



Nuclear Products

Qualified to RCC-E Specifications



Presenting ASCO Solutions

The trusted choice for nuclear power

ASCO is the global leader in nuclear-qualified solenoid valves for nuclear power plants. The ASCO heritage of leadership in this field began with the nuclear industry's inception. Original equipment manufacturers (OEMs), architect engineers, project managers, and utility engineers rely on us for all their nuclear power projects — from grassroots construction to life extension to modernisation and power updates.

Our nuclear-qualified and critical-application solenoid valves, pressure and temperature switches, Hydramotor® actuators, and complete engineered valve solutions provide proven service in key safety and balance-of-plant applications.

Today, more than 440 nuclear power plants are now in operation worldwide, the ASCO Company will be nearly installed on every nuclear island. We've been the first choice worldwide supplier for PWR, BWR, and CANDU reactors from major manufacturers including WESTINGHOUSE, AREVA NP, GE-HITACHI, TOSHIBA, MITSUBISHI, AECL, EDF and CGNPC.

Choose from the industry's most reliable, proven, qualified selection of control solutions for global nuclear power applications. No other supplier can match the experience, applications expertise, and in-depth local response that have made ASCO the leader in its field.

Quality, Healthy, Security & Nuclear Safety organization



Qualifications agreements

Our references



Traçability...

Our challenges



Quality program

Our priority



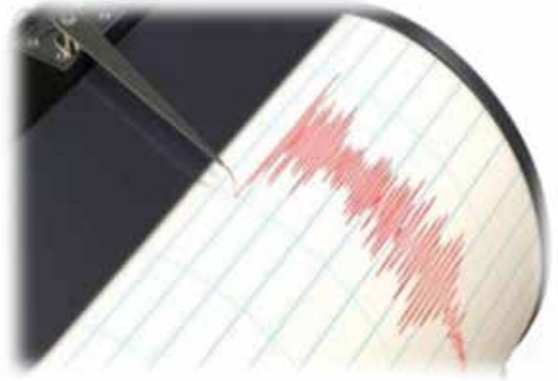
Research & development

Our competency



Earthquake withstand calculation

NEW



Laboratory capability

Our knowledge

- Air flow measurement
- Water flow measurement
- Air tank
- Humidity coils test bench
- Electrical test equipment
- Climatic test chambers
- Test life
- Seismic test



Efficient Operations facility

Our flexibility



Solutions

Your plug & play

ASCO provides global engineered solutions to integrate valves into a complete customer/qualified and tested package including valves, solenoid valves, filter & regulator, switches, tubing, electronics, and a control panel.



World Wide Channel

Our proximity: www.asco.com



Our experts speak not only your language: they speak nuclear
And their job is to make your job easier

Summary Nuclear products catalog

Qualifications level :

a. Level K1

Electrical Quick Disconnect Connector

G ¼	Ø3	MB 301 Series	1 to 4
Rp ¼	Ø5	V 301 Series	5 to 8
G ¾	Ø9	MT 302 & MT 402 Series	9 to 16
G ½	Ø15	MT 303 Series	17 to 18

b. Level K2

Electrical Quick Disconnect Connector

G ¼	Ø3	MB 301 Series	19 to 24
Rp ¼	Ø5	V 301 Series	25 to 28
G ¾	Ø9	MT 302, MT 402, M2T 302, M2T 402 Series	29 to 40
G ½	Ø15	MT 303 Series	41 to 42

Electrical Cable Gland CM10 & CM12

G ¼	Ø3	MB 301 Series	43 to 52
Rp ¼	Ø5	V 301 Series	53 to 58
G ¾	Ø9	MT 302, MT 402, M2T 302, M2T 402 Series	59 to 76
G ½	Ø15	MT 303, M2T 303, MT403 & M2T 403 Series	77 to 90

Electrical Cable Gland BV2 & BV4

G ¼	Ø3	MB 301 Series	91 to 94
Rp ¼	Ø5	V 301 Series	95 to 98
G ¾	Ø9	MT 302 Series	99 to 102
G ½	Ø15	MT 303 Series	103 to 104

c. Level K2 ATEX flameproof

Rp ¼	Ø5	V 301 Series	155 to 156
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d. Level K3

Electrical Quick Disconnect Connector

G ¼	Ø3	MB 301 Series	105 to 112
Rp ¼	Ø5	V 301 Series	113 to 116
G ¾	Ø9	MT 402 Series	117 to 118
G ½	Ø16	X210 Series	119 to 120
G 1	Ø20	X288 Series	121 to 122

Electrical Cable Gland CM12

G ¼	Ø3	MB 301 Series	123 to 126
Rp ¼	Ø5	V 301 Series	127 to 136
G ¾	Ø9	MT 302 & MT 402 Series	137 to 142
G ½	Ø16	X210 Series	143 to 144
G 1	Ø20	X288 Series	145 to 146

Electrical Cable Gland CM14

G ¼	Ø3	MB 301 Series	147 to 148
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Booster Valves

¾ NPTF	Ø20	X398 Series	149 to 150
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e. ATEX flameproof products

G ¼	Ø3	MB 301 Series	151 to 154
Rp ¼	Ø5	V 301 Series	155 to 160
G ¾	Ø9	MT 302 Series	161 to 162

f. Level I-EEE ASME

G ¼	Ø3	MB 301 Series	163 to 164
G ¾	Ø9	MT 302 Series	165 to 166
Flanges	Ø25	X329 Series	167 to 168
½	Ø15	T303 Series	169 to 170

g. Accessories:

Filter/Regulator, Filter, Regulator	171 to 176
Exhaust	177 to 178
ATEX Cable Gland	179 to 180

K1

K2

K3

ATEX

I-EEE

Summary Nuclear products catalog

	Catalogue Number	RCC-E	Page
121 Series			
MB 301 F3 K1 pad mounting body	12101313	2012	01
" " " K2	12102037	"	19
" " " K2	12102046	"	43
MB 301 O3 K1	12101311 / 12102104	"	03
" " " K2	12102036	"	21
" " " K2	12102030	"	47
" " " K2	12101357	"	91
" " " K2	12101238	"	93
" " " K3	12102108	"	105
" " " K3	12102120	"	109
" " " K3	12101351	"	123
" " " K3	12102055	"	147
" " " - 1EA / I-EEE	12102054	"	163
MB 301 O3 K2	12102034	"	23
" " " K2	12102003	"	49
" " " K2	X121519572001H9	"	51
" " " K3	12102109	"	107
" " " K3	12102122	"	111
" " " K3	12102099	"	125
" " " ATEX, Ex d	12102025	ATEX	153
MB 301 F3 K2	12102031	2012	45
" " " ATEX, Ex d	12102026	ATEX	151
131 Series			
V 301 F5 K1	X131439755001H9 / X131439755002J1	2012	05
" " " K2	X131439742001H9 / X131439742002J1	"	25
" " " K2	X131439741001H9 / X131439741002J1	"	53
" " " K3	X131507759001H9	"	129
V 301 F6 K3	X131514265001H9	"	133
V 301 O5 K1	X131439743001H9 / X131439743002J1	"	07
" " " K2	X131439753001H9 / X131439753002J1	"	27
" " " K2	X131439744001H9 / X131439744002J1	"	55
" " " K2	X131519571001H9	"	57
" " " K2	X131509998001H9	"	95
" " " K2	13102151	"	97
" " " K3	13102143	"	113
" " " K3	13101388	"	131
" " " 2I10 K3	X131434582001J1	"	115
" " " ATEX	X131508749001H9 / X131508749002J1	ATEX	155
" " " ATEX	13102116	ATEX	159
V 301 O6 K3	13101372	"	135
V 301 U4 K3	13101420	"	127
" " " ATEX	13102121	"	157
210 Series			
X 210 K3	X210504405001H8 / X210502702001H8	2012	119
" " K3	X210515731001H8	"	143

Summary Nuclear products catalog

	Catalogue Number	RCC-E	Page
231 Series			
MT 302 D K1	23100494 / X231518115001H9 / X231518115002J1	2012	09
" " " K2	23102029	"	29
" " " K2	23102033	"	59
" " " K2	X231519566001H9	"	65
" " " K2	X231509984001H9	"	99
" " " K3	23100527 / X231504443001H9	"	137
" " " - 1 EA / I-EEE	23102049	"	165
MT 302 S 2110 K1	23102043 / 23102121	"	11
" " " K1	23102061 / 23102103	"	13
" " " K2	23102037	"	31
" " " K2	23102036	"	61
" " " K2	23102025 / 23102113	"	63
" " " K2	X231518101001H9	"	101
" " " K3	X231504444001H9	"	139
" " " ATEX	23100261	ATEX	161
MT 303 D K1	23100495	2012	17
" " " K2	23102030	"	41
" " " K2	23102026	"	77
MT 303 S K2	23102041	"	79
" " " K2	23102045	"	81
" " " K2	23102059	"	103
M2T 302 D K2	23102034	"	37
M2T 302 D K2	23102027	"	71
M2T 303 D K2	23102028	"	83
T 303 RH 1EA / I-EEE	X23150173200100	-	169
232 Series			
MT 402 D K1	23200485	2012	15
" " " K2	23202031	"	33
" " " K2	23202007	"	67
" " " K3	23202058	"	117
" " " K3	23202042	"	141
MT 402 S K2	23202032	"	35
" " " K2	23202004	"	69
MT 403 D K2	23202022	"	85
MT 403 S K2	23202024	"	87
M2T 402 D K2	23202033	"	39
" " " K2	23202003	"	73
M2T 402 S K2	23202036	"	75
M2T 403 D K2	23202034	"	89
288 Series			
X288 K3	X288501748002H9 / X288501748002J1	2012	121
" K3	X288517179001H9	"	145
329 Series			
329 2/2 NC / I-EEE	32900064	-	167
398 Series			
398 DN20 3/2 PN40 T100	X39843469700100	-	149
Accessories			
Filter/Regulator, Filter, Regulator, stainless steel body	-	-	171
Exhaust protector	-	-	177
Cable glands, II 2 G Ex d IIC, II 2 D Ex tD	-	-	179

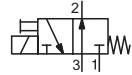
K1

K2

K3

ATEX

I-EEE



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: MB301 - HM-63/9667
 - Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000
- EMC: EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 40 years at 23°C
 - Functional +10°C to +50°C
 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation:
 - Aging 250 Kgy at 70°C
 - Accident 600 Kgy at 70°C
- Seismic:
 - Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 - RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- LOCA - Accident:
 - LOCA RCC-E: 2 peaks at 5,6 bar, 156°C
 - Atmosphere chemical spray: 1,5% boric acid and 0,6% sodium hydroxide
 - Post-accident: 100°C, 24 hours and HR = 100%
- Fluid: Dry air or filtered air



