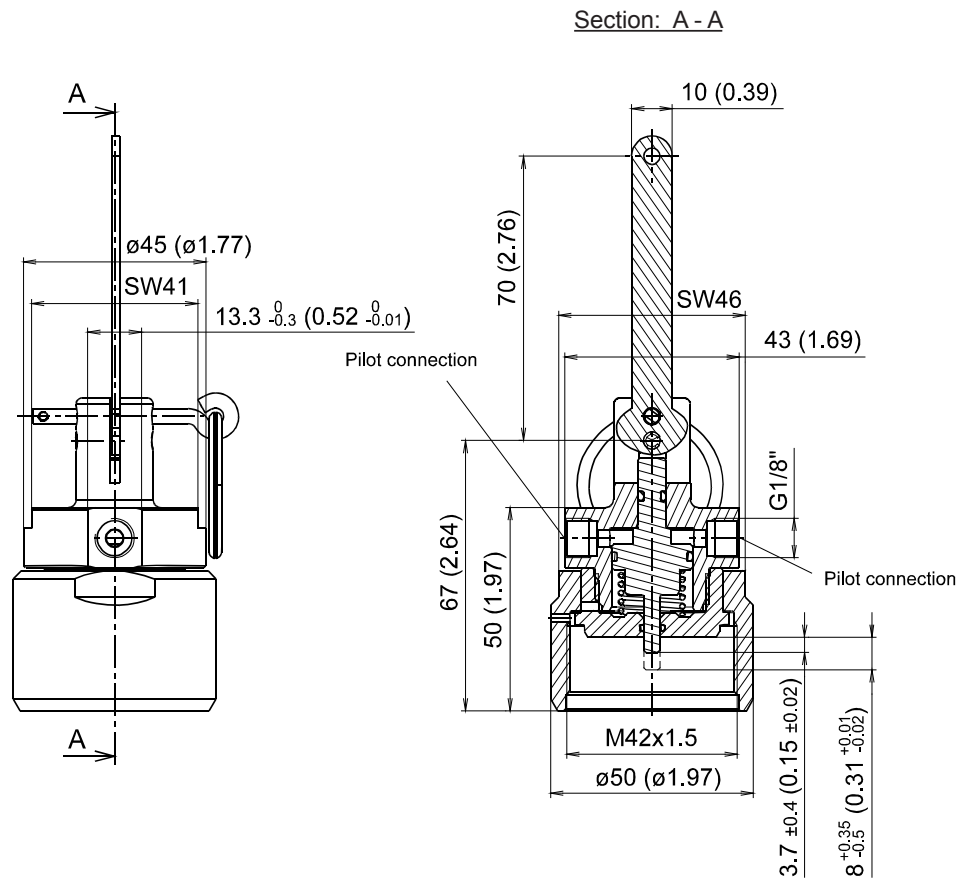
Extinguishing technology Halocarbon agents **P21.231.210 - 4**

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. manufacturerB04420100

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

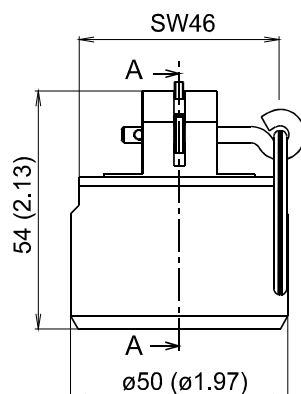
Additional possible use also with release device:

- ElectricalP21.231.210

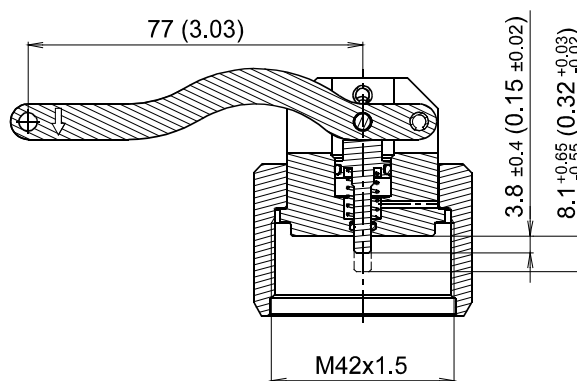
- Electrical with mech. blocking deviceP21.231.210

Dimension drawing

Dimensions in mm (inch)



Section: A - A





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

Cylinder add-on parts Halocarbon agents

Hose DN4 - VSN 1230/200



Approvals / CE marking



G307008



APPROVED



0786-CPD-30067

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. 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

TypeDN 4 x 600/1000/1500 - MX 200/1230
 Operating mediumFK-5-1-12, HFC-227ea, nitrogen, CO₂
 Nominal diameterDN4 (0.16")
 Minimum bending radius90 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 pressure160 bar (2321 psi)
 Test pressure240 bar (3481 psi)
 Burst pressure480 bar (6962 psi)
 FerrulePN 04 AOL conical nipple 24° with O-ring
metric (DKOL) steel galvanized yellow chrome dulled
 Hose connector type 3complies with EN 12094-8
 CE conformityacc. 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

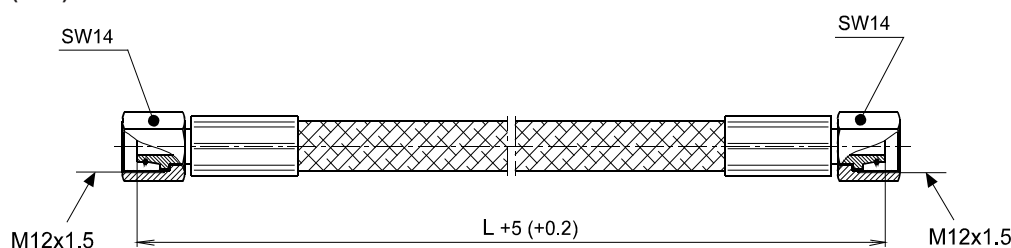
Included in delivery

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

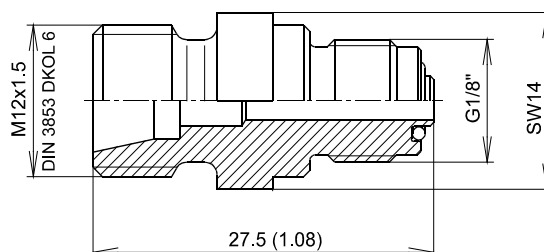
Operating mediumFK-5-1-12, HFC-227ea,
argon, nitrogen, CO₂, IG55, IG541
 Operating temperature range:
-20 °C to +50 °C (-4 °F to 122 °F)
 UL / ULC / FM-18 °C to +50 °C (0 °F to 122 °F)
 Working pressure360 bar (5221 psi)
 Materialbrass

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

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. 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 / DN50DN 40 / DN50 MX 1230/200
 DN 40 90° / DN50 90° ..DN 40 / DN50 MX 1230/200 90
 Operating mediumFK-5-1-12, HFC-227ea, Nitrogen
 Nominal diameterDN40 / DN50 (1.1/2" / 2")
 Minimum bending radius DN40500 mm (19.69")
 DN50630 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 pressure80 bar (1160 psi)
 Test pressure120 bar (1740 psi)
 Burst pressure240 bar (3481 psi)
 Hose connector type 1complies with EN 12094-8
 CE conformityacc. to Construction Products Regulation (EU)
No. 305/2011

Material / Finish

Unionsteel, galvanized, yellow chrome dulled
 Ferrulesteel, galvanized, yellow chrome dulled
 Flexible hose linewith fabric-inserted steel
 Hexagon nipplesteel, 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



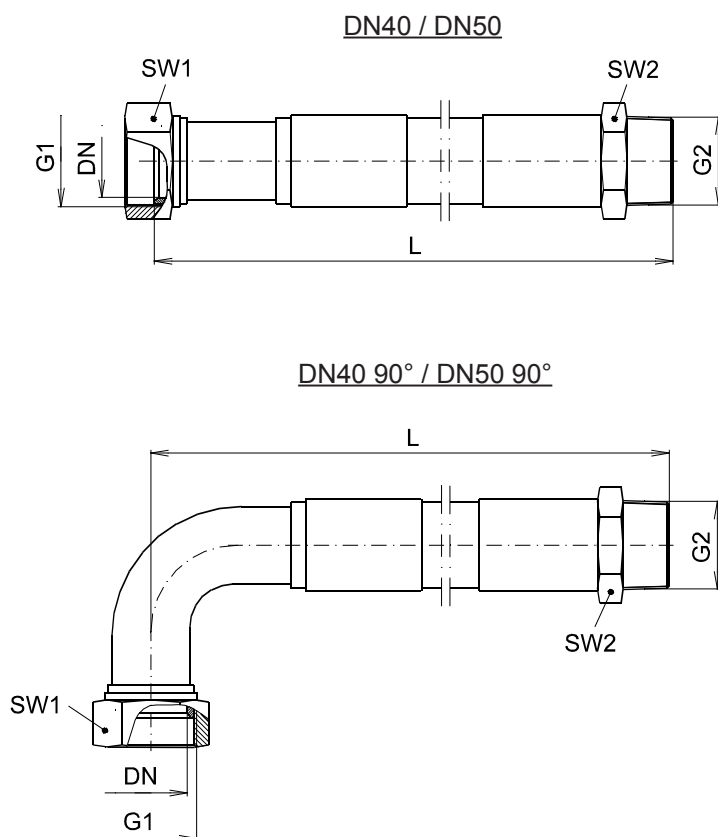
Extinguishing technology Halocarbon agents **P21.231.210 - 9**

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 ³⁾	65
DN50 NPT			2" - 11.5 NPT		
DN50 90°	520 (20.47)		R2" ISO 7		
DN50 90° NPT			2" - 11.5 NPT		

³⁾ 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!)



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. 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

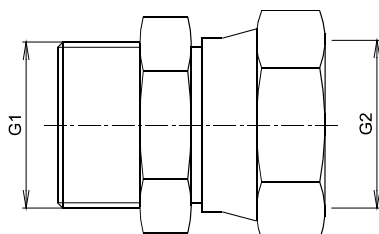
External threadtapered, thread seal
 Internal threadUN-nut thread, 74° conical hole
 Working pressure60 bar (870 psi)
 Materialsteel, galvanized coated

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!)



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

²⁾ 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

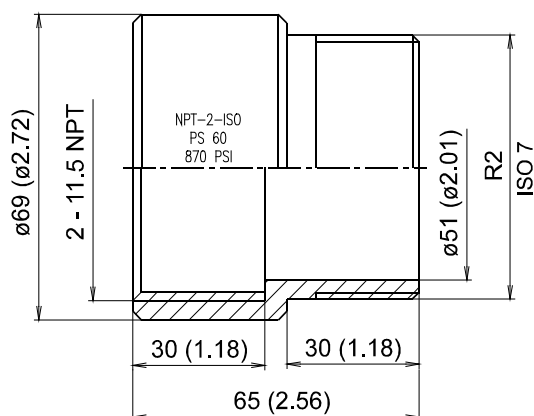
Working pressuremax. 60 bar (870 psi)
Thread NPTacc. to ANSI / ASME B1.20.1-NPT
ISOacc. to EN 10226
Materialsteel, galvanized acc. to EN 12329 - Fe/Zn12

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

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. 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

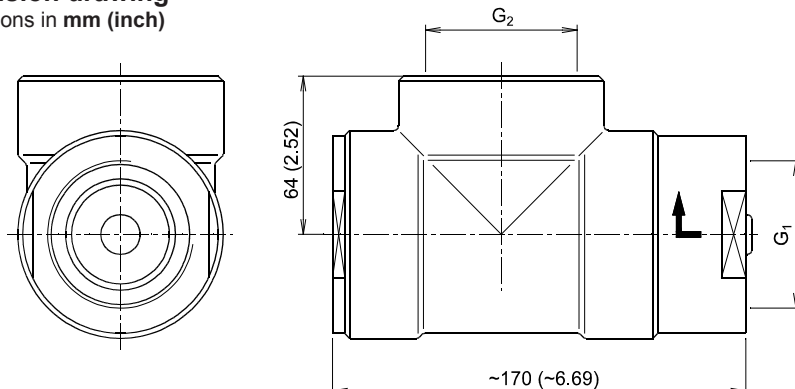
TypeMX-CR, MX-CR NPT
 Medium.....FK-5-1-12, HFC-227ea, nitrogen
 Nominal diameterDN50
 Working pressure60 bar (870 psi)
 Test pressure90 bar (1305 psi)
 Opening pressure≤ 3 bar (43.05 psi)
 Leakage rate at 20 bar (290 psi)≤ 20 bubbles / 1 min
 Operating temperature range:
-20 °C to +50 °C (-4 °F to 122 °F)
 UL / ULC / FM-18 °C to +50 °C (0 °F to 122 °F)
 Check valvecomplies with EN 12094-13
 CE conformityacc. to Construction Products Regulation (EU)
No. 305/2011

Material / Surface

Housingsteel, galvanized
 Internal componentsstainless steel
 Springstainless steel
 SealNBR

Dimension drawing

Dimensions in mm (inch)



Check valve	G ₁	G ₂
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

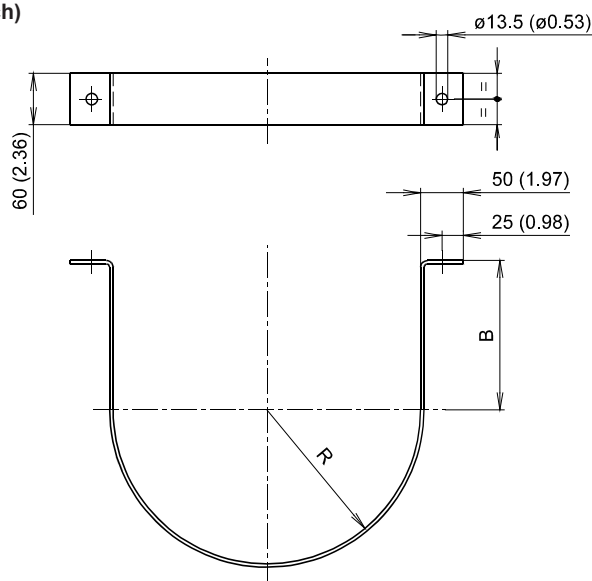
Materialsteel strip EN 10048 - 4,0 x 60, S235JR
Finishmatt-finished or powder-coated
.....RAL 9011 graphite black