K1



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, blue decontaminable paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP65	+5 to +50
125 VDC	14	16			

VAMAC® is a registered trademark of Dupont Performance Elastomers

SPECIFICATIONS

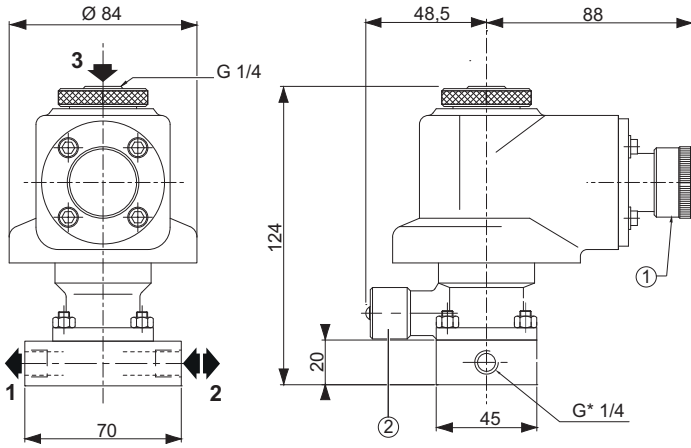
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G	(mm)			(ms)				
1/4	3	16	260	250	0	8	12101313.48/DC 12101313.125/DC	MB301 F 3 - K1

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INSTALLATION

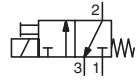
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- 1/4 pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1. Pipe connection (G) is standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)



weight
3

- ① QDC: Quick Disconnect Connector
- ② Manual operator location



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: MB301 - HM-63/9667
 - Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000
- EMC: EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 40 years at 23°C
 - Functional +10°C to +50°C
 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation:
 - Aging 250 Kgy at 70°C
 - Accident 600 Kgy at 70°C
- Seismic:
 - Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 - RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- LOCA - Accident:
 - LOCA RCC-E: 2 peaks at 5,6 bar, 156°C
 - Atmosphere chemical spray: 1,5% boric acid and 0,6% sodium hydroxide
 - Post-accident: 100°C, 24 hours and HR = 100%
- Fluid: Dry air or filtered air



K1



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, blue decontaminable paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP65	+5 to +50
125 VDC	14	16			

VAMAC® is a registered trademark of Dupont Performance Elastomers

SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference	orientation type
		(m³/h)	(l/min)		min.	max.			
G	(mm)								
1/4	3	16	260	250	0	10	12101311.48/DC	MB301 O 3 - K1	01
							12101311.125/DC		
							12102104.48/DC		02
							12102104.125/DC		

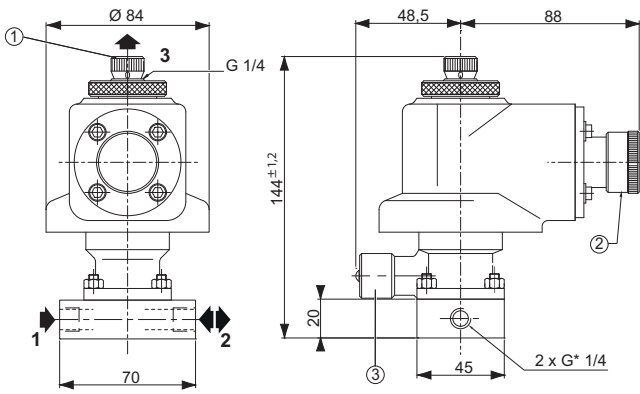
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INSTALLATION

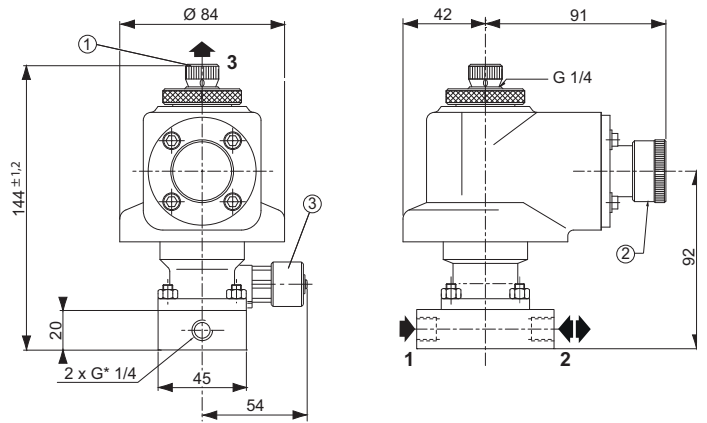
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- 1/4 pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1. Pipe connection (G) is standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)

TYPE 01

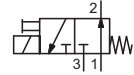


TYPE 02



type	weight
01 / 02	3

- ① 3/2 NC: exhaust protector
- ② QDC: Quick Disconnect Connector
- ③ Manual operator location



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: V301 - HM-63/9699
 - Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000
- EMC:
 - EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 40 years at 23°C
 - Functional +10°C to +50°C
 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation:
 - Aging 250 Kgy at 70°C
 - Accident 600 Kgy at 70°C
- Seismic:
 - Vibration aging 2g from 10 Hz to 500 Hz during 2 hours on each axis
 - RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- LOCA - Accident:
 - LOCA RCC-E: 2 peaks at 5,6 bar, 156°C
 - Atmosphere chemical spray: 1,5% boric acid and 0,6% sodium hydroxide
 - Post-accident: 100°C, 24 hours and HR = 100%
- Fluid: Dry air or filtered air



K1



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, blue decontaminable paint
Threaded base, cover & screw Cast iron, steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	32	36	H	IP65	+5 to +50
125 VDC	39	44			

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SPECIFICATIONS

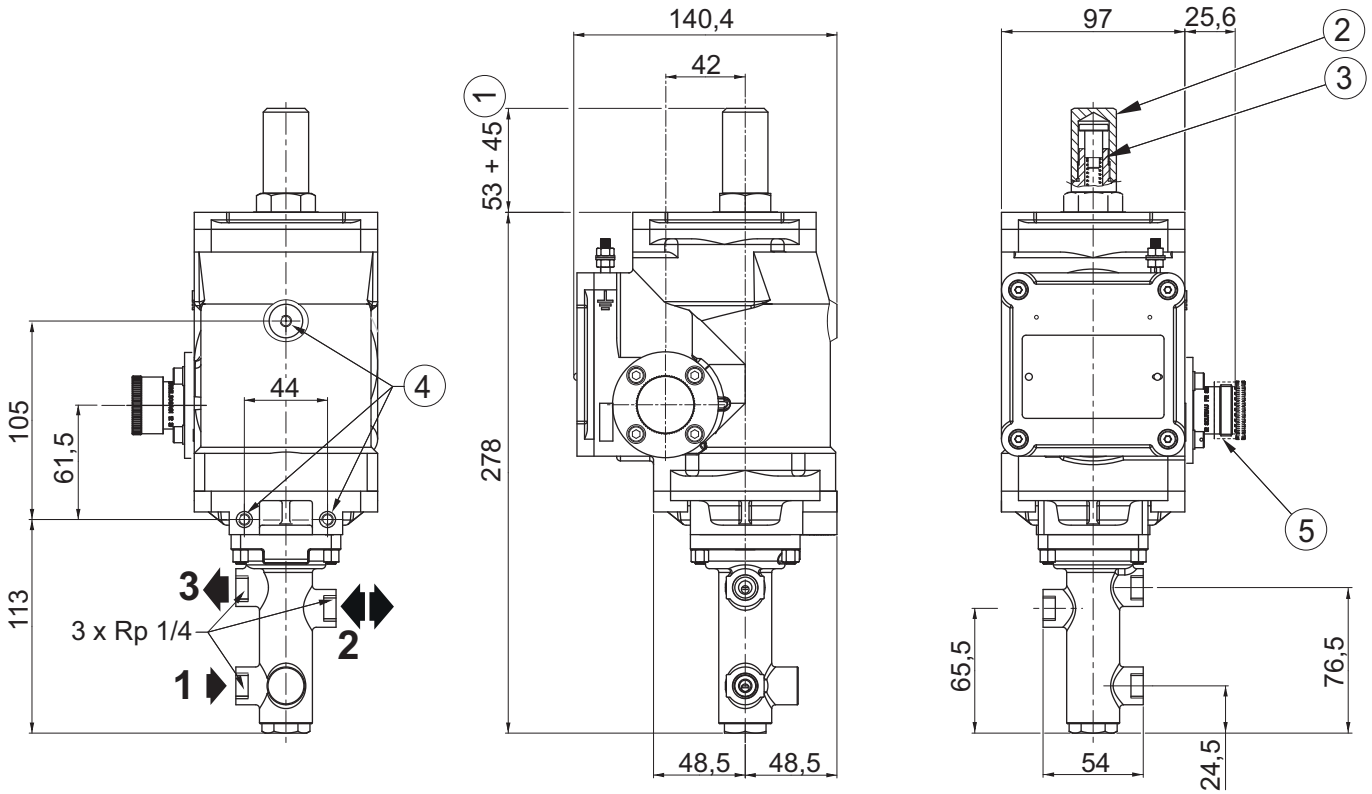
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)			(ms)				
1/4	5	27,4	450	500	0	10	X131439755001H9	V301 F 5 48/DC- K1
							X131439755002J1	V301 F 5 125/DC- K1

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INSTALLATION

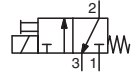
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
7,9

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ QDC: Quick Disconnect Connector



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
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100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
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 - LOCA RCC-E: 2 peaks at 5,6 bar, 156°C
 - Atmosphere chemical spray: 1,5% boric acid and 0,6% sodium hydroxide
 - Post-accident: 100°C, 24 hours and HR = 100%mic component level (up to 30g from 1 Hz to 100 Hz)
- Fluid: Dry air or filtered air



K1



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, blue decontaminable paint
Threaded base, cover & screw Cast iron, steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

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Coil protection Unidirectional diode
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voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	32	36	H	IP65	+5 to +50
125 VDC	39	44			