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
CO₂ / IG / VSN 1230/200



Approvals / CE marking



¹⁾ Listed system covered by UL-File EX6388 (CO₂) 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. 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

TypeMX-BV
 Operating mediumCO₂, 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 valves235 bar (3408 psi)
 - pneumatic release device20 to 140 bar (290 to 2030 psi)
 Test pressure:
 - manifold, selector valves353 bar (5120 psi)
 - pneumatic release device210 bar (3045 psi)
 Flow characteristics (selector valve):
 - DN25equivalent length 0.18 m (0.59 ft)
 - DN40equivalent length 0.27 m (0.89 ft)
 - DN50equivalent length 0.37 m (1.21 ft)
 Test certificatein acc. with EN 10204 - 3.1 (pressure test)
 CE conformityacc. to Construction Products Regulation (EU)
No 305/2011

Product sheets also applying

Cylinder D55-H106P21.211.334
 Ball valves BV DN25, DN40 and DN50P21.211.334

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 CO₂, 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, CO₂, 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 contacts724420, P21.211.430
 Manual release lever BV <DN65, 497 mm long860346



Inert gas extinguishing technology

P21.211.331 - 2

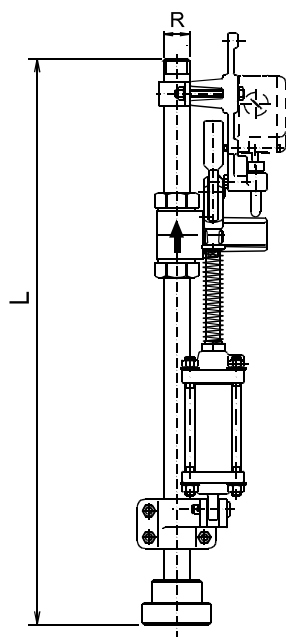
Selector valve 200 bar

Selector valve BV DN25 - 50

CO₂ / 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

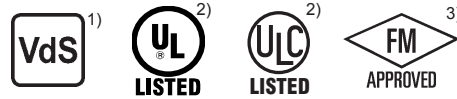
Selector valve accessories

P21.211.334 - 4

Push-button selector valve



Approvals



1) Part of the system approval VSN 1230 (S314012) und 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. 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 mediumCO₂ - gaseous, argon (IG-01),
.....nitrogen (IG-100), IG-55, IG-541, HFC-227ea, FK-5-1-12
Working pressure2 to 365 bar (29 to 5294 psi)
Temperature range-20 °C to +50 °C (-4 °F to 122 °F)
Thread connectionfor precision-drawn steel pipe 10 x 1
Position of deviceas desired

Material / Surface

Knurled screwbrass, nickel plated
Non-return valvesteel, 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.

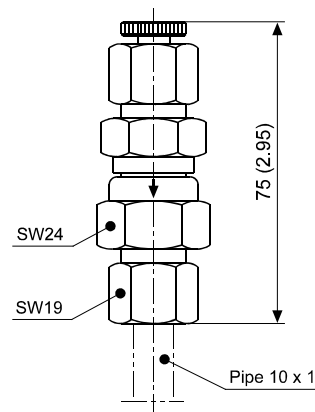
Included in delivery

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 N₂ 300), S312003 (CF N₂ 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

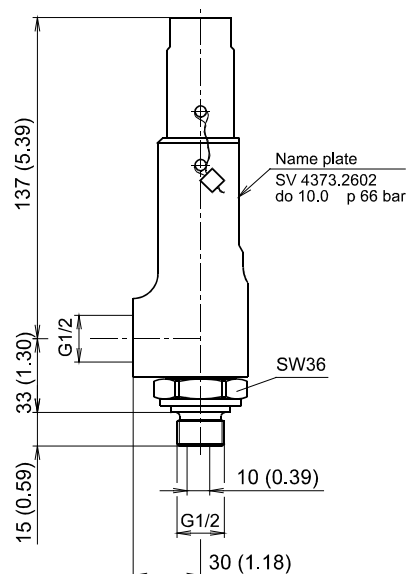
Type4373.2602
 MediumFK-5-1-12, HFC-227ea, argon, nitrogen
 Response pressure max. ...66 bar (957 psi) at +50 °C (122 °F)
 Operating temperature range:
-20 °C to +50 °C (-4 °F to 122 °F)
 UL / ULC / FM-18 °C to +50 °C (0 °F to 122 °F)
 Threadacc. to ISO 228
 Metal seal-270 °C to +280 °C (-454 °F to 536 °F)
 Test certificateEN 10204 - 3.1 (response pressure)
 Position of devicevertical
 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 CO₂ HP

Safety valve CO₂

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 N₂ 200 (S312003) / CF N₂ 300 (S312002)
- VSN 1230 (S314012) / VSN 200 (S313007)

2) Listed system covered by:

UL-File EX6388 (CO₂) 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

Type4373.2612
 Operating mediumCO₂ - gaseous
 Response pressure140 bar (2030 psi) at +50 °C (122 °F)
 Flow rateapprox. 3014 Nm³/h, gaseous
 Threadin acc. to ISO 228
 Metal seal-270 °C to +220 °C (-454 °F to 428 °F)
 Position of devicevertical

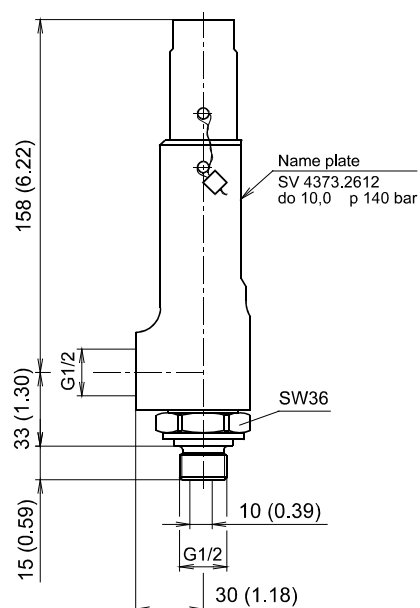
Safety valve according to pressure equipment directive
 97/23/EC category IV

Application

- Upstream piping in stationary CO₂ fire extinguishing systems
- Pilot pipe in stationary CO₂, 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 - 1**

Nozzle Halocarbon agents

Nozzles type NCD, VSN1230



Approvals



G308007



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. 888164: Nozzle NCD Rp1/2-180° VSN1230-Ms

Maintenance

see product information nozzles NCD part no. 888198

Nozzle			Part no.		ød ±0.1 mm (±0.0039 inch)		Weight approx. kg (lbs)
					min. mm (inch)	max. mm (inch)	
NCD 180° VSN 1230	Rp	1/2	888164	888168	3 (0.1181)	13 (0.5118)	0.18 (0.4)
		1	888165	888169		22.5 (0.8858)	1.12 (2.5)
		1.1/2	888166	888170		35.5 (1.3976)	3.50 (7.7)
		2	888167	888172		44.5 (1.7519)	2.82 (8.4)
	NPT	1/2	889061	889065	3 (0.1181)	13 (0.5118)	0.18 (0.4)
		1	889062	889066		22.5 (0.8858)	1.12 (2.5)
		1.1/2	889063	889067		35.5 (1.3976)	3.50 (7.7)
		2	889064	889068		44.5 (1.7519)	2.82 (8.4)
NCD 360° VSN 1230	Rp	1/2	888173	888177	3 (0.1181)	13 (0.5118)	0.18 (0.4)
		1	888174	888178		22.5 (0.8858)	1.13 (2.5)
		1.1/2	888175	888179		35.5 (1.3976)	3.50 (7.7)
		2	888176	888180		44.5 (1.7519)	2.83 (8.4)
	NPT	1/2	889069	889074	3 (0.1181)	13 (0.5118)	0.18 (0.4)
		1	889070	889075		22.5 (0.8858)	1.13 (2.5)
		1.1/2	889071	889076		35.5 (1.3976)	3.50 (7.7)
		2	889073	889077		44.5 (1.7519)	2.83 (8.4)

Order informations

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

Technical data

TypeNCD 180, NCD 360
 MediumFK-5-1-12
Trademark: Novec™ 1230 from 3M™
 Connection thread Rpacc. to EN 10226
 NPTacc. to ANSI/ASME B1.20.1
 Gradation of the bore hole diameters ødin 0.1 mm steps
 Coverage area, corage heightsee design manual

Working pressure:

.....min. 7 bar (102 psi), max. 60 bar (870 psi)
 UL / ULC / FMmin. 7.65 bar (111 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 Msbrass
 XCrNistainless steel



Extinguishing technology Halocarbon agents **P21.231.360 - 1**

Nozzle Halocarbon agents

Nozzles type NCD, VSN1230

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.

When using the VdS calculation program the number of orifices, for both variants, is always 1.

Using the DesignManager there are other limitations in the minimal and maximal nozzle bore diameters.
Details see DesignManager calculation.

Application

The nozzles NCD are used as room protection nozzles in accordance with system approval in VSN 1230 fire extinguishing systems using the extinguishing agent Novec™ 1230.

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 (NCD 180, NCD 360), bore diameter d (x,x),
approval sign (VdS), serial number

Included in delivery

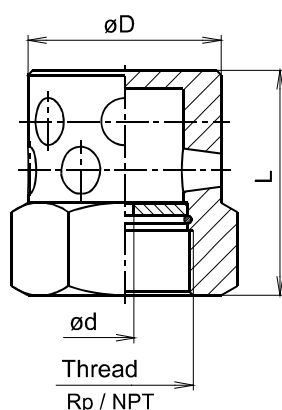
nozzles type NCD VSN 1230

product information nozzles NCD part no. 888198

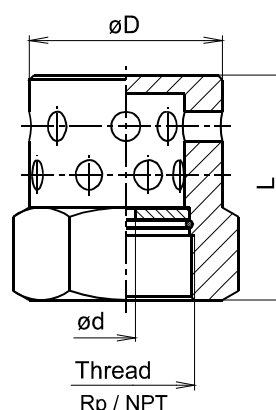
Dimension drawing

Dimensions in mm (inch)

NCD 180° VSN 1230



NCD 360° VSN 1230



Nozzle	Thread Rp / NPT	ød ±0.1 (±0.0039)		L	øD	SW
		min.	max.			
NCD 180° VSN 1230	1/2	3 (0.1181)	13 (0.5118)	56 (2.20)	23 (0.90)	30
	1		22.5 (0.8858)	96 (3.77)	50 (1.96)	50
NCD 360° VSN 1230	1.1/2		35.5 (1.3976)	96 (3.77)	84 (3.34)	85
	2		44.5 (1.7519)	97 (3.81)	84 (3.34)	85



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 pressure60 bar (870 psi)

Thread NPTacc. to ANSI / ASME B1.20.1-NPT

ISOacc. to EN 10226

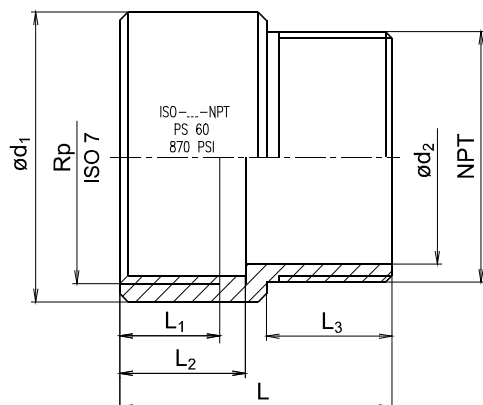
Materialsteel, galvanized acc. to EN 12329 - Fe/Zn12

Application

To connect VSN 1230/200 system parts with ISO thread to NPT pipes.

Dimension drawing

Dimensions in mm (inch)



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



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 (CO₂) 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 ₂ , 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 ₂ , 147 g/min
Consumption by using a CO ₂ 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 makrofon877120, P21.211.410

Included in delivery

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



Inert gas extinguishing technology

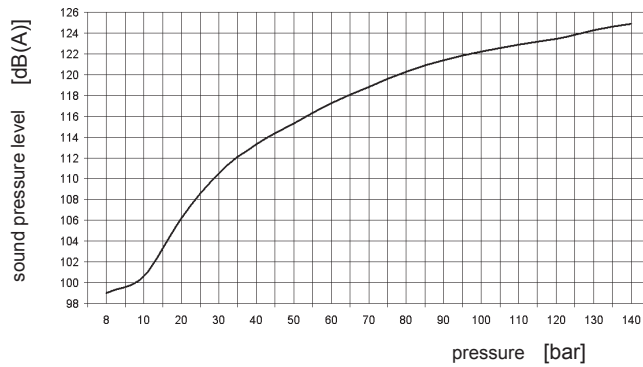
Alarm device

P21.211.410 - 1

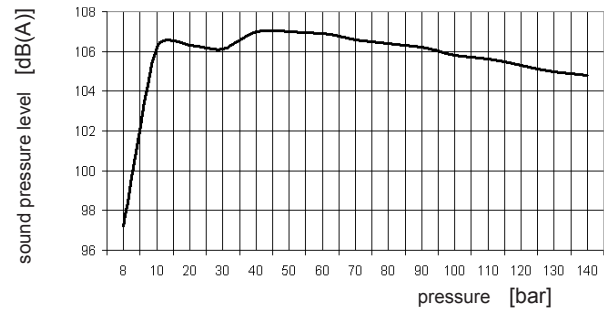
Makrofon

A-weighted sound pressure level over the pressure range

without silencer



with silencer

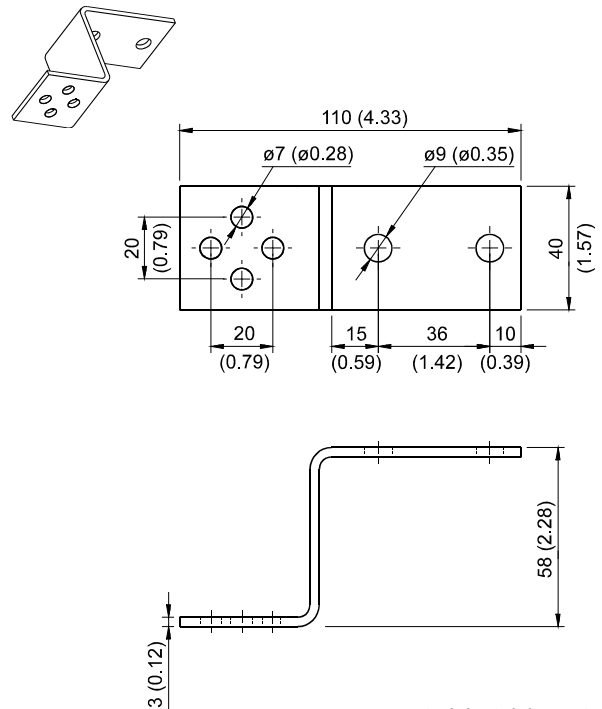
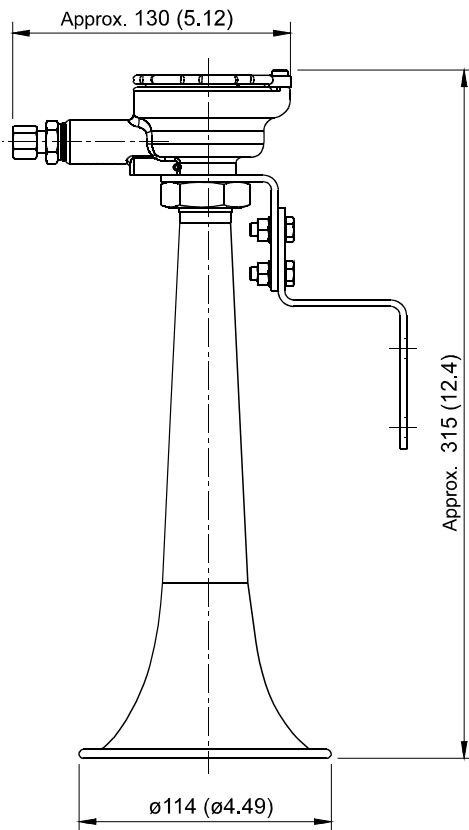


Note: The above shown curves were determined in the laboratory. Due to the influencing factors given in situ, the real values may deviate from the curves.

Dimension drawing

Dimensions in mm (inch)

Makrofon dimensions and bracket (large) dimensions



material: stainless steel

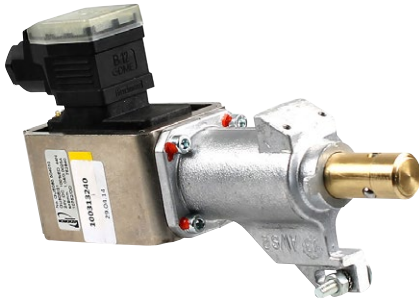


Inert gas extinguishing technology

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 N₂ 200 (S312003) / CF N₂ 300 (S312002)
- 2) Listed system for release device 24 V DC only covered by UL-File EX6388 (CO₂) 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

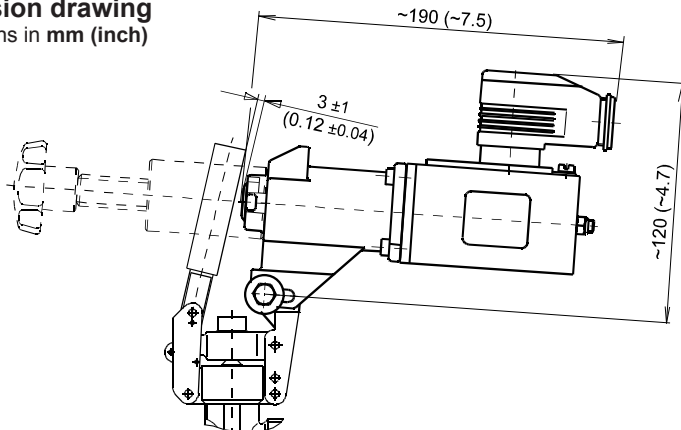
Temperature range
 Solenoid-20 °C to +50 °C (-4 °F to 122 °F)
 Magnetic force44 N
 Switching duration100 %
 Voltage24 V DC (18 - 28 V DC) / 230 V AC
 Current1.04 A / 0.12 A
 Stroke9 mm (0.35")
 IP codeIP 54
 (by accordingly covering of the pull and pressure rod side)

Application

The release device EM may be used only in accordance with the "documentation of special extinguishing systems" in fixed CO₂, 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 LÖ782239
 - Product information card MVA LÖ904653

Not included in delivery

Reset tool for release device EM885530, P21.211.420
 Bracket for reset tool release device EM ...886367, P21.211.420
 Monitoring for release device EM885740, 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 N₂ 200 (S312003) / CF N₂ 300 (S312002)
- Argotec CO₂ ND-1 (S398012), electrical release
- Argotec CO₂ ND-1 (S398013), non-electrical release
- Argotec N₂ 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 mediumargon (IG-01), nitrogen (IG-100),
.....IG-55, IG-541, carbon dioxide (CO₂) / 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 DN4pipe 6 x 1
Installation positionvertical, see page 2

Material / Surface

Housingbrass
GasketNBR
Ball1.4301

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

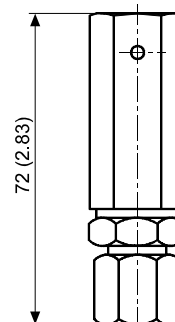
Safety device malfunction pressure SFD DN4
Product information safety device malfunction pressure SFD
DN4 part no. 885867

Not included in delivery

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

Dimension drawing

Dimensions in mm (inch)



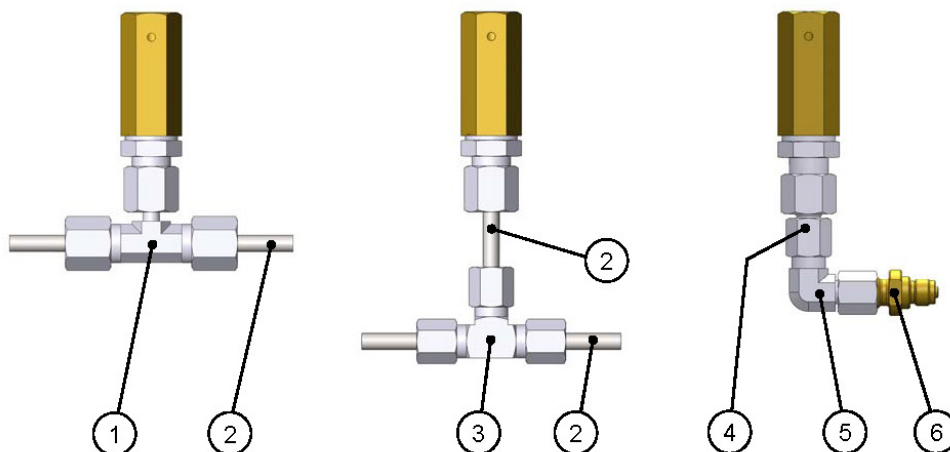


Inert gas extinguishing technology Control device

P21.211.420 - 6

Safety device malfunction pressure SFD DN4

Installations examples



Not included in delivery

- Item 1: Union EVT 06 SA3Cpart no. 886406
- Item 2: Pipe 6 x 1 mm (0.236 x 0.039 inch)part no. 823563
- Item 3: Union T 6-PLA3Cpart no. 125633
- Item 4: Union GZR06L/06SCFpart no. 910650
- Item 5: Union EW 06 L CFpart no. 889145
- Item 6: Adapter M12x1.5 – G1/8part no. 887644
(for release device pneumatic or pneumatic/manual)

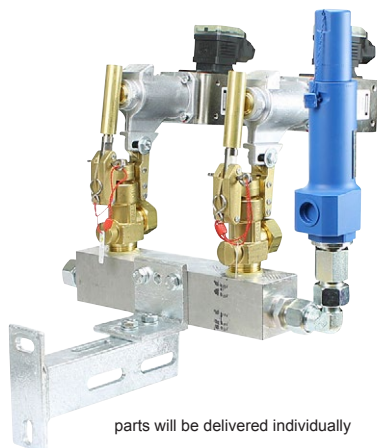


Inert gas extinguishing technology

Control device

P21.211.420 - 8

Pilot control manifold CO₂ - 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 N₂ 200 (S312003) / CF N₂ 300 (S312002)
- Argotec CO₂ ND-1 (S398012), electrical release
- VSN 1230 (S314012) / VSN 200 (S313007)

2) Listed system covered by UL-File EX6388 (CO₂) 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 CO₂ - 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 mediumcarbon dioxide (CO₂)
 Working pressure140 bar (2030 psi)
 Test pressure235 bar (3408 psi)
 Temperature range-20 °C to +50 °C (-4 °F to +122 °F)
 Connected voltage24 V DC

Product sheets also applying

Safety valve G1/2 - 140 bar886282, P21.214.341
 Argon cylinder valve K85-20.0-S49871014, P21.211.131
 Lever - cylinder valve885603, P21.211.420
 Release device EM 24 V DC885738, P21.211.420

Application

The pilot control manifold DN 15 may only be used in accordance with system approval in stationary CO₂, 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 CO₂ 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 CO₂ - DN15 (not pre-assembled)
 Product information valve DN15 part no. 876772

Not included in delivery

Connection to valve:
 Adapter for connecting CO₂ - Ermeto DN4827325
 DN8855425
 Monitoring for release device EM885740, P21.211.430



Inert gas extinguishing technology

Control device

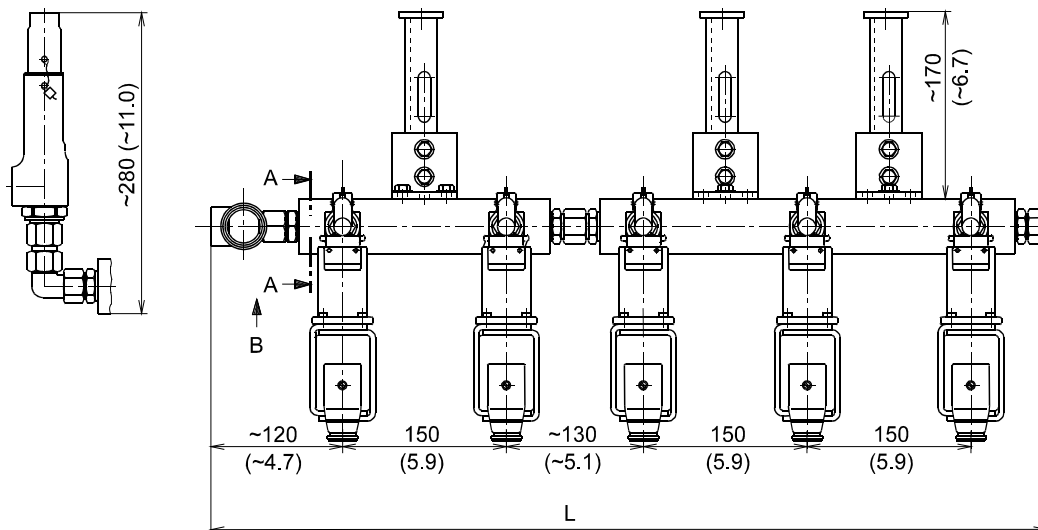
P21.211.420 - 8

Pilot control manifold CO₂ - DN15

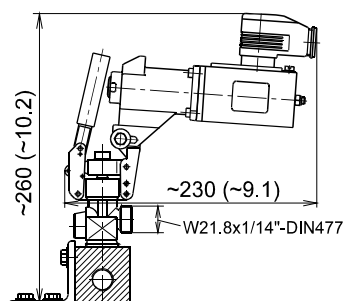
Dimension drawing

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



G301010



LISTED



LISTED



APPROVED



0786-CPD-30007

¹⁾ Listed system covered by UL-File EX6388 (CO₂) 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 mediumCO₂, argon (IG-01), nitrogen (IG-100),
IG-55, IG-541
 Working pressure 140 bar (2030 psi)
 Nominal diameterDN6
 Connection threadsM12 x 1.5
 Temperature range-30 °C to +80 °C
 Connectioncone for 6 mm steel pipe
 Disable devicecomplies with EN 12094-6
 CE conformityacc. to Construction Products Regulation (EU)
No. 305/2011

Application

The disable device may only be used in accordance with system approval in stationary CO₂, 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 DN6885375
 Padlock 635/40131777
 Retainer shuttle valve873497
 2x Cap nut M 6-LA3C173959
 2x Progressive ring DPR 6-L/S-A3D208208
 Product information disable device complete878069
 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 256-11Z828482, P21.211.430
 2x Cheese-head screw DIN84-M4x25-brass106745
 2x Washer DIN125-B 4,3 brass109734



Inert gas extinguishing technology

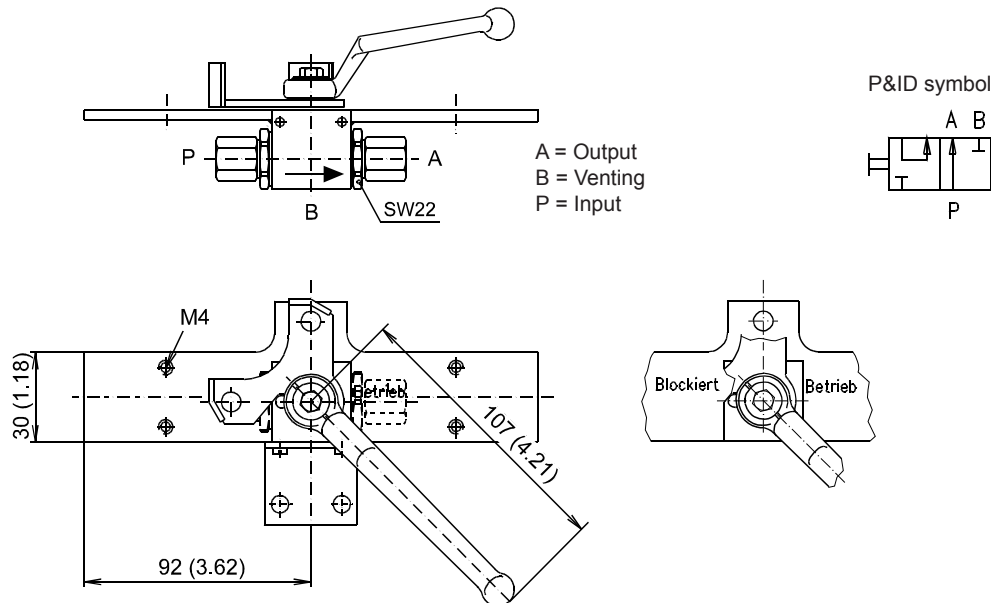
Control device

P21.211.420 - 10

Disable device complete

Dimension drawing

Dimensions in mm (inch)