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SPECIFICATIONS

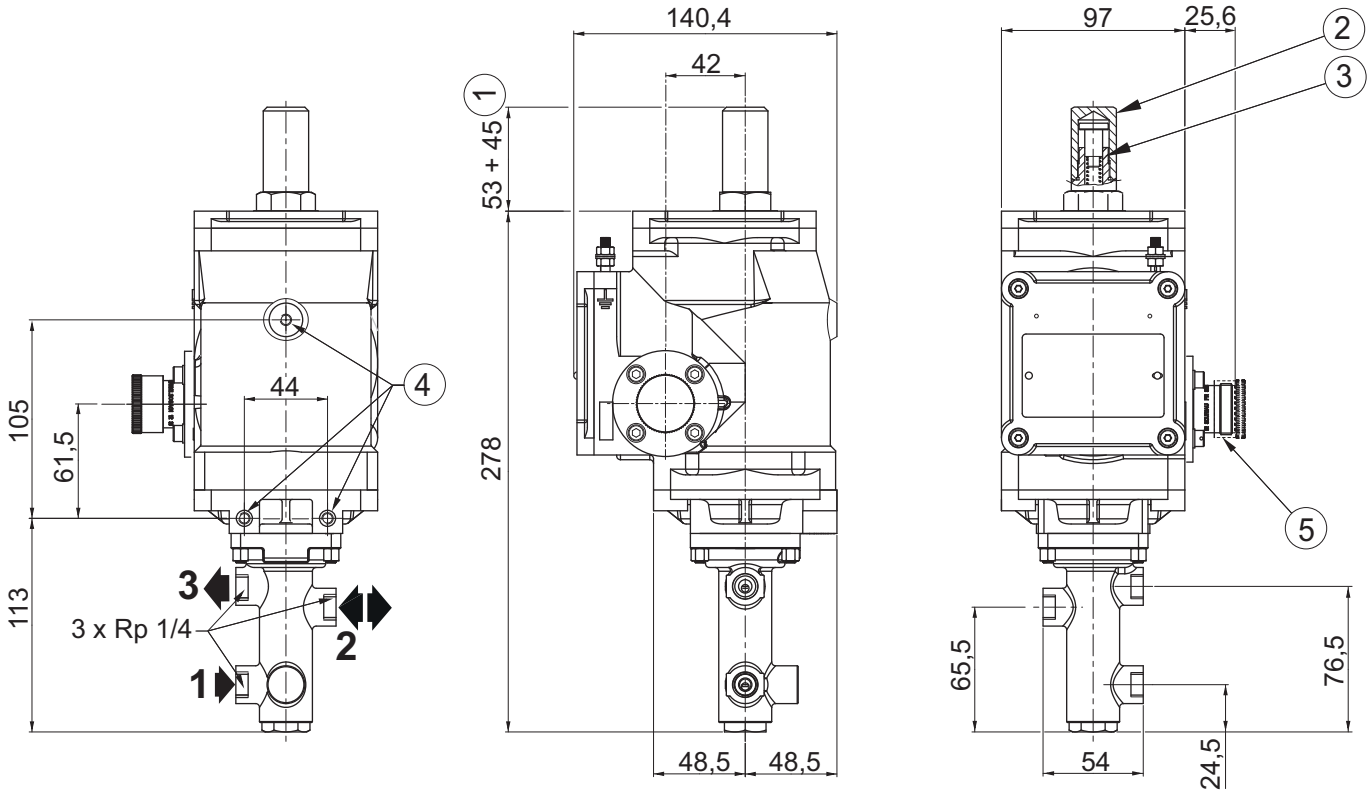
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)			(ms)				
1/4	5	27,4	450	500	0	10	X131439743001H9 X131439743002J1	V301 O 5 48/DC- K1 V301 O 5 125/DC- K1

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INSTALLATION

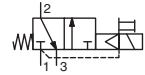
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



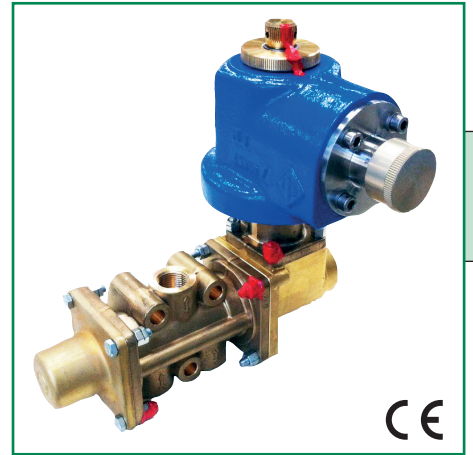
weight
7,9

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ QDC: Quick Disconnect Connector



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 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation:
 - Aging 250 Kgy at 70°C
 - Accident 600 Kgy at 70°C
- Seismic:
 - Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 - RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- LOCA - Accident:
 - LOCA RCC-E: 2 peaks at 5,6 bar, 156°C
 - Atmosphere chemical spray: 1,5% boric acid and 0,6% sodium hydroxide
 - Post-accident: 100°C, 24 hours and HR = 100%
- Fluid: Dry air or filtered air



K1



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, blue decontaminable paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP65	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

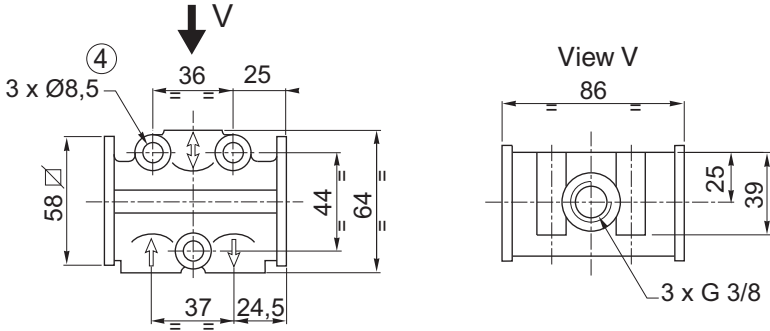
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference	orientation type
		1 → 2		2 → 3			min.	max.			
G	(mm)	(m³/h)	(l/min)	(m³/h)	(l/min)	(ms)	min.	max.			
3/8	9	80,6	1345	76	1270	500	3	10	23100494.48/DC	MT302 D ⁽¹⁾ - K1	01
									23100494.125/DC		
									X231518115001H9 48/DC		02
									X231518115002J1 125/DC		

⁽¹⁾ D = Direct supply.

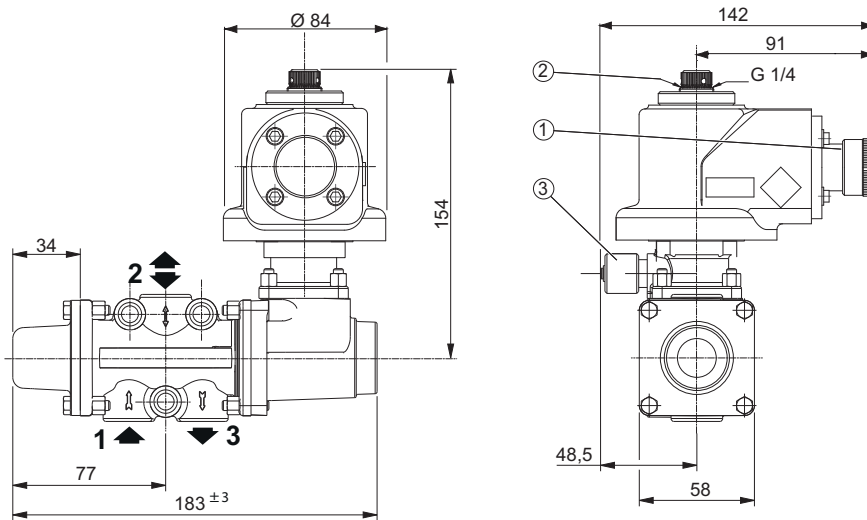
INSTALLATION

- The valve must be installed with the spool in horizontal position.
- Pipe connection (G) is standard thread according to ISO 228/1

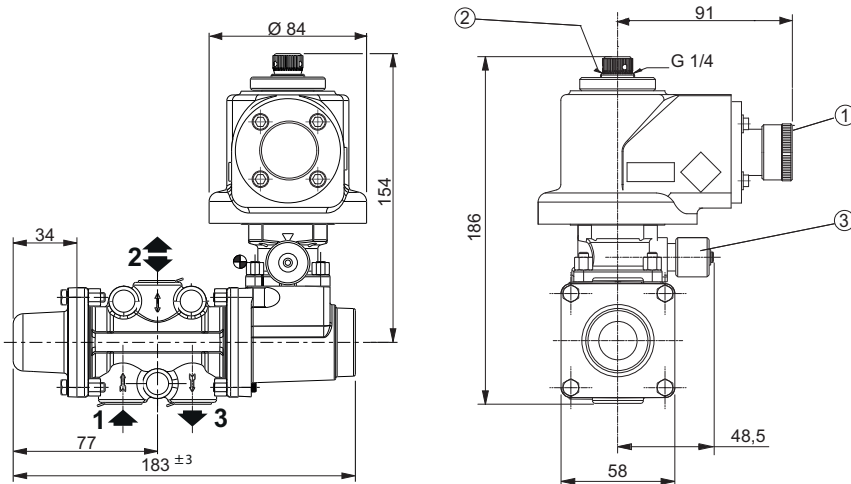
DIMENSIONS (mm), WEIGHT (kg)



TYPE 01

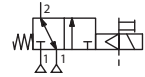


TYPE 02



weight
5

- ① QDC: Quick Disconnect Connector
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: MT302 - HM-63/9667
 - Quality assurance: NF EN ISO 9001-2008
RCC-E 2012 # A5000
- EMC:
 - EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
 - Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 40 years at 23°C
 - Functional +10°C to +50°C
 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation:
 - Aging 250 Kgy at 70°C
 - Accident 600 Kgy at 70°C
- Seismic:
 - Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 - RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- LOCA - Accident:
 - LOCA RCC-E: 2 peaks at 5,6 bar, 156°C
 - Atmosphere chemical spray: 1,5% boric acid and 0,6% sodium hydroxide
 - Post-accident: 100°C, 24 hours and HR = 100%
- Fluid: Dry air or filtered air



K1

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, blue decontaminable paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP65	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