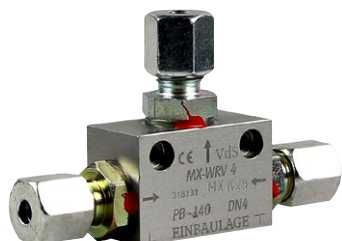


Inert gas extinguishing technology

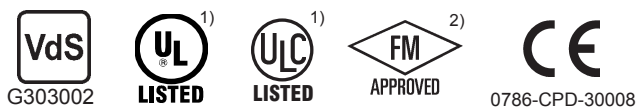
Control device

P21.211.420 - 11

Shuttle non-return valves WRV DN4 and DN8



Approvals / CE marking



1) Listed system covered by UL-File EX6388 (CO₂) 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

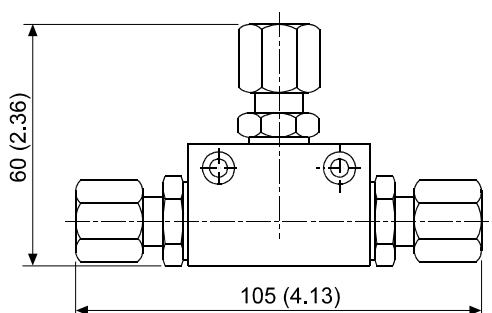
Operating mediumCO₂ - gaseous
Working pressure2 to 140 bar (29 to 2030 psi)
Test pressure210 bar (3045 psi)
Rate of pressure risemin. 3 bar/s (43,5 psi/s)
Installation positionfeedings only horizontal
Shuttle non-return valvescomplies with EN 12094-13
CE conformityacc. to Construction Products Regulation (EU)
.....No. 305/2011

Material / Surface

Housingaluminium
GasketNBR
Ballstainless steel

Dimension drawing

Dimensions in mm (inch)



Application

The shuttle non-return valve is used in fixed high pressure CO₂, 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

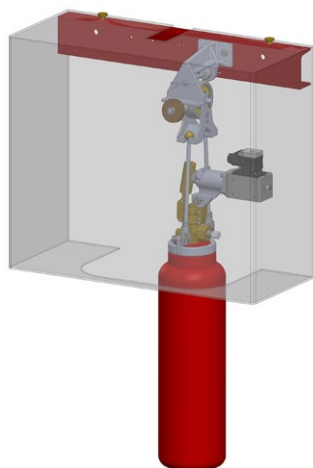


Extinguishing technology CO₂ HP

Control device CO₂ HP components

P21.214.420 - 3

Pneumatic release device PAE - CO₂ 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 N₂ 200 (S312003) / CF N₂ 300 (S312002)
- VSN 1230 (S314012) / VSN 200 (S313007)

2) Listed system covered by:

UL-File EX6388 (CO₂) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

SAP designation

e.g. part no. 885335: PAE-CO₂-EM-4kg compl.

Maintenance

see operating instruction PAE-CO₂ part no. 885374

Designation	Part no.	Weight approx.
Pneumatic release device PAE - CO ₂ electrical with protective cover	4 kg	885335
	8 kg	885341

Technical data

Operating mediumCO₂ - gaseous
 Working pressure140 bar (2030 psi)
 Test pressure210 bar (3045 psi)
 Amount filled4 kg (8.82 lbs) or 8 kg (17.64 lbs)
 Pilot cylinder volume5.4 l or 10.7 l
 Thread connectionfor precision steel pipe 6x1

Product sheets also applying

Cylinder with valve 5.4 l / 10.7 l:

- CO₂ - Cylinder EUP21.214.113
 Weighing device WE4P21.214.210
 Weight for weighing device 0.16 kg / 0.3 kgP21.214.210
 Release device EM 24 V DCP21.211.420
 Lever - cylinder valve EM releaseP21.211.420

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 (CO₂) 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 (CO₂) 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 - CO₂ EM 4 kg885334
 8 kg885338
 Protective cover PAE885322
 Operating instruction PAE-CO₂ part no. 885374
 as well as fastenings

Not included in delivery

Pre-assembled connection pipesee operating instruction PAE
 Support weighing device PAE886350, P21.214.720
 Reset tool885530, P21.211.420
 Monitoring loss pneum. actuation device888998, P21.214.430
 Monitoring for release device EM885740, P21.211.430



Extinguishing technology CO₂ HP

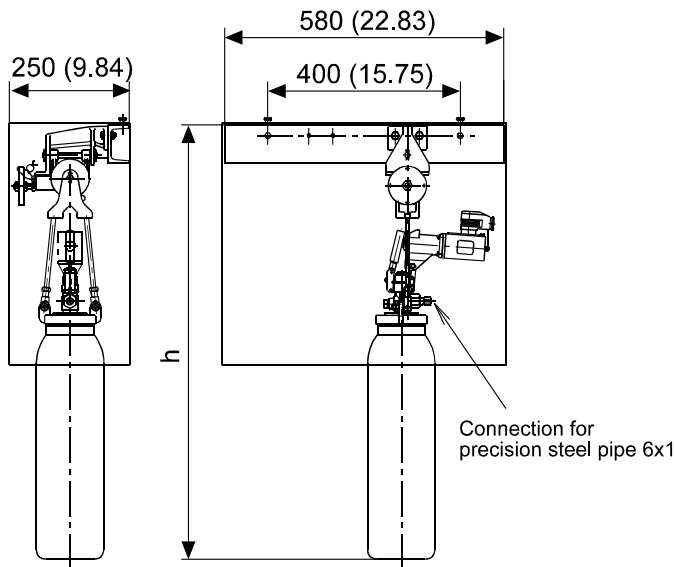
Control device CO₂ HP components

P21.214.420 - 3

Pneumatic release device PAE - CO₂
electrical with protective cover

Dimension drawing

Dimensions in mm (inch)



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

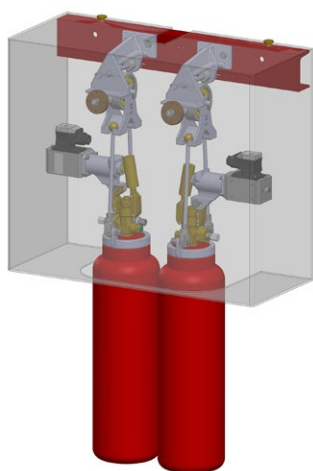


Extinguishing technology CO₂ HP

Control device CO₂ HP components

P21.214.420 - 4

Pneumatic release device PAE - CO₂ 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 N₂ 200 (S312003) / CF N₂ 300 (S312002)
- VSN 1230 (S314012) / VSN 200 (S313007)

2) Listed system covered by:

UL-File EX6388 (CO₂) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

SAP designation

e.g. part no. 885337: PAE-CO₂-EM-4kg reserve compl.

Maintenance

see operating instruction PAE-CO₂ part no. 885374

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

Technical data

Operating mediumCO₂ - gaseous
 Working pressure140 bar (2030 psi)
 Test pressure210 bar (3045 psi)
 Amount filled2x 4 kg (2x 8.82 lbs) or 2x 8 kg (2x 17.64 lbs)
 Pilot cylinder volume5.4 l or 10.7 l
 Thread connectionfor precision steel pipe 6x1

Product sheets also applying

Cylinder with valve 5.4 l / 10.7 l:

- CO₂ - Cylinder EUP21.214.113
 Weighing device WE4P21.214.210
 Weight for weighing device 0.16 kg / 0.3 kgP21.214.210
 Release device EM 24 V DCP21.211.420
 Lever - cylinder valve EM releaseP21.211.420

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 (CO₂) 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 (CO₂) 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 - CO₂ EM reserve 4 kg885336
 8 kg885342
 Protective cover PAE885322
 Operating instruction PAE-CO₂ part no. 885374
 as well as fastenings

Not included in delivery

Pre-assembled connection pipesee operating instruction PAE
 Support weighing device PAE886350, P21.214.720
 Reset tool885530, P21.211.420
 Monitoring loss pneum. actuation device888998, P21.214.430
 Monitoring for release device EM885740, P21.211.430



Extinguishing technology CO₂ HP

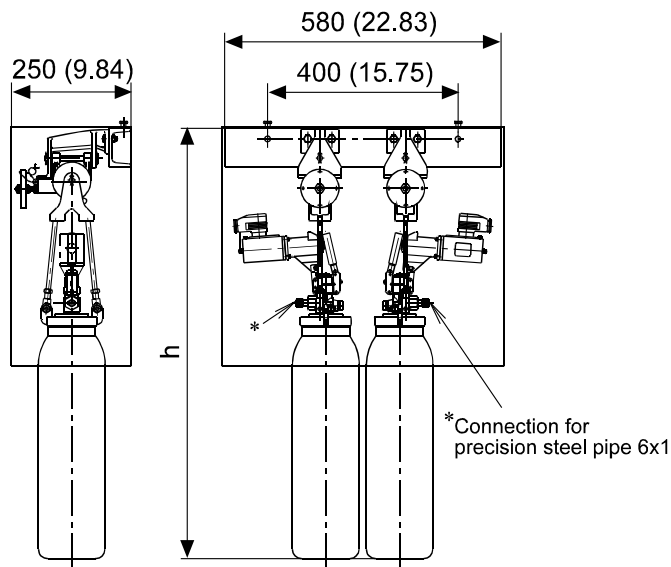
Control device CO₂ HP components

P21.214.420 - 4

Pneumatic release device PAE - CO₂
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)

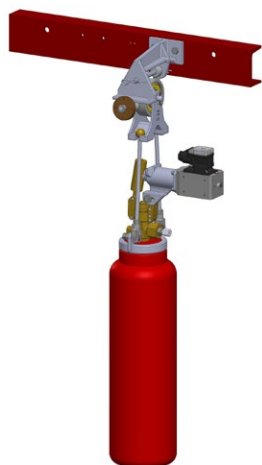


Extinguishing technology CO₂ HP

Control device CO₂ HP components

P21.214.420 - 5

Pneumatic release device PAE - CO₂ 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 N₂ 200 (S312003) / CF N₂ 300 (S312002)
- VSN 1230 (S314012) / VSN 200 (S313007)

2) Listed system covered by:

UL-File EX6388 (CO₂) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

SAP designation

e.g. part no. 885334: PAE-CO₂-EM-4kg

Maintenance

see operating instruction PAE-CO₂ part no. 885374

Designation	Part no.	Weight approx.
Pneumatic release device PAE - CO ₂ electrical without protective cover	4 kg	885334
	8 kg	885338

Technical data

Operating medium	CO ₂ - 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 ₂ - 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 (CO₂) 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 (CO₂) 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 ₂ EM 4 kg	885334
8 kg	885338

Operating instruction PAE-CO₂ part no. 885374
as well as fastenings

Not included in delivery

Pre-assembled connection pipesee operating instruction PAE
Support weighing device PAE886350, P21.214.720
Reset tool885530, P21.211.420
Monitoring loss pneum. actuation device888998, P21.214.430
Monitoring for release device EM885740, P21.211.430



Extinguishing technology CO₂ HP

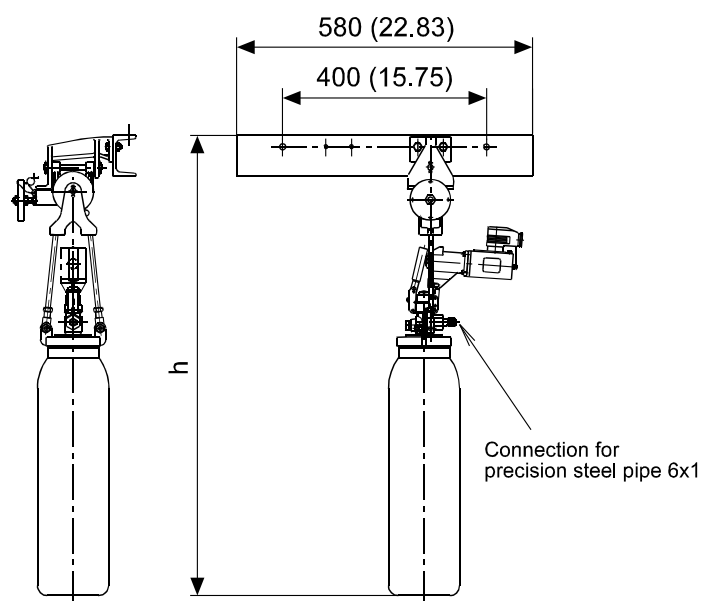
Control device CO₂ HP components

P21.214.420 - 5

Pneum. Auslöseeinrichtung PAE - CO₂
elektrisch ohne Schutzhaube

Dimension drawing

Dimensions in mm (inch)



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

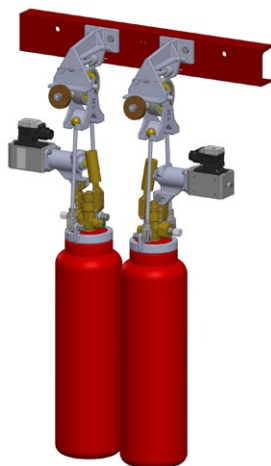


Extinguishing technology CO₂ HP

Control device CO₂ HP components

P21.214.420 - 6

Pneumatic release device PAE - CO₂ 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 N₂ 200 (S312003) / CF N₂ 300 (S312002)
- VSN 1230 (S314012) / VSN 200 (S313007)

2) Listed system covered by:

UL-File EX6388 (CO₂) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

SAP designation

e.g. part no. 885336: PAE-CO₂-EM-4kg reserve

Maintenance

see operating instruction PAE-CO₂ part no. 885374

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

Technical data

Operating mediumCO₂ - gaseous
 Working pressure140 bar (2030 psi)
 Test pressure210 bar (3045 psi)
 Amount filled2x 4 kg (2x 8.82 lbs) or 2x 8 kg (2x 17.64 lbs)
 Pilot cylinder volume5.4 l or 10.7 l
 Thread connectionfor precision steel pipe 6x1

Product sheets also applying

Cylinder with valve 5.4 l / 10.7 l:

- CO₂ - Cylinder EUP21.214.113
 Weighing device WE4P21.214.210
 Weight for weighing device 0.16 kg / 0.3 kgP21.214.210
 Release device EM 24 V DCP21.211.420
 Lever - cylinder valve EM releaseP21.211.420

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 (CO₂) 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 (CO₂) 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 - CO₂ EM reserve 4 kg885336
 8 kg885342

Operating instruction PAE-CO₂ part no. 885374
 as well as fastenings

Not included in delivery

Pre-assembled connection pipesee operating instruction PAE
 Support weighing device PAE886350, P21.214.720
 Reset tool885530, P21.211.420
 Monitoring loss pneum. actuation device888998, P21.214.430
 Monitoring for release device EM885740, P21.211.430



Extinguishing technology CO₂ HP

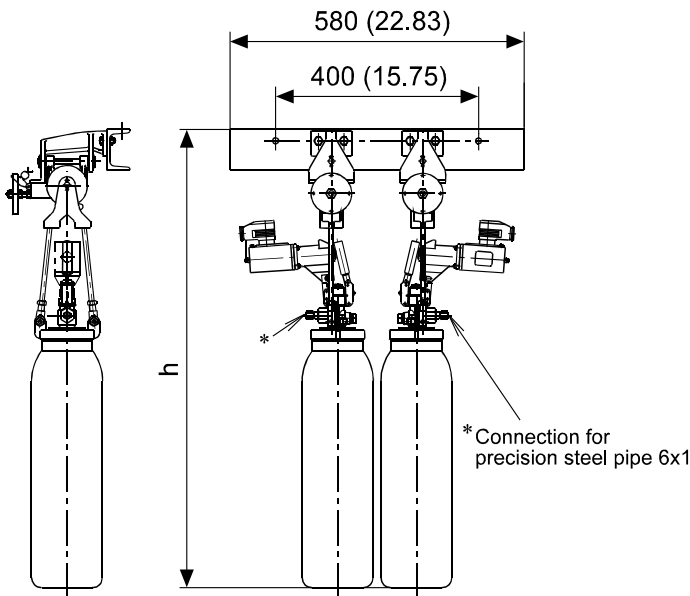
Control device CO₂ HP components

P21.214.420 - 6

Pneumatic release device PAE - CO₂
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)

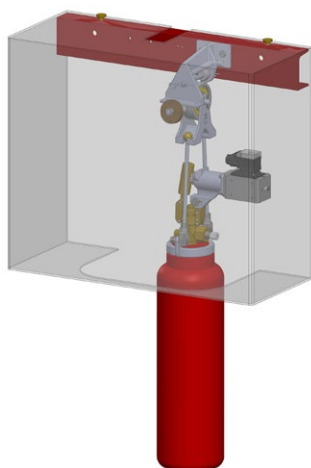


Extinguishing technology CO₂ HP

Control device CO₂ HP components

P21.214.420 - 7

Pneumatic release device PAE - CO₂ 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 (CO₂) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

SAP designation

e.g. part no. 911751: PAE-CO₂-EM-3,6kg compl. FM/UL

Maintenance

see operating instruction PAE-CO₂ part no. 885374

Designation		Part no.	Amount filled	Weight approx.
Pneumatic release device PAE - CO ₂ 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 mediumCO₂ - gaseous
Working pressure140 bar (2030 psi)
Test pressure210 bar (3045 psi)
Pilot cylinder volume5.4 l or 10.7 l
Thread connectionfor precision steel pipe 6x1

Product sheets also applying

Cylinder with valve 5.4 l / 10.7 l:

- CO₂ - Cylinder UL, EUP21.214.113
Weighing device WE4P21.214.210
Weight for weighing device 0.16 kg / 0.3 kgP21.214.210
Release device EM 24 V DCP21.211.420
Lever - cylinder valve EM releaseP21.211.420

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 (CO₂) 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 (CO₂) 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 - CO₂ EM FM/UL 3.6 kg911750
FM/UL 7.1 kg911758
Protective cover PAE885322
Adapter connection NPT911762
Operating instruction PAE-CO₂ part no. 885374
as well as fastenings

Not included in delivery

Pre-assembled connection pipesee operating instruction PAE
Support weighing device PAE886350, P21.214.720
Reset tool885530, P21.211.420
Monitoring loss pneum. actuation device888998, P21.214.430
Monitoring for release device EM885740, P21.211.430



Extinguishing technology CO₂ HP

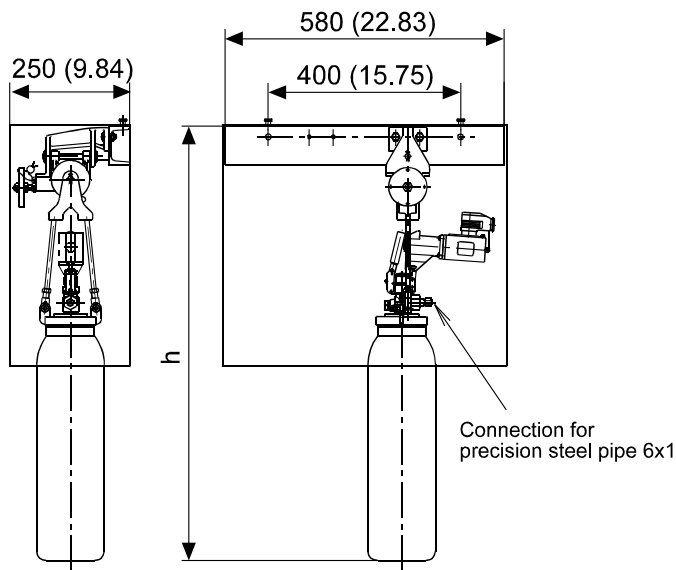
Control device CO₂ HP components

P21.214.420 - 7

Pneumatic release device PAE - CO₂
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)

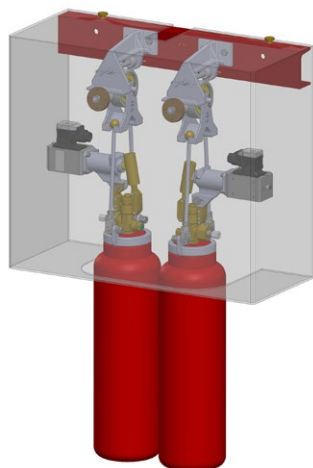


Extinguishing technology CO₂ HP

Control device CO₂ HP components

P21.214.420 - 8

Pneumatic release device PAE - CO₂ 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 (CO₂) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

SAP designation

e.g. part no. 911753: PAE-CO₂-EM-3,6kg reserve compl. FM/UL

Maintenance

see operating instruction PAE-CO₂ part no. 885374

Designation		Part no.	Amount filled	Weight approx.
Pneumatic release device PAE - CO ₂ 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 mediumCO₂ - gaseous
Working pressure140 bar (2030 psi)
Test pressure210 bar (3045 psi)
Pilot cylinder volume5.4 l or 10.7 l
Thread connectionfor precision steel pipe 6x1

Product sheets also applying

Cylinder with valve 5.4 l / 10.7 l:

- CO₂ - Cylinder UL, EUP21.214.113
Weighing device WE4P21.214.210
Weight for weighing device 0.16 kg / 0.3 kgP21.214.210
Release device EM 24 V DCP21.211.420
Lever - cylinder valve EM releaseP21.211.420

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 (CO₂) 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 (CO₂) 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 - CO₂ EM reserve FM/UL 3.6 kg911752
FM/UL 7.1 kg911760

Protective cover PAE885322

Adapter connection NPT911762

Operating instruction PAE-CO₂ part no. 885374

as well as fastenings

Not included in delivery

Pre-assembled connection pipesee operating instruction PAE
Support weighing device PAE886350, P21.214.720
Reset tool885530, P21.211.420
Monitoring loss pneum. actuation device888998, P21.214.430
Monitoring for release device EM885740, P21.211.430



Extinguishing technology CO₂ HP

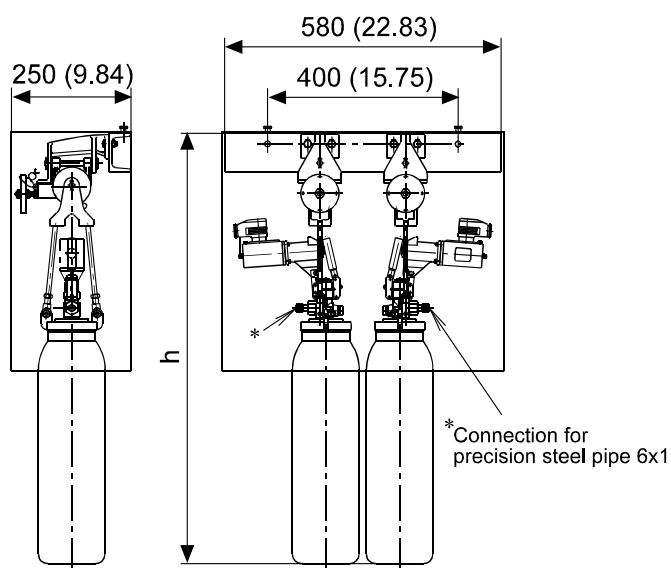
Control device CO₂ HP components

P21.214.420 - 8

**Pneumatic release device PAE - CO₂ 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)

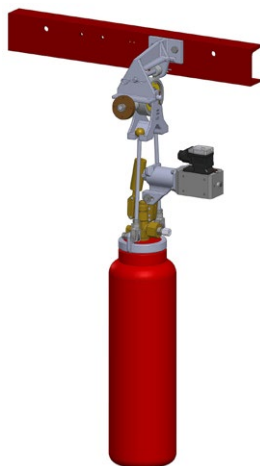


Extinguishing technology CO₂ HP

Control device CO₂ HP components

P21.214.420 - 9

Pneumatic release device PAE - CO₂ 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 (CO₂) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

SAP designation

e.g. part no. 911750: PAE-CO₂-EM-3.6kg FM/UL

Maintenance

see operating instruction PAE-CO₂ part no. 885374

Designation		Part no.	Amount filled	Weight approx.
Pneumatic release device PAE - CO ₂ 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 mediumCO₂ - gaseous
Working pressure140 bar (2030 psi)
Test pressure210 bar (3045 psi)
Pilot cylinder volume5.4 l or 10.7 l
Thread connectionfor precision steel pipe 6x1

Product sheets also applying

Cylinder with valve 5.4 l / 10.7 l:

- CO₂ - Cylinder UL, EUP21.214.113
Weighing device WE4P21.214.210
Weight for weighing device 0.16 kg / 0.3 kgP21.214.210
Release device EM 24 V DCP21.211.420
Lever - cylinder valve EM releaseP21.211.420

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 (CO₂) 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 (CO₂) 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 - CO₂ EM FM/UL 3.6 kg911750
FM/UL 7.1 kg911758
Adapter connection NPT911762
Operating instruction PAE-CO₂ part no. 885374
as well as fastenings

Not included in delivery

Pre-assembled connection pipesee operating instruction PAE
Support weighing device PAE886350, P21.214.720
Reset tool885530, P21.211.420
Monitoring loss pneum. actuation device888998, P21.214.430
Monitoring for release device EM885740, P21.211.430



Extinguishing technology CO₂ HP

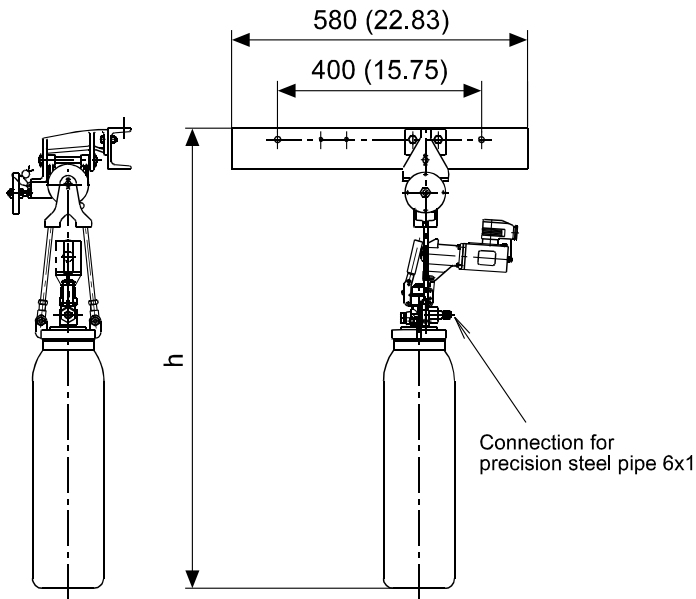
Control device CO₂ HP components

P21.214.420 - 9

Pneumatic release device PAE - CO₂
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)

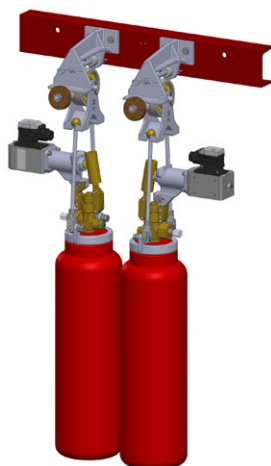


Extinguishing technology CO₂ HP

Control device CO₂ HP components

P21.214.420 - 10

Pneumatic release device PAE - CO₂ 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 (CO₂) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

SAP designation

e.g. part no. 911752: PAE-CO₂-EM-3,6kg reserve FM/UL

Maintenance

see operating instruction PAE-CO₂ part no. 885374

Designation		Part no.	Amount filled	Weight approx.
Pneumatic release device PAE - CO ₂ 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 mediumCO₂ - gaseous
Working pressure140 bar (2030 psi)
Test pressure210 bar (3045 psi)
Pilot cylinder volume5.4 l or 10.7 l
Thread connectionfor precision steel pipe 6x1