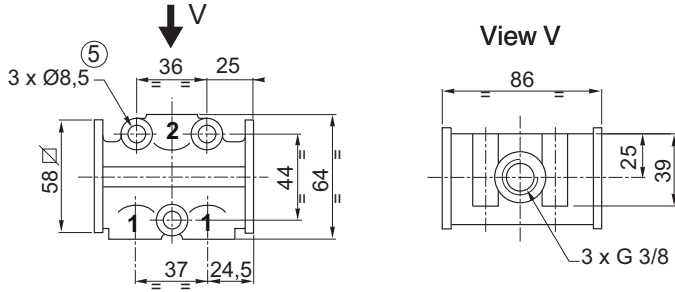
pipe size	orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference	orientation type
		1 → 2 (m³/h)	(l/min)		min.	max.			
G									
3/8	9	76	1270	500	3	10	23102043.48/DC 23102043.125/DC 23102121.48/DC 23102121.125/DC	MT302 S 2I1O ⁽¹⁾ - K1	01 02

⁽¹⁾ S = external supply / 2I1O = 2 inlets 1 outlet

INSTALLATION

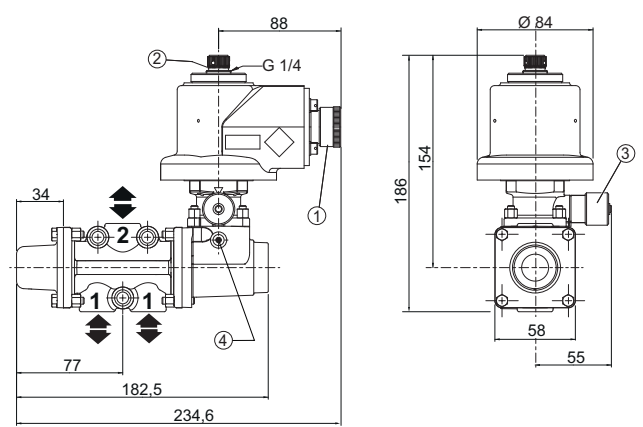
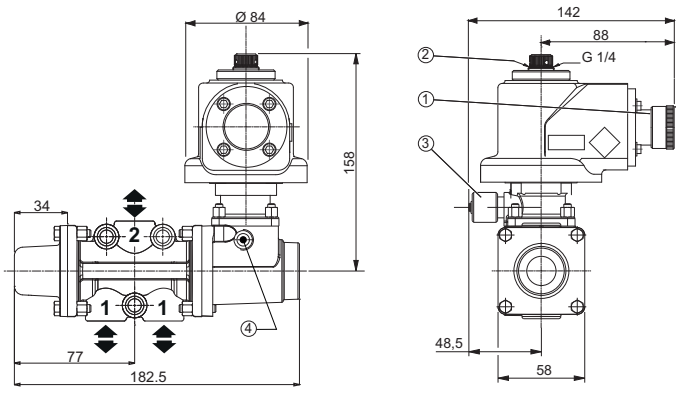
- The valve must be installed with the spool in horizontal position.
- Pipe connection (G) is standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)



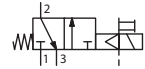
TYPE 01

TYPE 02



type	weight
01 / 02	5

- ① QDC: Quick Disconnect Connector
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ G 1/4 for external pilot supply
- ⑤ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: MT302 - HM-63/9667
 - Quality assurance: NF EN ISO 9001-2008
RCC-E 2012 # A5000
- EMC:
 - EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 40 years at 23°C
 - Functional +10°C to +50°C
 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation:
 - Aging 250 Kgy at 70°C
 - Accident 600 Kgy at 70°C
- Seismic:
 - Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 - RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- LOCA - Accident:
 - LOCA RCC-E: 2 peaks at 5,6 bar, 156°C
 - Atmosphere chemical spray: 1,5% boric acid and 0,6% sodium hydroxide
 - Post-accident: 100°C, 24 hours and HR = 100%
- Fluid: Dry air or filtered air



K1



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, blue decontaminable paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP65	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

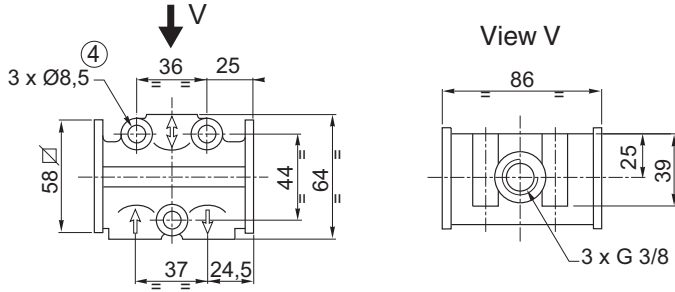
pipe size	orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference	orientation type
		1 → 2 (m³/h) (l/min)		2 → 3 (m³/h) (l/min)			min.	max.			
G											
3/8	9	80,6	1345	76	1270	500	3	10	23102061.48/DC	MT302 S ⁽¹⁾ - K1	01
									23102061.125/DC		
									23102103.48/DC		02
									23102103.125/DC		

⁽¹⁾ External supply

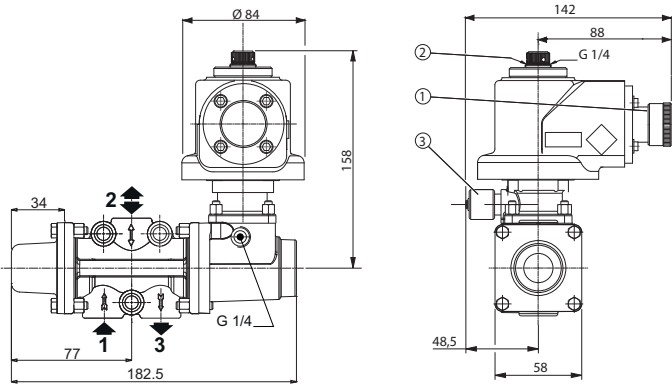
INSTALLATION

- The valve must be installed with the spool in horizontal position.
- Pipe connection (G) is standard thread according to ISO 228/1

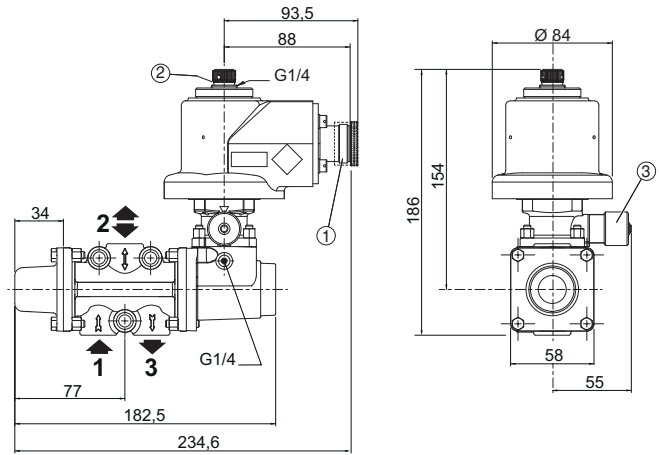
DIMENSIONS (mm), WEIGHT (kg)



TYPE 01

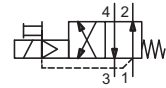


TYPE 02



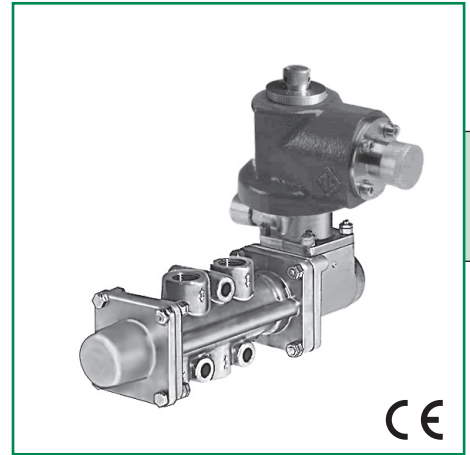
type	weight
01 / 02	5

- ① QDC: Quick Disconnect Connector
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: MT402 - HM-63/9667
 - Quality assurance: NF EN ISO 9001-2008
RCC-E 2012 # A5000
- EMC:
 - EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 40 years at 23°C
 - Functional +10°C to +50°C
 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation:
 - Aging 250 Kgy at 70°C
 - Accident 600 Kgy at 70°C
- Seismic:
 - Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 - RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- LOCA - Accident:
 - LOCA RCC-E: 2 peaks at 5,6 bar, 156°C
 - Atmosphere chemical spray: 1,5% boric acid and 0,6% sodium hydroxide
 - Post-accident: 100°C, 24 hours and HR = 100%
- Fluid: Dry air or filtered air



K1

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, blue decontaminable paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP65	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)						response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)			(l/min)				min.	max.		
G	(mm)	1 → 2 1 → 4	1 → 2	2 → 3	1 → 2 1 → 4	1 → 2	2 → 3	(ms)			23200485.48/DC 23200485.125/DC	MT402 D ⁽¹⁾ - K1
3/8	9	84,4	61,6	80,7	1400	1030	1345	500	3	10		

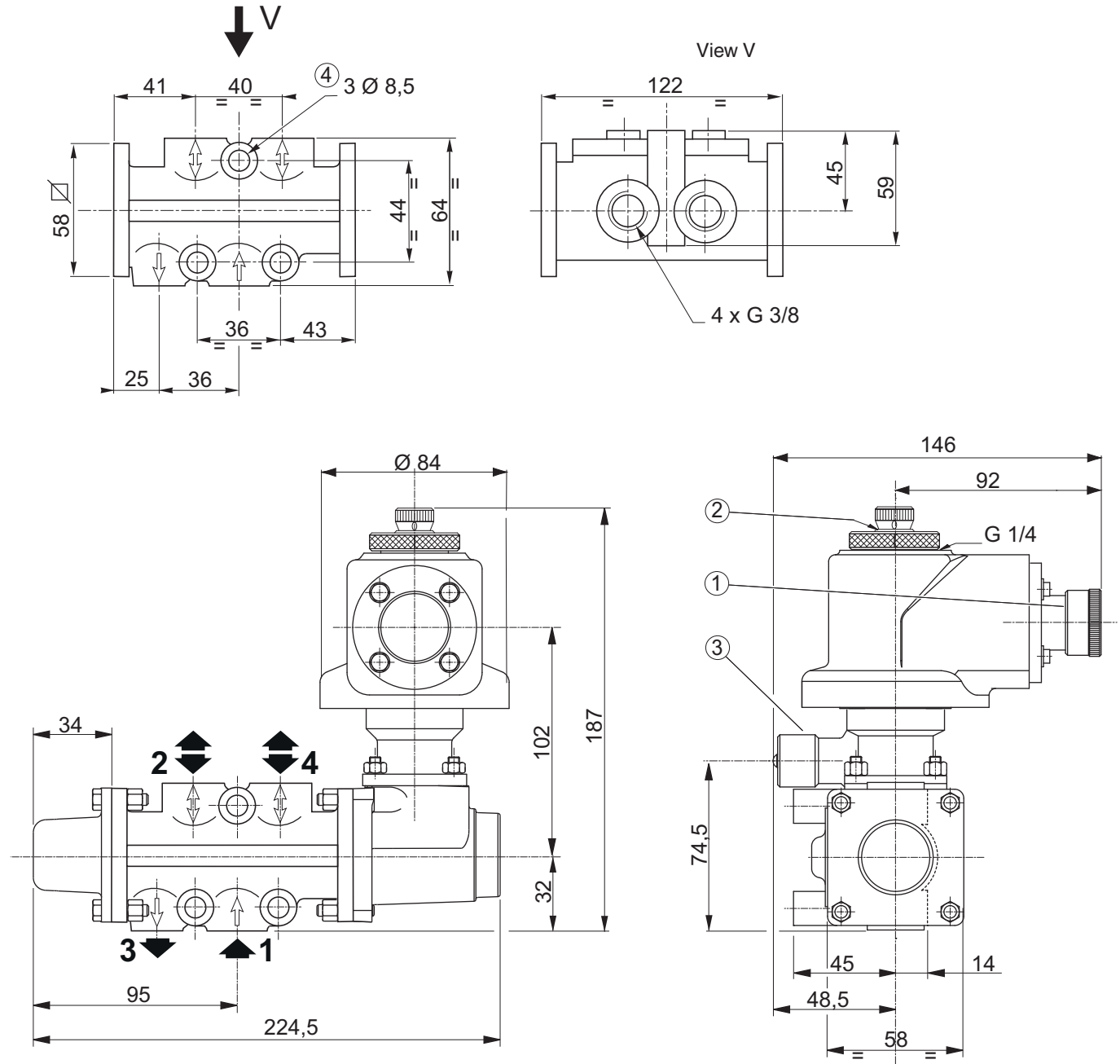
⁽¹⁾ D = Direct supply.

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INSTALLATION

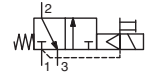
- The valve must be installed with the spool in horizontal position.
- Pipe connection (G) is standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)



weight
5,5

- ① QDC: Quick Disconnect Connector
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: MT303 - HM-63/9667
 - Quality assurance: NF EN ISO 9001-2008
RCC-E 2012 # A5000
- EMC: EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 40 years at 23°C
 - Functional +10°C to +50°C
 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation:
 - Aging 250 Kgy at 70°C
 - Accident 600 Kgy at 70°C
- Seismic:
 - Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 - RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- LOCA - Accident:
 - LOCA RCC-E: 2 peaks at 5,6 bar, 156°C
 - Atmosphere chemical spray: 1,5% boric acid and 0,6% sodium hydroxide
 - Post-accident: 100°C, 24 hours and HR = 100%
- Fluid: Dry air or filtered air



K1

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, blue decontaminable paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP65	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

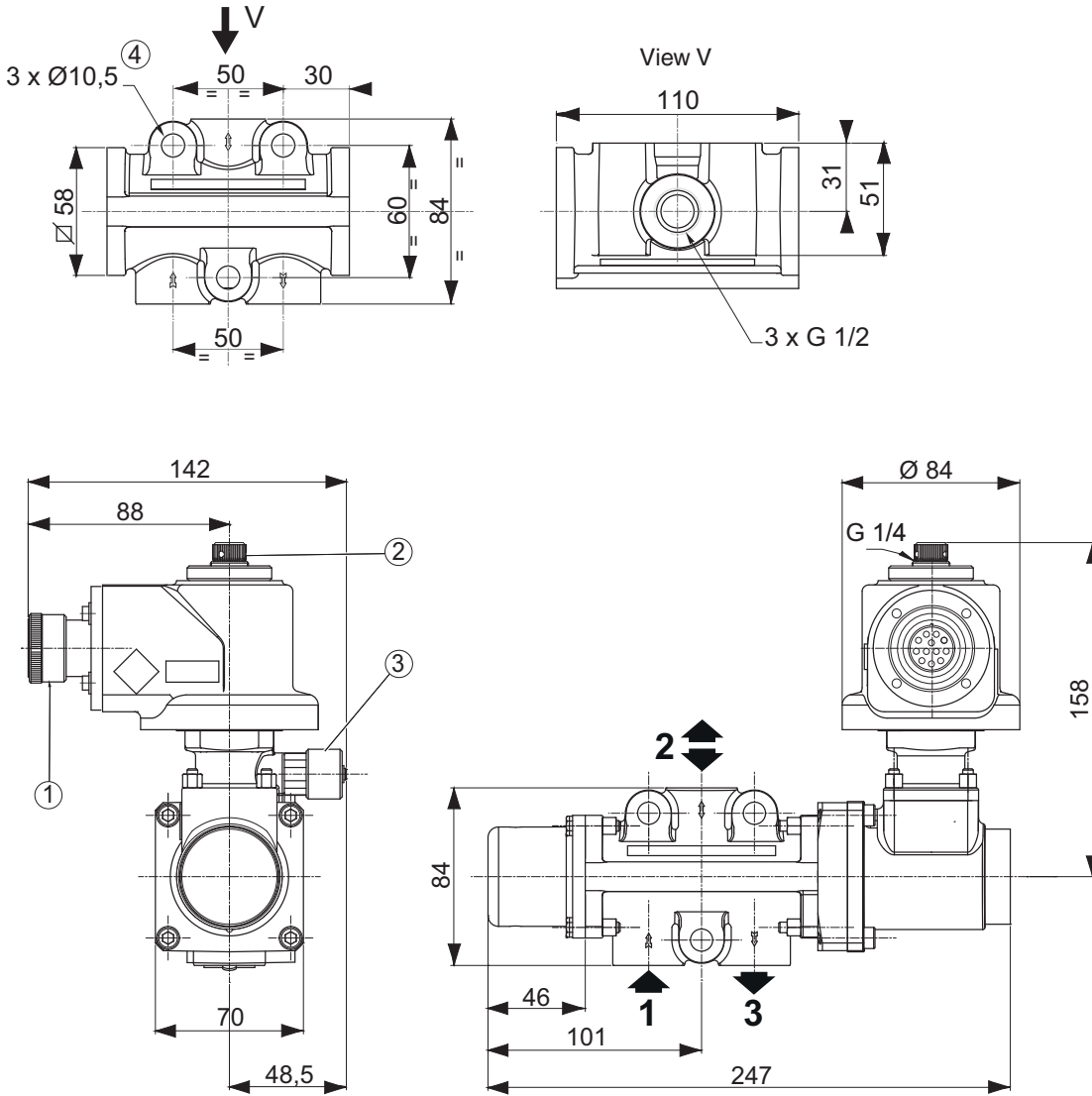
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.)	operating pressure differential (bar)		catalogue number	reference
		1 → 2		2 → 3			min.	max.		
G	(mm)	(m³/h)	(l/min)	(m³/h)	(l/min)	(ms)				
1/2	15	261	4360	172,7	2880	500	3	10	23100495.48/DC 23100495.125/DC	MT303 D ⁽¹⁾ - K1

⁽¹⁾ D = Direct supply.

INSTALLATION

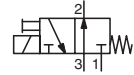
- The valve must be installed with the spool in horizontal position.
- Pipe connection (G) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
6,3

- ① QDC: Quick Disconnect Connector
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 10,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: MB301 - HM-63/9667

Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

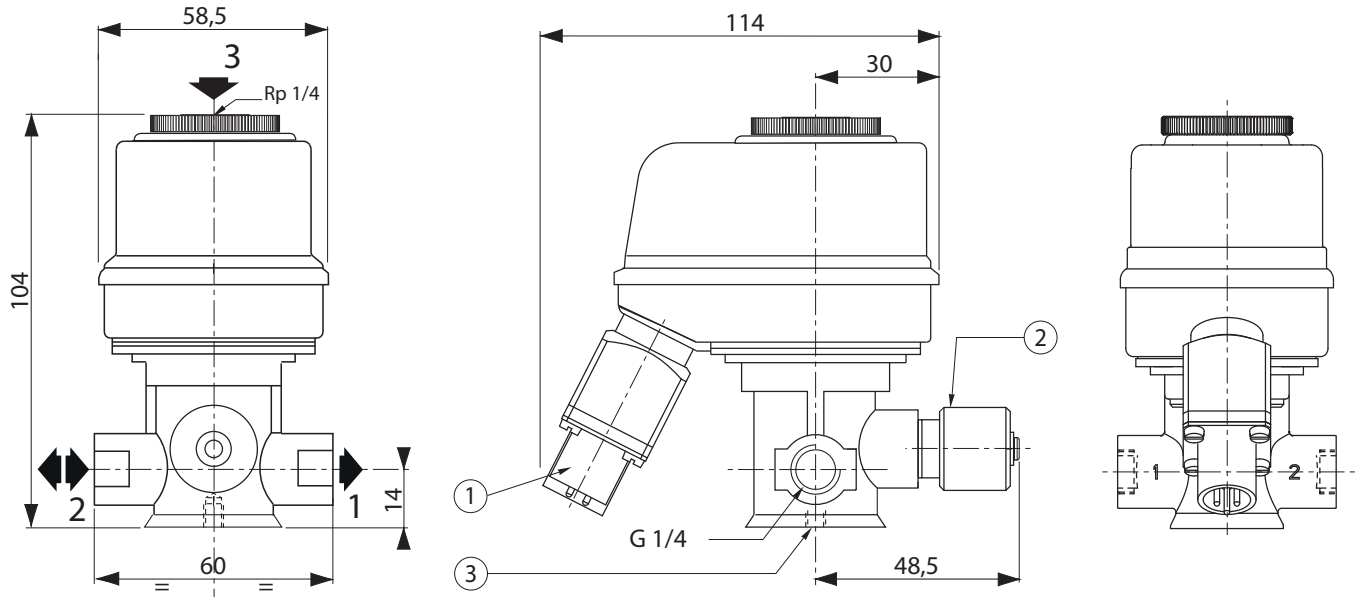
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G	(mm)			(ms)				
1/4	3	16	260	250	0	8	12102037.48/DC 12102037.125/DC	MB301 F 3 - K2

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INSTALLATION

- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Pipe connections (Rp) have standard thread according to ISO 7/1. Pipe connections (G) have standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)



weight
1,0

- ① QDC: Quick Disconnect Connector, 8N45
- ② Manual operator location
- ③ Mounting hole M5, depth 7 mm

QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: MB301 - HM-63/9667

Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
Accident 600 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

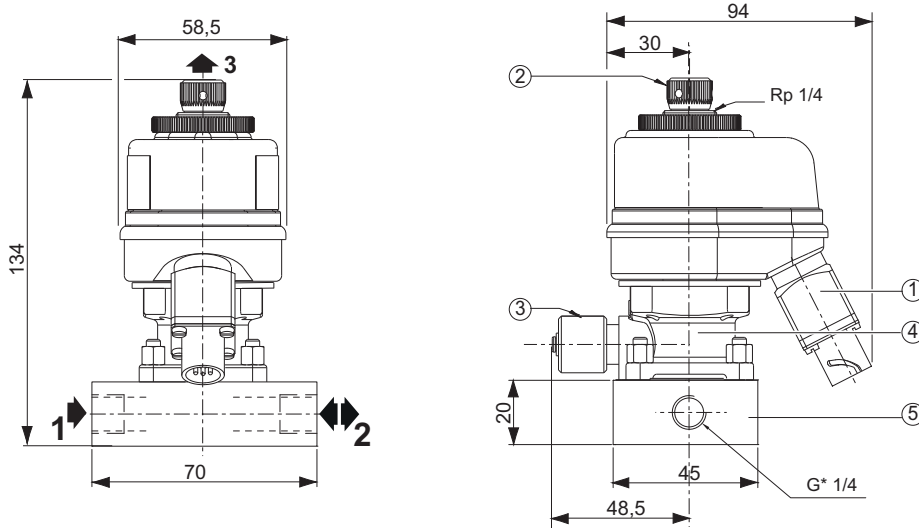
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G* ⁽¹⁾	(mm)			(ms)			12102036.48/DC 12102036.125/DC	MB301 O 3 - K2
1/4	3	16	260	250	0	10		

⁽¹⁾ Port 3: G 1/4

INSTALLATION

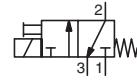
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- 1/4 pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
1,75

- ① QDC: Quick Disconnect Connector, 8N45
- ② 3/2 NC: exhaust protector
- ③ Manual operator location



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: MB301 - HM-63/9667

Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

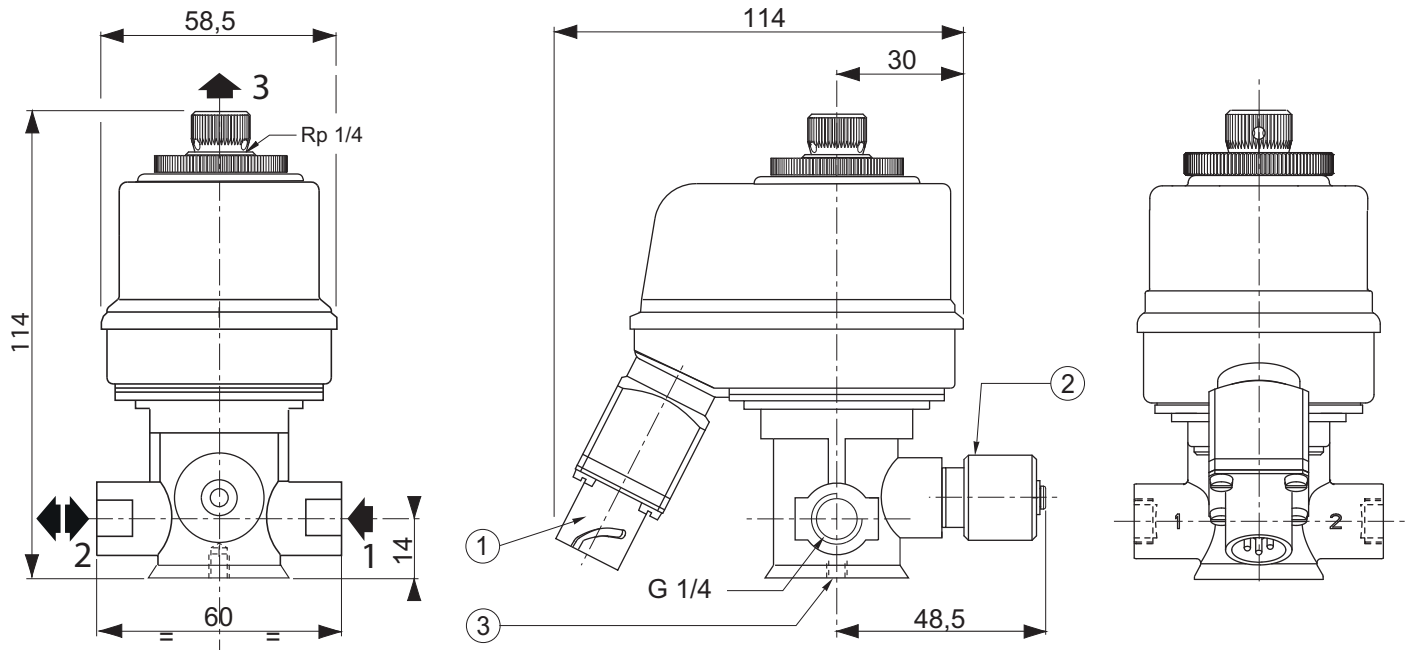
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G	(mm)			(ms)				
1/4	3	16	260	250	0	10	12102034.48/DC 12102034.125/DC	MB301 O 3 - K2

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INSTALLATION

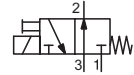
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Pipe connections (Rp) have standard thread according to ISO 7/1. Pipe connections (G) have standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)



weight
1

- ① QDC: Quick Disconnect Connector, 8N45
- ② Manual operator location
- ③ Mounting hole M5, depth 7 mm



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: V301 - HM-63/9699
 - Quality assurance: NF EN ISO 9001-2008
RCC-E 2012 # A5000
- EMC: EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, black standard paint
Threaded base, cover & screw Cast iron, steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	32	36	H	IP65	+5 to +50
125 VDC	39	44			

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SPECIFICATIONS

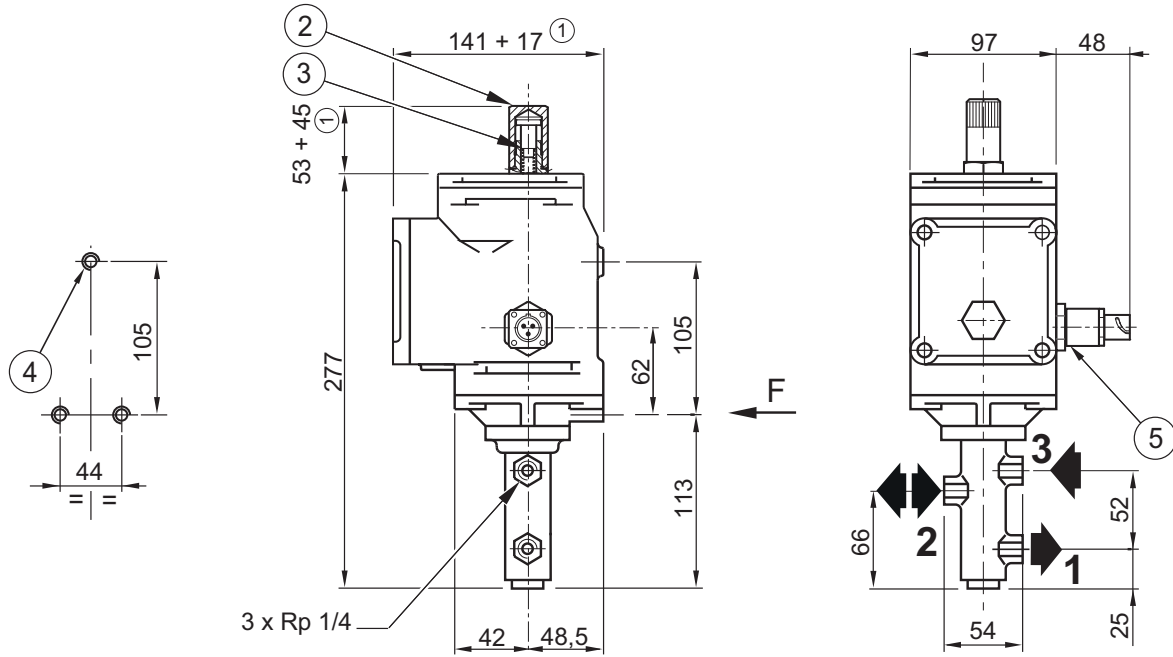
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)			(ms)				
1/4	5	27,4	450	500	0	10	X131439742001H9 X131439742002J1	V301 F 5 48/DC- K2 V301 F 5 125/DC- K2

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INSTALLATION

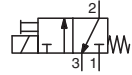
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1
- Replacement coils available

DIMENSIONS (mm), WEIGHT (kg)



weight
7,9

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ QDC: Quick Disconnect Connector, 8N45



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: V301 - HM-63/9699

Quality assurance: NF EN ISO 9001-2008

RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, black standard paint
Threaded base, cover & screw Cast iron, steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	32	36	H	IP65	+5 to +50
125 VDC	39	44			

VAMAC® is a registered trademark of Dupont Performance Elastomers

SPECIFICATIONS

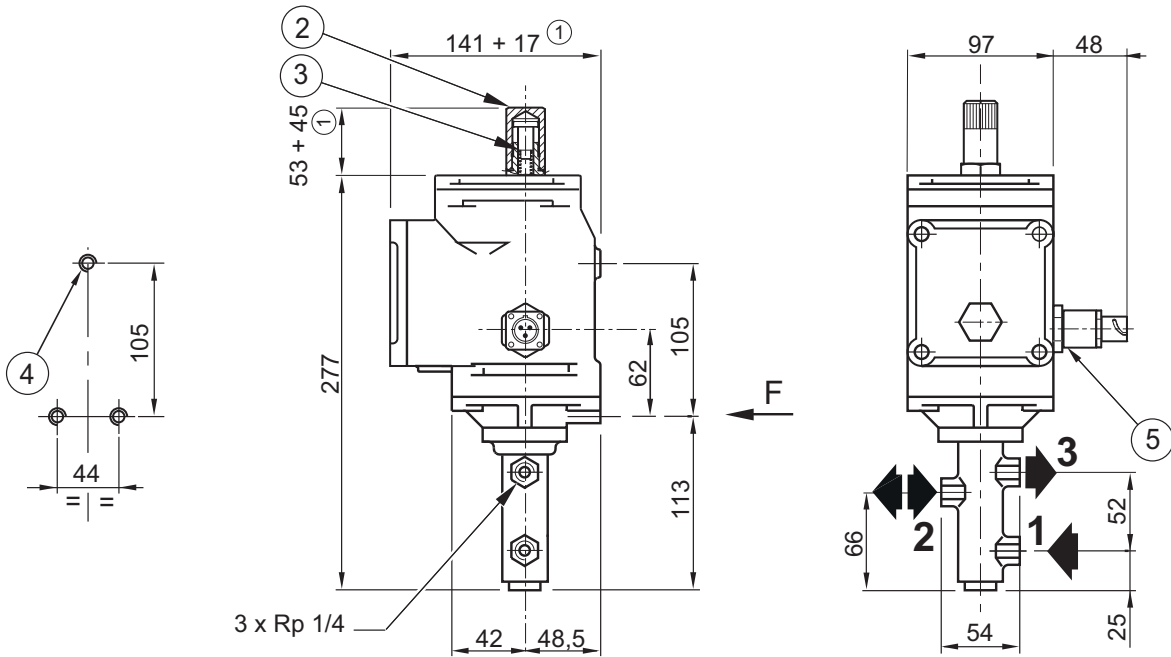
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)			(ms)				
1/4	5	27,4	450	500	0	10	X131439753001H9	V301 O 5 48/DC- K2
							X131439753002J1	V301 O 5 125/DC- K2