Product sheets also applying

Cylinder with valve 5.4 l / 10.7 l:

- CO₂ - Cylinder UL, EUP21.214.113
Weighing device WE4P21.214.210
Weight for weighing device 0.16 kg / 0.3 kgP21.214.210
Release device EM 24 V DCP21.211.420
Lever - cylinder valve EM releaseP21.211.420

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 (CO₂) 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 (CO₂) 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 - CO₂ EM reserve FM/UL 3.6 kg911752
FM/UL 7.1 kg911760
Adapter connection NPT911762
Operating instruction PAE-CO₂ part no. 885374
as well as fastenings

Not included in delivery

Pre-assembled connection pipesee operating instruction PAE
Support weighing device PAE886350, P21.214.720
Reset tool885530, P21.211.420
Monitoring loss pneum. actuation device888998, P21.214.430
Monitoring for release device EM885740, P21.211.430



Extinguishing technology CO₂ HP

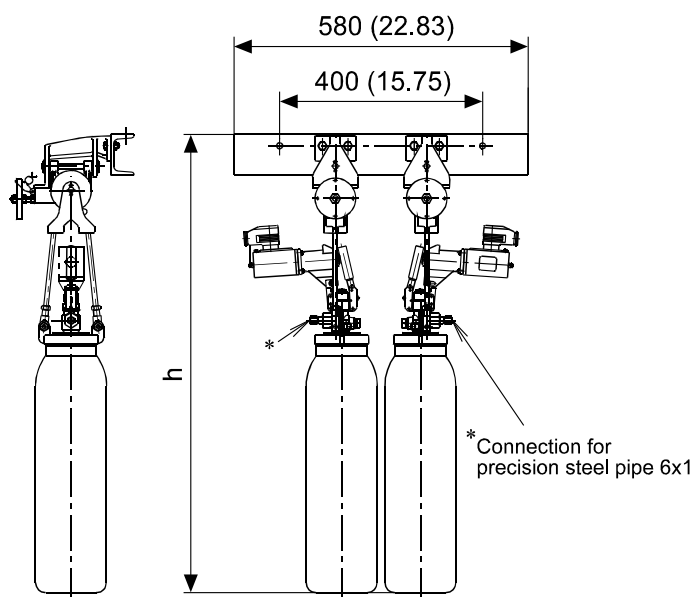
Control device CO₂ HP components

P21.214.420 - 10

**Pneumatic release device PAE - CO₂ 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)

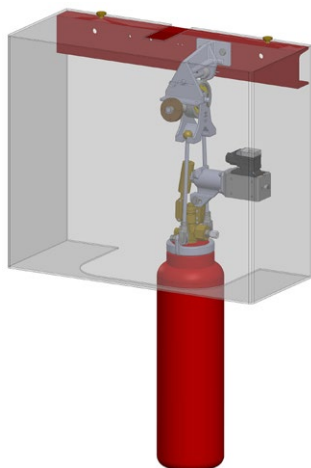


Extinguishing technology CO₂ HP

Control device CO₂ HP components

P21.214.420 - 11

Pneumatic release device PAE - CO₂ 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 (CO₂) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

SAP designation

part no. 911755: PAE-CO₂-EM-6,8kg compl. DOT FM/UL

Maintenance

see operating instruction PAE-CO₂ part no. 885374

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

³⁾ Cylinder with valve are not included in delivery

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

Technical data

Operating mediumCO₂ - gaseous
Working pressure140 bar (2030 psi)
Test pressure210 bar (3045 psi)
Pilot cylinder volume10.7 l (2.83 US.liq.gal)
Thread connectionfor precision steel pipe 6x1

Product sheets also applying

Weighing device WE4P21.214.210
Weight for weighing device 0.16 kg / 0.3 kgP21.214.210
Release device EM 24 V DCP21.211.420
Lever - cylinder valve EM releaseP21.211.420

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 (CO₂) 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 (CO₂) 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 - CO₂ EM DOT FM/UL 6.8 kg911754
Protective cover PAE885322
Adapter connection NPT911762
Operating instruction PAE-CO₂ part no. 885374
as well as fastenings

Not included in delivery

Cylinder with valve 10.7 l:

- CO₂ - Cylinder DOT - UL
Pre-assembled connection pipesee operating instruction PAE
Support weighing device PAE886350, P21.214.720
Reset tool885530, P21.211.420
Monitoring loss pneum. actuation device888998, P21.214.430
Monitoring for release device EM885740, P21.211.430



Extinguishing technology CO₂ HP

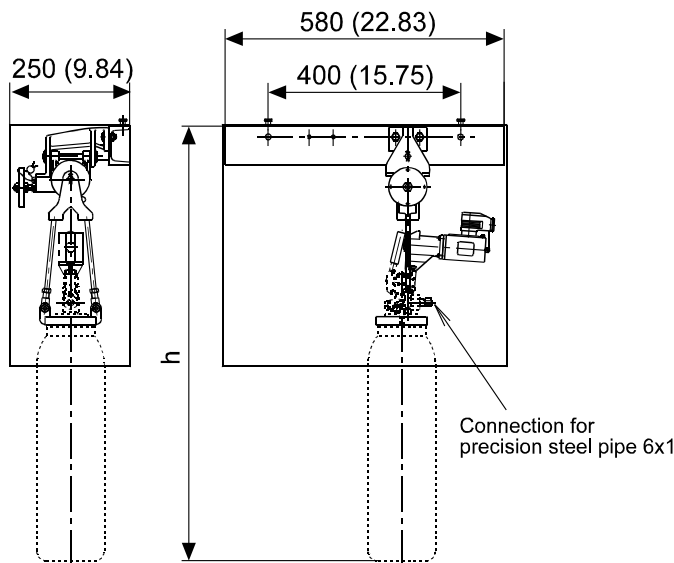
Control device CO₂ HP components

P21.214.420 - 11

Pneumatic release device PAE - CO₂
electrical with protective cover, DOT FM/UL

Dimension drawing

Dimensions in mm (inch)



PAE	h approx.
6.8 kg	1335 (52.6)

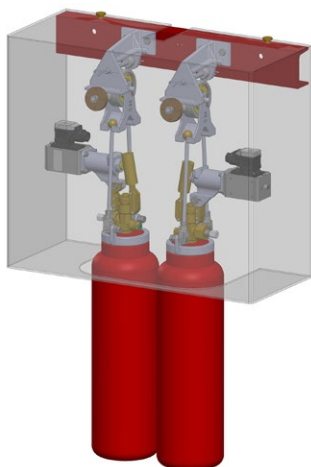


Extinguishing technology CO₂ HP

Control device CO₂ HP components

P21.214.420 - 12

Pneumatic release device PAE - CO₂ 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 (CO₂) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

SAP designation

part no. 911757: PAE-CO₂-EM-6,8kg reserve compl. DOT FM/UL

Maintenance

see operating instruction PAE-CO₂ part no. 885374

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

³⁾ Cylinder with valve are not included in delivery

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

Technical data

Operating mediumCO₂ - gaseous
Working pressure140 bar (2030 psi)
Test pressure210 bar (3045 psi)
Pilot cylinder volume10.7 l (2.83 US.liq.gal)
Thread connectionfor precision steel pipe 6x1

Product sheets also applying

Weighing device WE4P21.214.210
Weight for weighing device 0.16 kg / 0.3 kgP21.214.210
Release device EM 24 V DCP21.211.420
Lever - cylinder valve EM releaseP21.211.420

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 (CO₂) 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 (CO₂) 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 - CO₂ EM DOT FM/UL 6.8 kg911754
Protective cover PAE885322
Adapter connection NPT911762
Operating instruction PAE-CO₂ part no. 885374
as well as fastenings

Not included in delivery

Cylinder with valve 10.7 l:

- CO₂ - Cylinder DOT - UL
Pre-assembled connection pipesee operating instruction PAE
Support weighing device PAE886350, P21.214.720
Reset tool885530, P21.211.420
Monitoring loss pneum. actuation device888998, P21.214.430
Monitoring for release device EM885740, P21.211.430



Extinguishing technology CO₂ HP

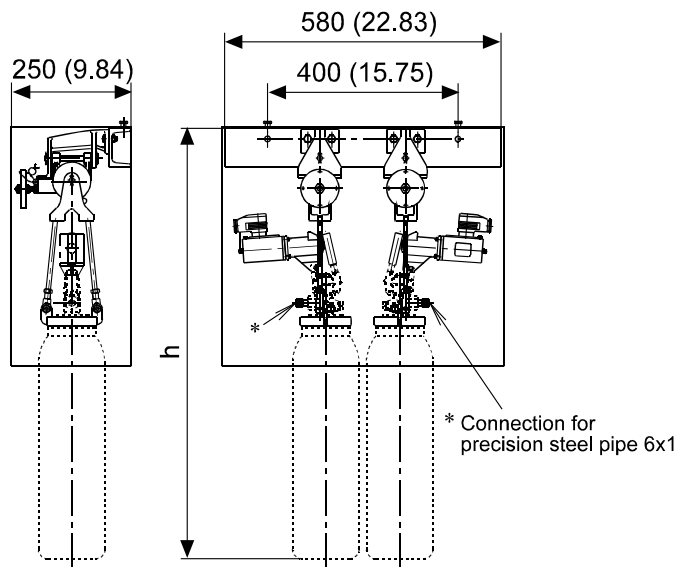
P21.214.420 - 12

Control device CO₂ HP components

Pneumatic release device PAE - CO₂ electr.
with protective cover, with reserve, DOT FM/UL

Dimension drawing

Dimensions in mm (inch)



PAE	h approx.
6.8 kg	1335 (52.6)

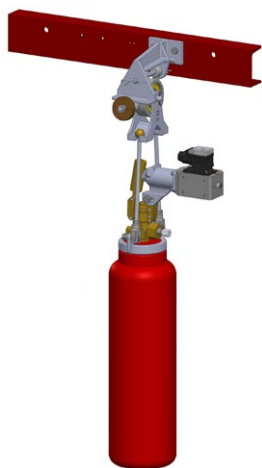


Extinguishing technology CO₂ HP

Control device CO₂ HP components

P21.214.420 - 13

Pneumatic release device PAE - CO₂
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 (CO₂) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

SAP designation

part no. 911754: PAE-CO₂-EM-6.8kg DOT FM/UL

Maintenance

see operating instruction PAE-CO₂ part no. 885374

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

³⁾ Cylinder with valve are not included in delivery

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

Technical data

Operating mediumCO₂ - gaseous
 Working pressure140 bar (2030 psi)
 Test pressure210 bar (3045 psi)
 Pilot cylinder volume10.7 l (2.83 US.liq.gal)
 Thread connectionfor precision steel pipe 6x1

Product sheets also applying

Weighing device WE4P21.214.210
 Weight for weighing device 0.16 kg / 0.3 kgP21.214.210
 Release device EM 24 V DCP21.211.420
 Lever - cylinder valve EM releaseP21.211.420

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 (CO₂) 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 (CO₂) 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 - CO₂ EM DOT FM/UL 6.8 kg911754
 Adapter connection NPT911762
 Operating instruction PAE-CO₂ part no. 885374
 as well as fastenings

Not included in delivery

Cylinder with valve 10.7 l:

- CO₂ - Cylinder DOT - UL
 Pre-assembled connection pipesee operating instruction PAE
 Support weighing device PAE886350, P21.214.720
 Reset tool885530, P21.211.420
 Monitoring loss pneum. actuation device888998, P21.214.430
 Monitoring for release device EM885740, P21.211.430



Extinguishing technology CO₂ HP

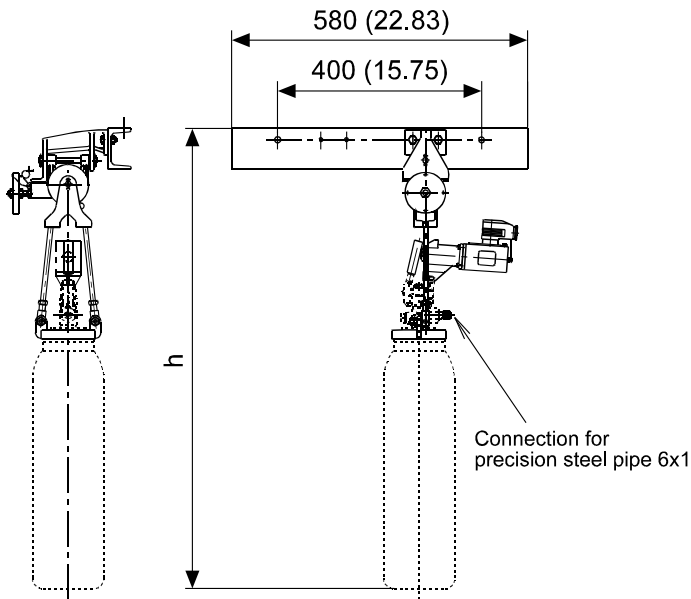
Control device CO₂ HP components

P21.214.420 - 13

Pneumatic release device PAE - CO₂
electrical without protective cover, DOT FM/UL

Dimension drawing

Dimensions in mm (inch)



PAE	h approx.
6.8 kg	1335 (52.6)

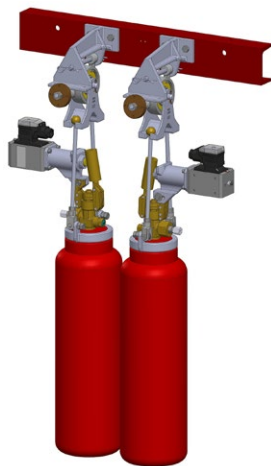


Extinguishing technology CO₂ HP

Control device CO₂ HP components

P21.214.420 - 14

Pneumatic release device PAE - CO₂ 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 (CO₂) and UL-File EX26532 (Ar, VSN 200 and VSN 1230)

SAP designation

part no. 911752: PAE-CO₂-EM-6,8kg reserve DOT FM/UL

Maintenance

see operating instruction PAE-CO₂ part no. 885374

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

³⁾ Cylinder with valve are not included in delivery

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

Technical data

Operating mediumCO₂ - 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 (CO₂) 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 (CO₂) 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 - CO₂ EM DOT FM/UL 6.8 kg 911754
Adapter connection NPT 911762
Operating instruction PAE-CO₂ part no. 885374
as well as fastenings

Not included in delivery

Cylinder with valve 10.7 l:

- CO₂ - 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 CO₂ HP

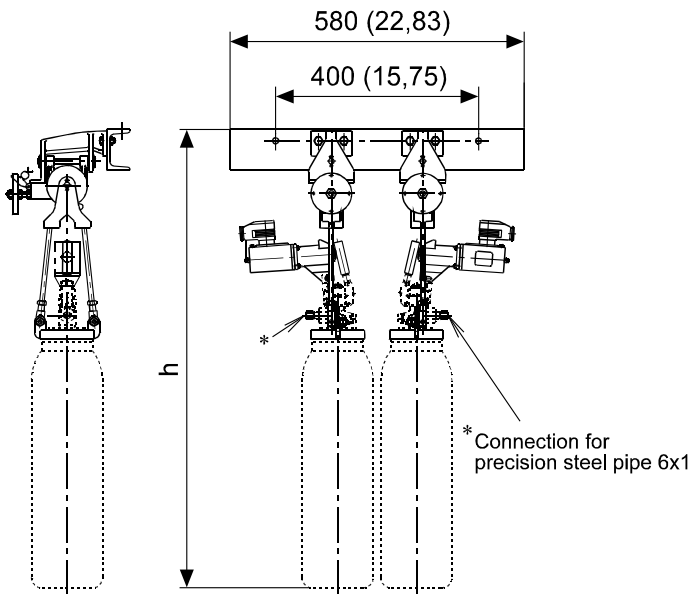
Control device CO₂ HP components

P21.214.420 - 14

Pneumatic release device PAE - CO₂ 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



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 ²⁾	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)
Caution special type: 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)

¹⁾ 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.