90099 GB-2016/R01 Availability, design and specifications are subject to change without notice. All rights reserved.

INSTALLATION

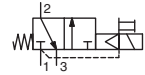
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
7,9

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ QDC: Quick Disconnect Connector, 8N45



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: MT302 - HM-63/9667
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil protection Unidirectional diode
 Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
	125 VDC	14			

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SPECIFICATIONS

pipe size	orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		1 → 2		2 → 3			min.	max.		
		(m³/h)	(l/min)	(m³/h)	(l/min)					
G	9	80,6	1345	76	1270	500	3	10	23102029.125/DC	MT302 D ⁽¹⁾ - K2

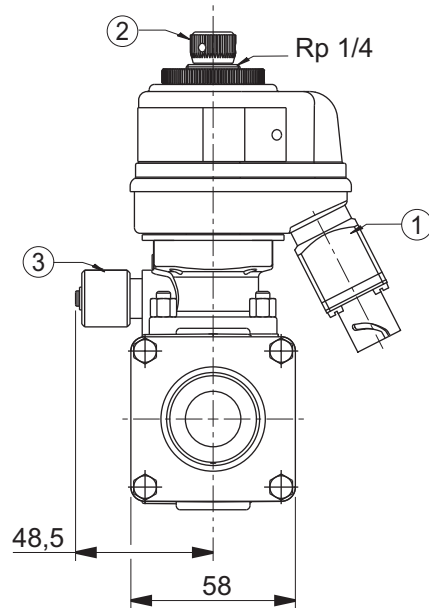
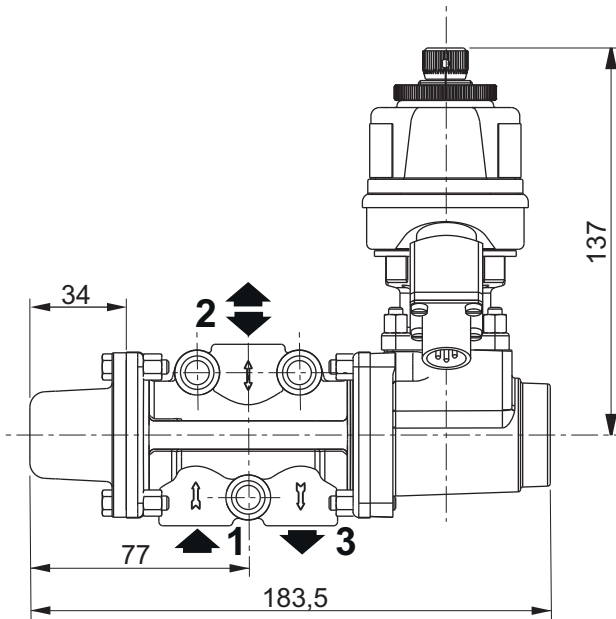
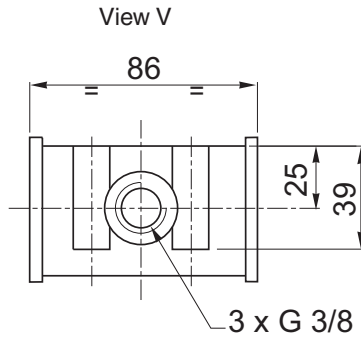
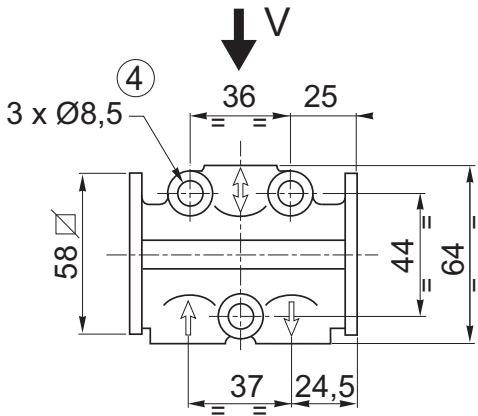
⁽¹⁾ D = Direct supply.

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INSTALLATION

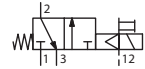
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connections (Rp) have standard thread according to ISO 7/1. Pipe connections (G) have standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)



weight
2,7

- ① QDC: Quick Disconnect Connector, 8N45
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: MT302 - HM-63/9667
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil protection Unidirectional diode
 Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
	125 VDC	14			

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SPECIFICATIONS

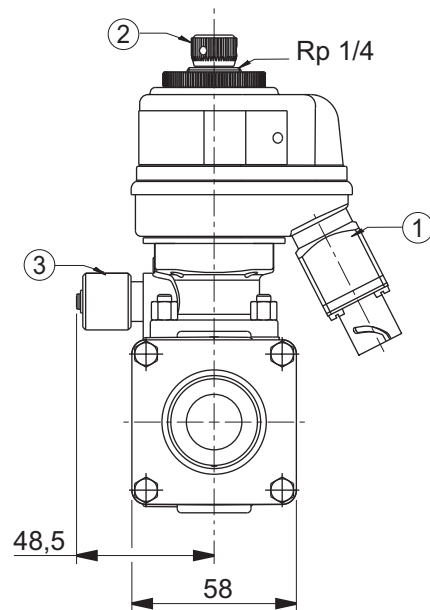
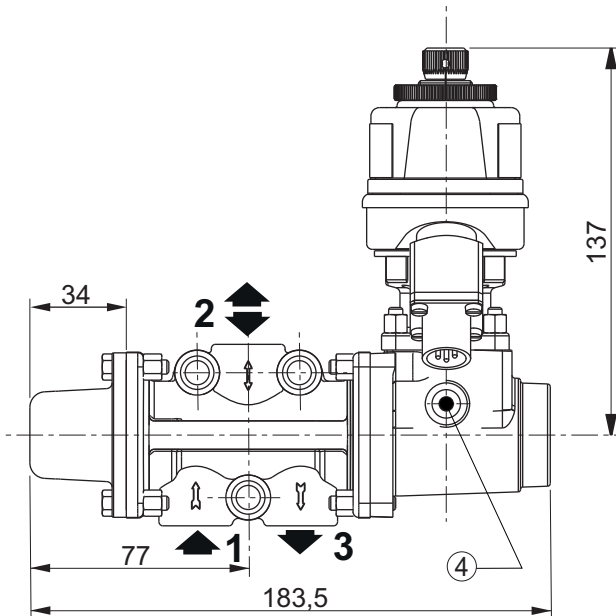
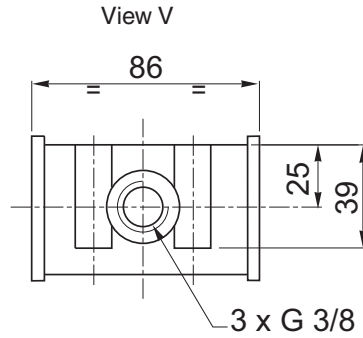
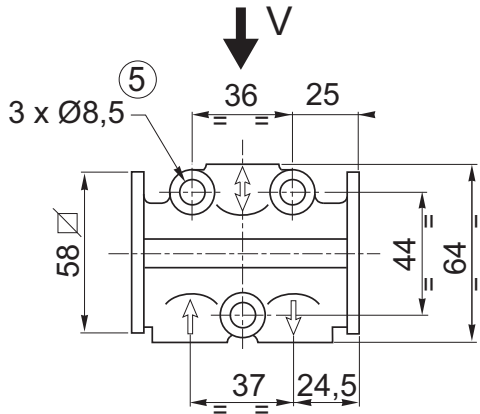
pipe size	orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		1 → 2		2 → 3			min.	max.		
		(m³/h)	(l/min)	(m³/h)	(l/min)					
G	9	80,6	1345	76	1270	500	3	10	23102037.125/DC	MT302 S ⁽¹⁾ - K2

⁽¹⁾ External supply

INSTALLATION

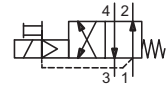
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connections (Rp) have standard thread according to ISO 7/1. Pipe connections (G) have standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg) 



weight
2,7

- ① QDC: Quick Disconnect Connector, 8N45
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ G 1/4 for external pilot supply
- ⑤ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

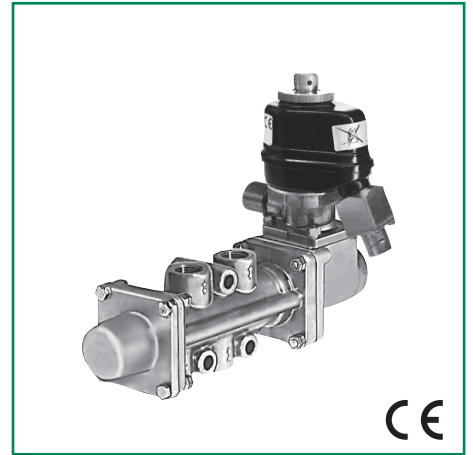
- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: MT402 - HM-63/9667

Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
Accident 600 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
125 VDC	14	16	H	IP54	+5 to +50