²⁾ 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.

³⁾ 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

TypePGS 21.050
Pressure mediumFK-5-1-12, HFC-227ea
Nominal size50
Accuracy class1.6
Temperature ranges: ³⁾
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 codeIP65 with mounted cable
Measuring network, motion workcopper alloy
Directives, Standards ..EN837-1, VdS CEA 4030, EN 12094-10
CE conformityacc. 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

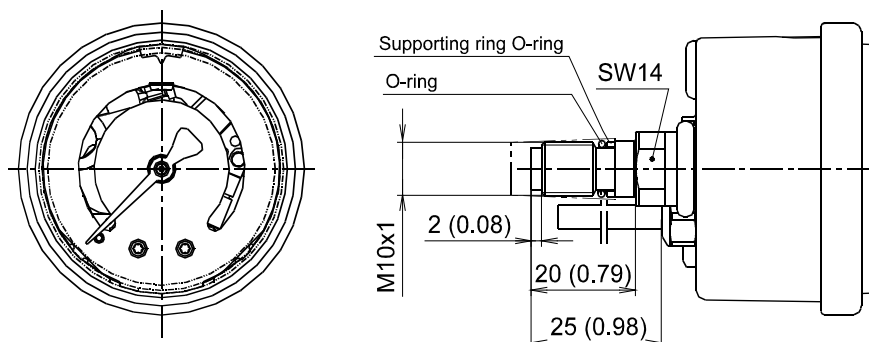
Switching voltage4.5 – 24 V DC / VAC
 Switching current5 – 100 mA
 Contact loadmax. 3 W, dry contact
 Conducting wiretwo-core, 100 cm (39.37")
 Cross-section of conducting wire ...0.14 mm² (0.000217 square inch),
AWG 26

Design of instrument dial

Materialaluminium, white
 Scaledual scale (bar / psi)
 Indicating range0 to pressure range
 Indicating range marked:
 - in red0 to switching point
 - in greenswitching point to max. working pressure
at 50 °C (122 °F)

Dimension drawing

Dimensions in mm (inch)





Extinguishing technology Halocarbon agents **P21.231.430 - 2**

Monitoring device Halocarbon agents

Contact pressure gauge UL, VSN 1230



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. 889303: Contact pressure gauge UL 725 (50) psi (bar) / 324 (22.5) NC FK-5-1-12

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 ³⁾	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)	889303	870 / 324 (60 / 22.5)	725 (50)	± 19 (± 1.3)	0.17 (0.37)
610 (42)		889304	1160 / 549 (80 / 37.8)	1015 (70)	± 21 (± 1.4)	
725 (50)		889305	1450 / 653 (100 / 45)	1160 (80)	± 23 (± 1.5)	
360 (25)	make contact (NO)	889300	870 / 324 (60 / 22.5)	725 (50)	± 19 (± 1.3)	
610 (42)		889301	1160 / 549 (80 / 37.8)	1015 (70)	± 21 (± 1.4)	
725 (50)		889302	1450 / 653 (100 / 45)	1160 (80)	± 23 (± 1.5)	

³⁾ 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 mediumFK-5-1-12
Nominal size50
Accuracy class1.6
Temperature ranges-40 °C to +60 °C (-40 °F to 140 °F)
.....measuring medium max. +60 °C (140 °F)
IP codeIP65 with mounted cable
Measuring network, motion workcopper alloy

Electrical data

Switching voltage4.5 – 24 V DC / VAC
Switching current5 – 100 mA
Contact loadmax. 3 W, dry contact
Conducting wiretwo-core, 100 cm (39.37")
Cross-section of conducting wire ...0.14 mm² (0.000217 square inch),
.....AWG 26

Design of instrument dial

Design of instrument dialaccording to UL 2166
Materialaluminium, white
Scaledual scale (bar / psi)
Indicating range0 to pressure range
Indicating range marked:
- 0 to IRecharge
- I to IIred
- II to IIIgreen
- III to IVred
- IV to max.Overcharged



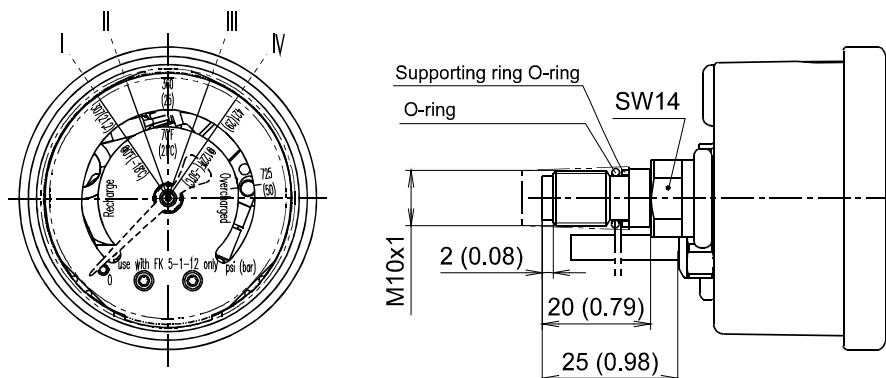
Extinguishing technology Halocarbon agents **P21.231.430 - 2**

Monitoring device Halocarbon agents

Contact pressure gauge UL, VSN 1230

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)	307-324	324-396	396-421	360 I (25) I 70°F I (21°C)	307 (21) @0°F (-18°C)	421 (29) @122°F (50°C)
610 (42)	500-549	549-671	671-696	610 I (42) I 70°F I (21°C)	500 (34) @0°F (-18°C)	696 (48) @122°F (50°C)
725 (50)	616-653	653-798	798-833	725 I (50) I 70°F I (21°C)	616 (42) @0°F (-18°C)	833 (57) @122°F (50°C)



Extinguishing technology Halocarbon agents **P21.231.430 - 3**

Monitoring device Halocarbon agents

Pressure gauge UL, VSN 1230



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. 912097: Pressure gauge UL 725 (50) psi (bar)
FK-5-1-12

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)	912097	870 (60)	725 (50)	0.15 (0.33)
610 (42)	912098	1160 (80)	1015 (70)	
725 (50)	912099	1450 (100)	1160 (80)	

Technical data

Pressure mediumFK-5-1-12
Nominal size50
Accuracy class1.6
Temperature ranges-40 °C to +60 °C (-40 °F to 140 °F)
.....measuring medium max. +60 °C (140 °F)
Measuring network, motion workcopper alloy

Design of instrument dial

Design of instrument dialaccording to UL 2166
Materialaluminium, white
Scaledual scale (bar / psi)
Indicating range marked:
- 0 to IRecharge
- I to IIred
- II to IIIgreen
- III to IVred
- IV to max.Overcharged



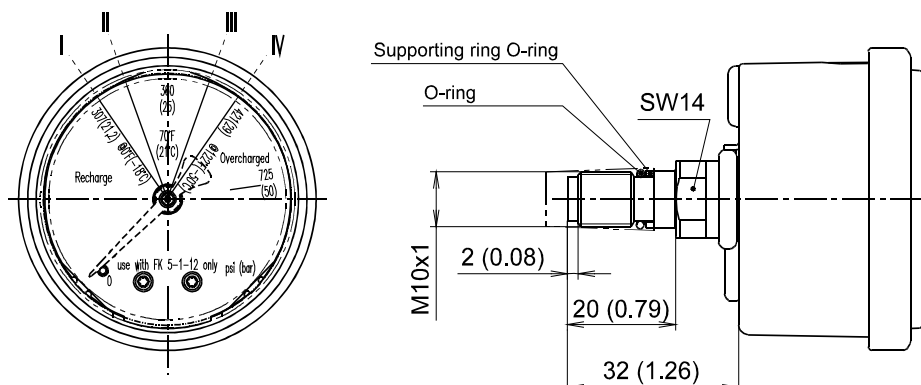
Extinguishing technology Halocarbon agents **P21.231.430 - 3**

Monitoring device Halocarbon agents

Pressure gauge UL, VSN 1230

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)	307-324	324-396	396-421	360 I (25) | 70°F I (21°C)	307 (21) @0°F (-18°C)	421 (29) @122°F (50°C)
610 (42)	500-549	549-671	671-696	610 I (42) | 70°F I (21°C)	500 (34) @0°F (-18°C)	696 (48) @122°F (50°C)
725 (50)	616-653	653-798	798-833	725 I (50) | 70°F I (21°C)	616 (42) @0°F (-18°C)	833 (57) @122°F (50°C)



Inert gas extinguishing technology

Monitoring device

P21.211.430 - 4

Limit switch ZS 256-11z



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. 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

TypeZS 256-11z-M20-2219
Housingthermopl. glass fiber concentrated, self-quenching
IP codeIP67
Contact materialsilver
Contacts1 NC, 1 NO
.....galvanically isolated contact bridges
Operating temperature-30 °C to +80 °C (-22 °F to 176 °F)
Switch systemspring control with
.....twofold brake contacts, forced opener
Nominal isolation voltage500 V
Permanent current10 A

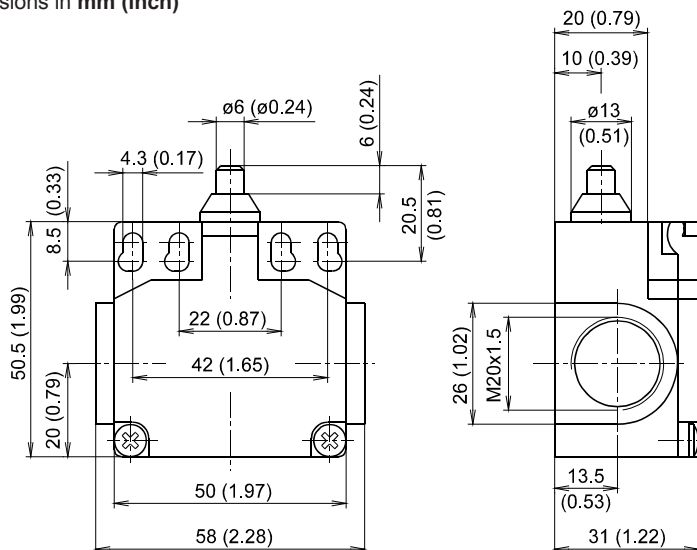
Nominal operation current / voltage4 A (230 V AC);
.....2,5 A (400 V AC); 1 A (500 V AC)
Short-circuit protection10 A slow blow, 16 A quick blow
Actuation forcemin. 9 N
Mechn. durability20x10⁶ switching cycles
Operation speedmax. 1 m/s, min. 0,01 m/s
Time on in percentmax. 5000 / h

Application

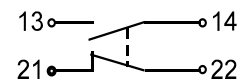
Pneumatic timer PV-3-BND,
Control device pneum. SEP-2 and SEP-2-B.

Dimension drawing

Dimensions in mm (inch)



Circuit diagram:



P21.211.430 - 5

Approvals



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

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

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)

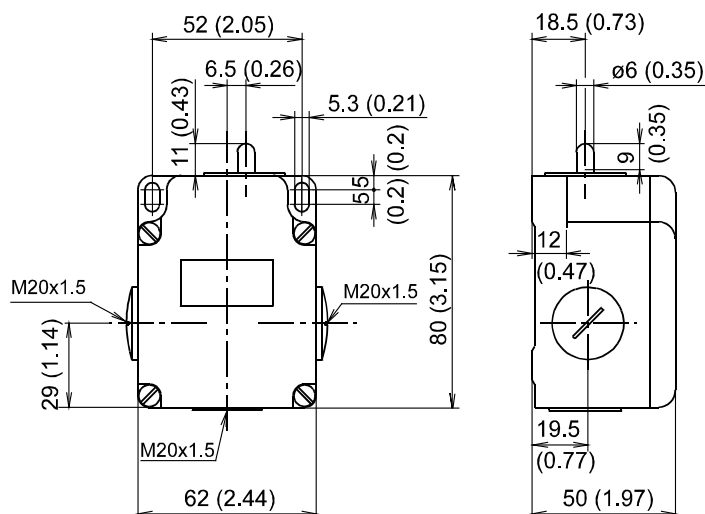
Type	US 432y-M20-2352
Housing	alloy die-cast metal, chrome dulled and varnished
IP code	IP65
Contact material	silver
Switch system	slow action
.....	with twofold brake contacts
Ambient temperature	-20 °C to +60 °C (-4 °F to 140 °F)
Nominal isolation voltage	500 V
Permanent current	16 A
Nominal operation 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 ⁶ switching cycles
Contact spud durability	2x10 ⁶ switching cycles
	at 6 A / 400 V AC, cos φ = 0.4

limit switch pneum. operated, manifold set, selector valve

Limit switch type US 432y with mounting and wiring instructions

Dimensions in mm (inch)



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

TypeUS 434y-M20-2352
Housingalloy die-cast metal, chrome dulled and varnished
IPcodeIP65
Contact materialsilver
Switch systemslow action
.....with twofold brake contacts
Ambient temperature-20 °C to +60 °C (-4 °F to 140 °F)
Nominal isolation voltage500 V
Permanent current16 A
Nominal operation current6 A, 400 V AC
Short-circuit protection16 A slow blow, 20 A quick blow

Actuation forcemax. 100 N
(efficiency of the switch way)
Operation speedmax. 1 m/s, min. 0.001 m/s
Time on in percentmax. 3000 / h
Mechn. durability10x10⁶ switching cycles
Contact spud durability2x10⁶ switching cycles
.....at 6 A / 400 V AC, cos φ = 0.4

Application

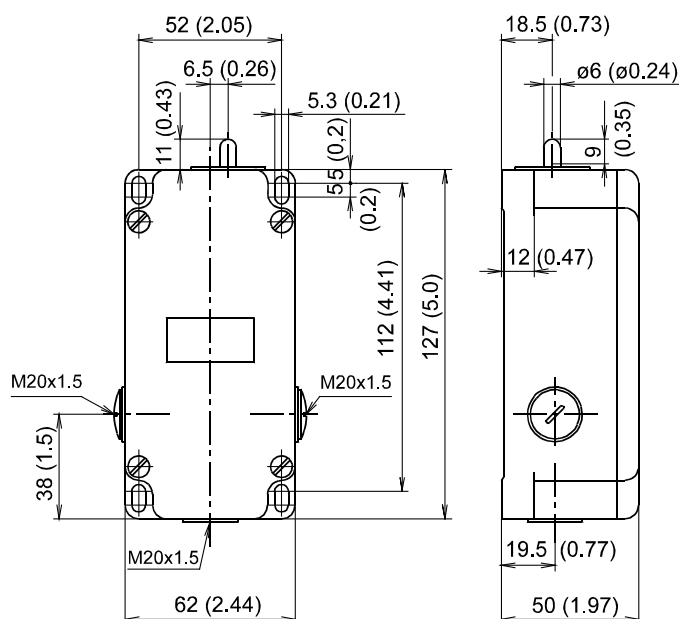
limit switch pneum. operated, manifold set, selector valve

Included in delivery

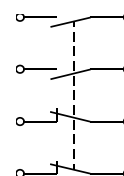
Limit switch US 434y with mounting and wiring instructions

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



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. 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 CO₂, 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 256-11zP21.211.430

Included in delivery

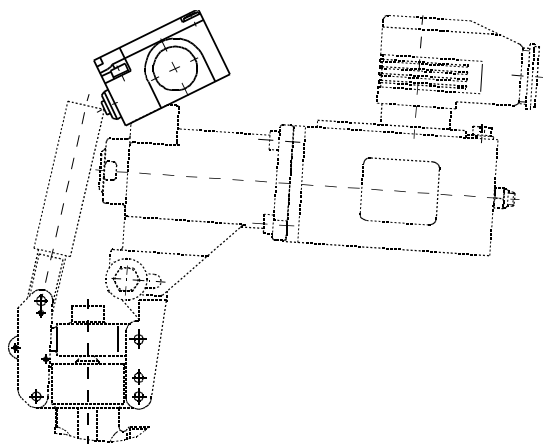
Limit switch ZS 256-11z828482, P21.211.430

2x Cheese-head screw DIN84-M4x25-Ms106745

2x Washer DIN125-B4.3-Ms109734

Product information monitoring EM-release885742

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 N₂ 200 (S312003) / CF N₂ 300 (S312002)
- Argotec CO₂ ND-1 (S398012), electrical release
- Argotec CO₂ ND-1 (S398013), non-electrical release
- Argotec N₂ 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 CO₂, 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

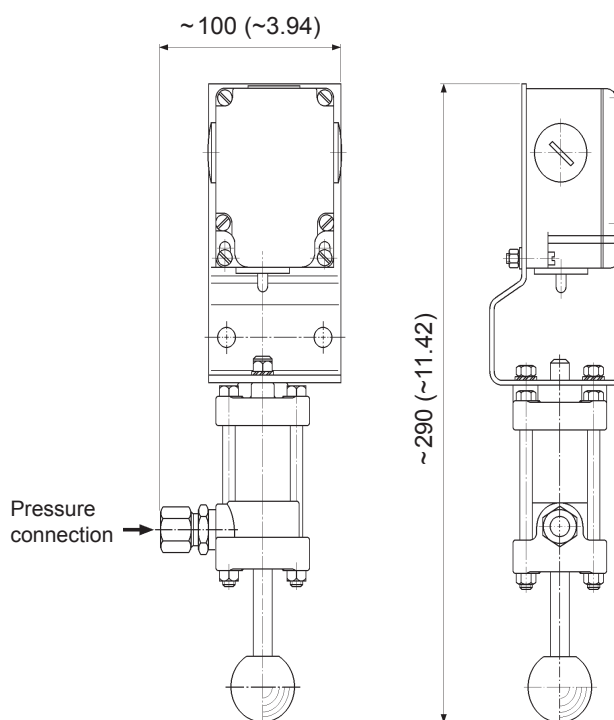
Cylinder ø25 x H30P21.214.420
Limit switch US 432yP21.211.430

Included in delivery

Cylinder ø25 x H30227303, P21.214.420
Limit switch type US 432y724420, P21.211.430
Support limit switch pneum. activated827866
Union GE 6-PSR-EDA3C125578, M1-11-01
2x Cheese-head screw DIN84-M5x25-Ms106915
2x Hex. nut DIN934-M5-Ms108444
2x Washer DIN125-B-5,3-Ms109771
Product information limit switch pneumatic827740
as well as fastening material

Dimension drawing

Dimensions in mm (inch)





Extinguishing technology CO₂ HP

Monitoring device CO₂

P21.214.430 - 5

Monitoring loss pneumatic activation device PAE

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. 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)

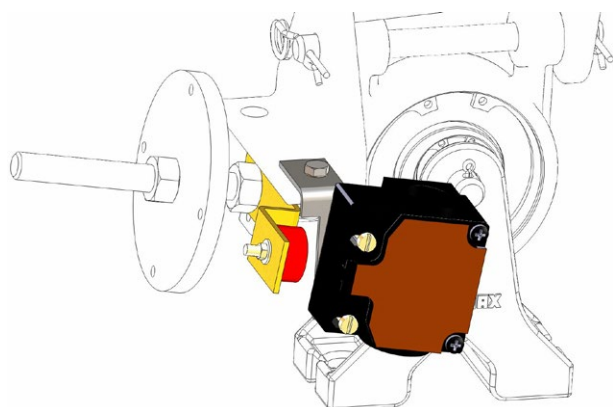
Application

The monitoring loss pneumatic activation device may only be used in accordance with system approval in stationary CO₂-, 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 switch886343, P21.214.430
 Magnet bracket for ÜWA loss PAE876875
 Bracket limit switch monitoring loss PAE WE4888986
 Product information monitoring loss
 pneumatic activation device888999
 as well as screws, nuts and washers

Mounting example





Extinguishing technology Halocarbon agents **P21.231.710 - 11**

Accessories Halocarbon agents

Labels VSN 1230

Caution! ...

Approvals

no approval required

SAP designation

e.g. part no. 916650: Sign VSN1230 Caution! This area is protected by a VSN 1230 fire extinguishing system Alu 210x210

Maintenance

maintenance-free



Text	Part no.	Weight
CAUTION! This area is protected by a VSN 1230 fire extinguishing system.	916650	0.12 kg (0.26 lbs)
CAUTION! Do <u>NOT</u> enter unless automatic release is isolated.	916651	
CAUTION! Do <u>NOT</u> enter unless isolate valve is in the closed position.	916652	

Technical data

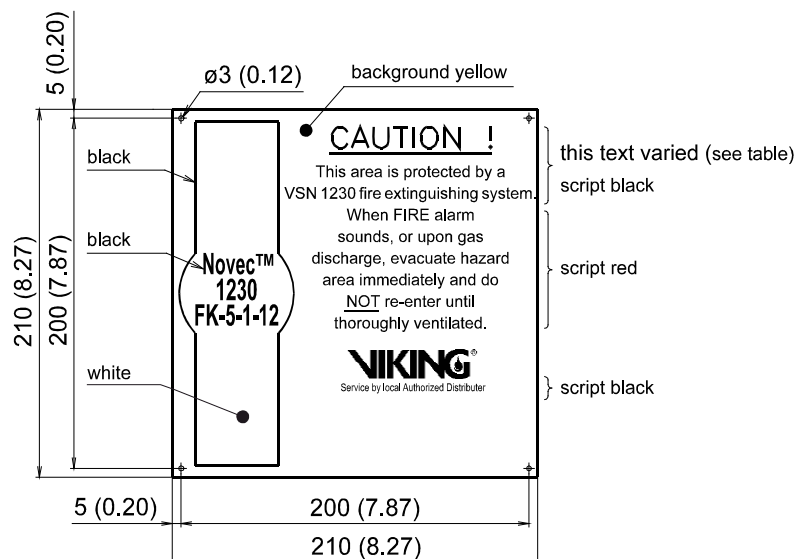
Materialaluminium plate 1 mm (0.04") thickness
 Script typeHelvetica medium face
 Company logoRAL 5002 - blue

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)
Optional tools		
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 Tapprox. 460 x 105 x 370 mm

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

Materialpolypropylene

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 CO₂ HP

Assembly accessories CO₂

P21.214.720 - 2

Support weighing device PAE

Approvals

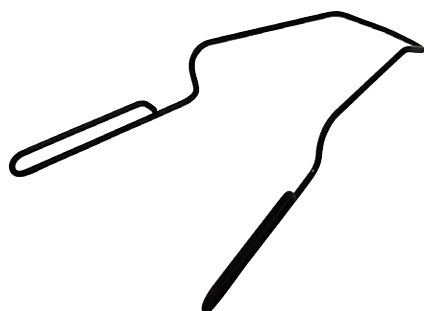
no approval required

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

Materialspring wire, EN 10270-1-2,5 Z

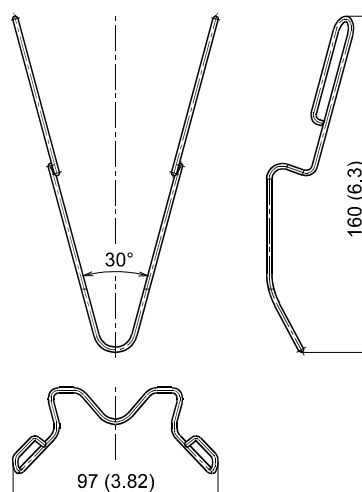
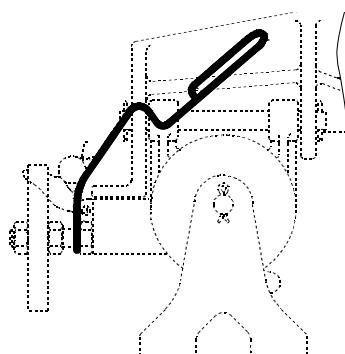
Dimension drawing

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



Europe, Middle East & Africa

BENELUX

Hinmanweg 11d
NL-7575 BE Oldenzaal
The Netherlands
Tel.: +31 (0)541 573233
Fax: +31 (0)541 573234
vikingnetherlands@vikingcorp.com

CENTRAL & EASTERN EUROPE

Industriestr. 10/12
D-23843 Bad Oldesloe
Germany
Tel.: +49 (0)4531 803 8087
Fax: +49 (0)4531 803 137
contact@viking-emea.com

FRANCE

Centre d'Affaires CESCOM
4, rue Marconi
BP 25180
F-57075 Metz Cedex 03
France
Tel.: +33 (0)800 10 29 23
Fax: +33 (0)800 88 70 46
vikingfrance@vikingcorp.com

IBÉRICA

Calle Picos de Europa 4A
San Fernando de Henares
E-28830 Madrid
Spain
Tel.: +34 91 677 8352
Fax: +34 91 677 8498
vikingspain@vikingcorp.com

ITALY

Via Pogliano, 26/a
I-20020 Lainate (MI)
Italy
Tel.: +39 02 932 851 1
Fax: +39 02 932 851 30
vikingitaly@vikingcorp.com

MIDDLE EAST

LOB 19 Office #2506
Post Box No. 17531
Jebel Ali Free Zone, Dubai
United Arab Emirates
Tel.: +971 (0)4 8895 561
Fax: +971 (0)4 8895 562
vikingdubai@vikingcorp.com

NORDIC

Staffans Väg 5
S-192 78 Sollentuna
Sweden
Tel.: +46 (0)8 594 415 90
Fax: +46 (0)8 591 280 18
vikingsweden@vikingcorp.com

POLAND

ul. Płaskowickiej Filipiny 46/33
PL-02 778 Warsaw
Poland
Tel.: +48 22 403 57 90
Fax: +48 22 403 57 69
vikingpoland@vikingcorp.com

ROMANIA & BULGARIA

17-19 Horia, Closca si Crisan St.
RO-075100 Otopeni - Ilfov
Romania
Tel.: +40 21 311 51 48
Fax: +40 21 311 51 41
maucha@viking-emea.com

TURKEY

İnönü Cad. Sümer Sok.
Zitaş İş Merkezi D2 Blok K:5, D:12
34742 Kozyatağı, Kadıköy, İstanbul
Turkey
T: +90 (0)216 403 18 00
F: +90 (0)216 403 18 03
vikingturkey@vikingcorp.com

UK & IRELAND

Unit 2 - Byram House, Newborn Court
Chapel Street
Epworth DN9 1HQ
United Kingdom
Tel.: +44 (0)1427 871 000
Fax: +44 (0)1427 873 917
vikinguk@vikingcorp.com

For further information,
please visit
www.viking-emea.com



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