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SPECIFICATIONS

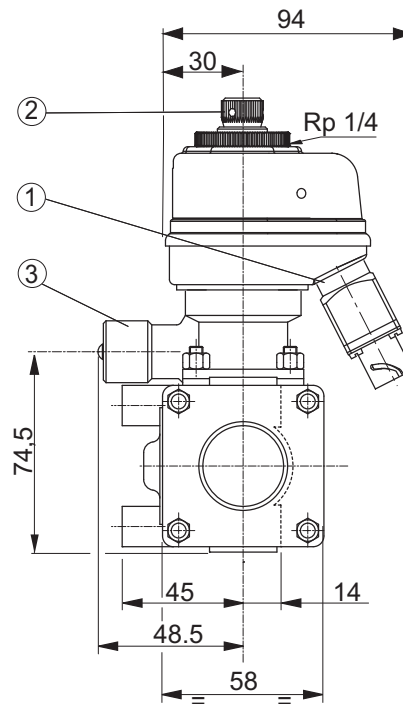
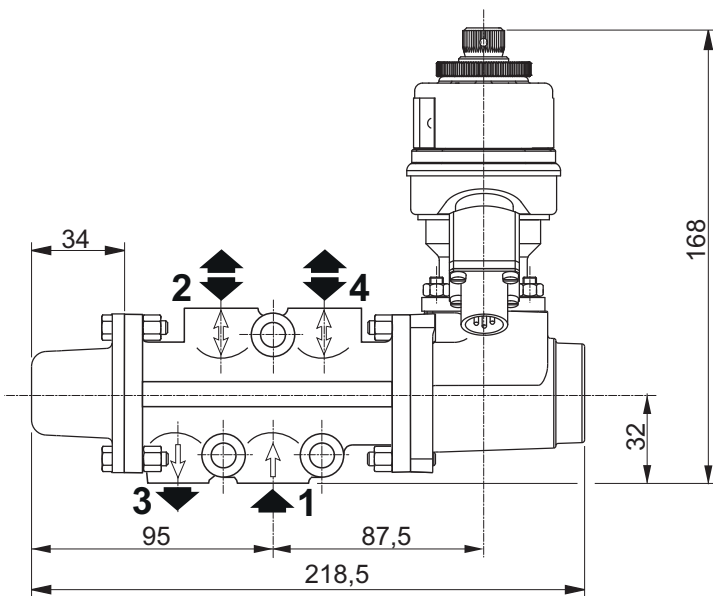
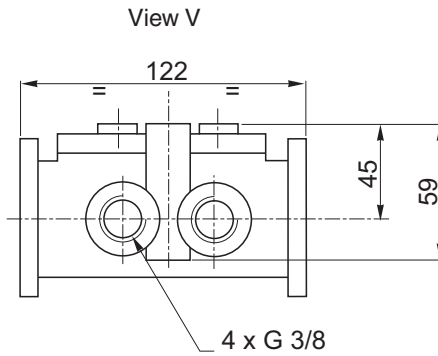
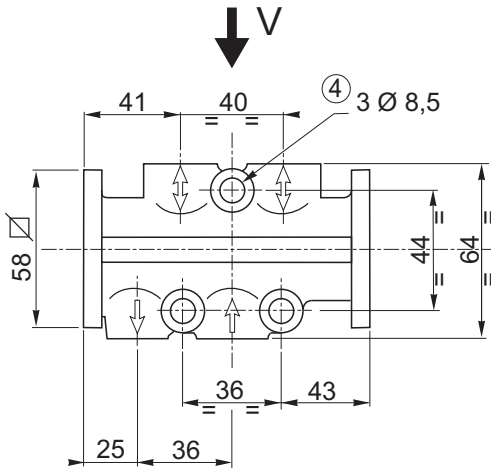
pipe size	orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar)						response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)			(l/min)				min.	max.		
G		1 → 2 1 → 4	4 → 3	2 → 3	1 → 2 1 → 4	4 → 3	2 → 3					
3/8	9	84,4	61,6	80,7	1400	1030	1345	500	3	10	23202031.125/DC	MT402 D ⁽¹⁾ - K2

⁽¹⁾ D = Direct supply.

INSTALLATION

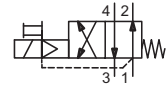
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
4

- ① QDC: Quick Disconnect Connector, 8N45
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

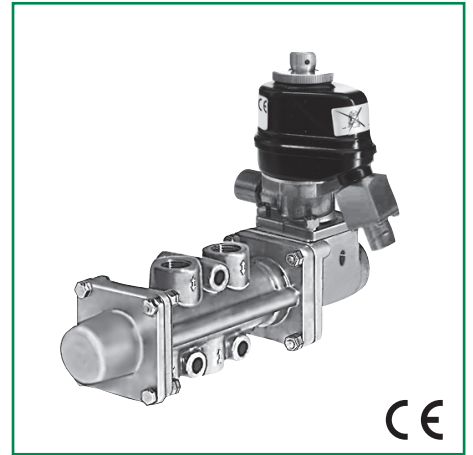
- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: MT402 - HM-63/9667

Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
	125 VDC	14			

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
SPECIFICATIONS

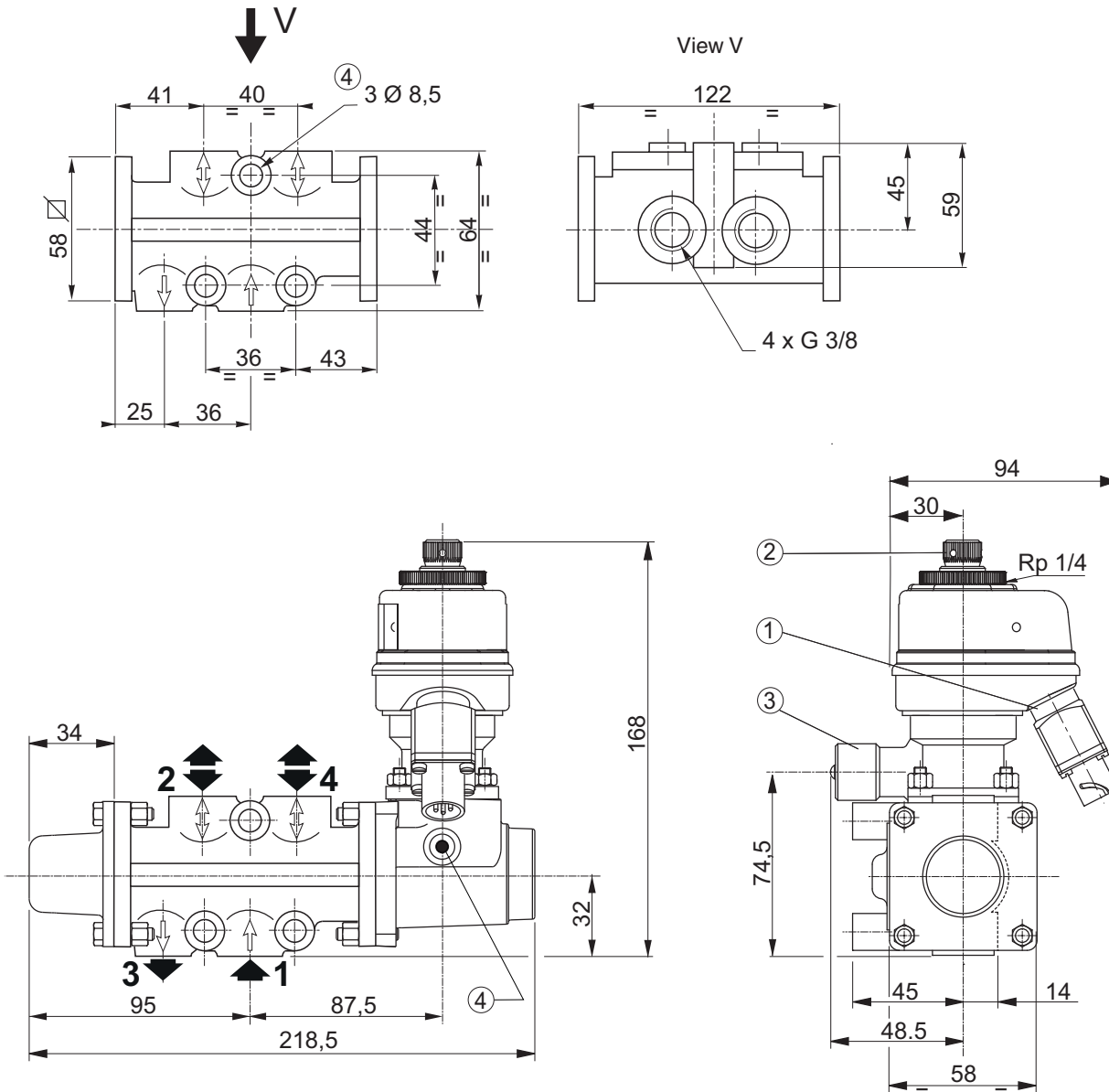
pipe size	orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar)						response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		(m ³ /h)			(l/min)				min.	max.		
		1 → 2 1 → 4	4 → 3	2 → 3	1 → 2 1 → 4	4 → 3	2 → 3					
G 3/8	9	84,4 1 → 4	61,6	80,7	1400	1030	1345	500	3	10	23202032.125/DC	MT402 S ⁽¹⁾ - K2

⁽¹⁾ External supply

INSTALLATION

- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg) 



weight
4

- ① QDC: Quick Disconnect Connector, 8N45
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ G 1/4 for external pilot supply
- ⑤ 3 mounting holes 8,5 mm dia.

QUALIFICATION DESCRIPTION

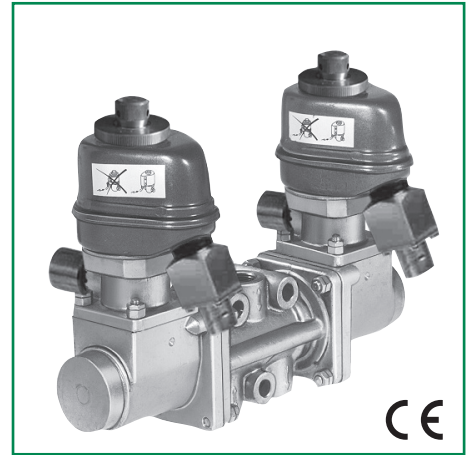
- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: M2T302 - HM-63/9667

Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
	125 VDC	14			

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SPECIFICATIONS


pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.)	operating pressure differential (bar)		catalogue number	reference
		1 → 2		2 → 3			min.	max.		
		(m³/h)	(l/min)	(m³/h)	(l/min)					
G	(mm)									
3/8	9	80,6	1345	76	1270	500	3	10	23102034.125/DC	M2T302 D ⁽¹⁾ - K2

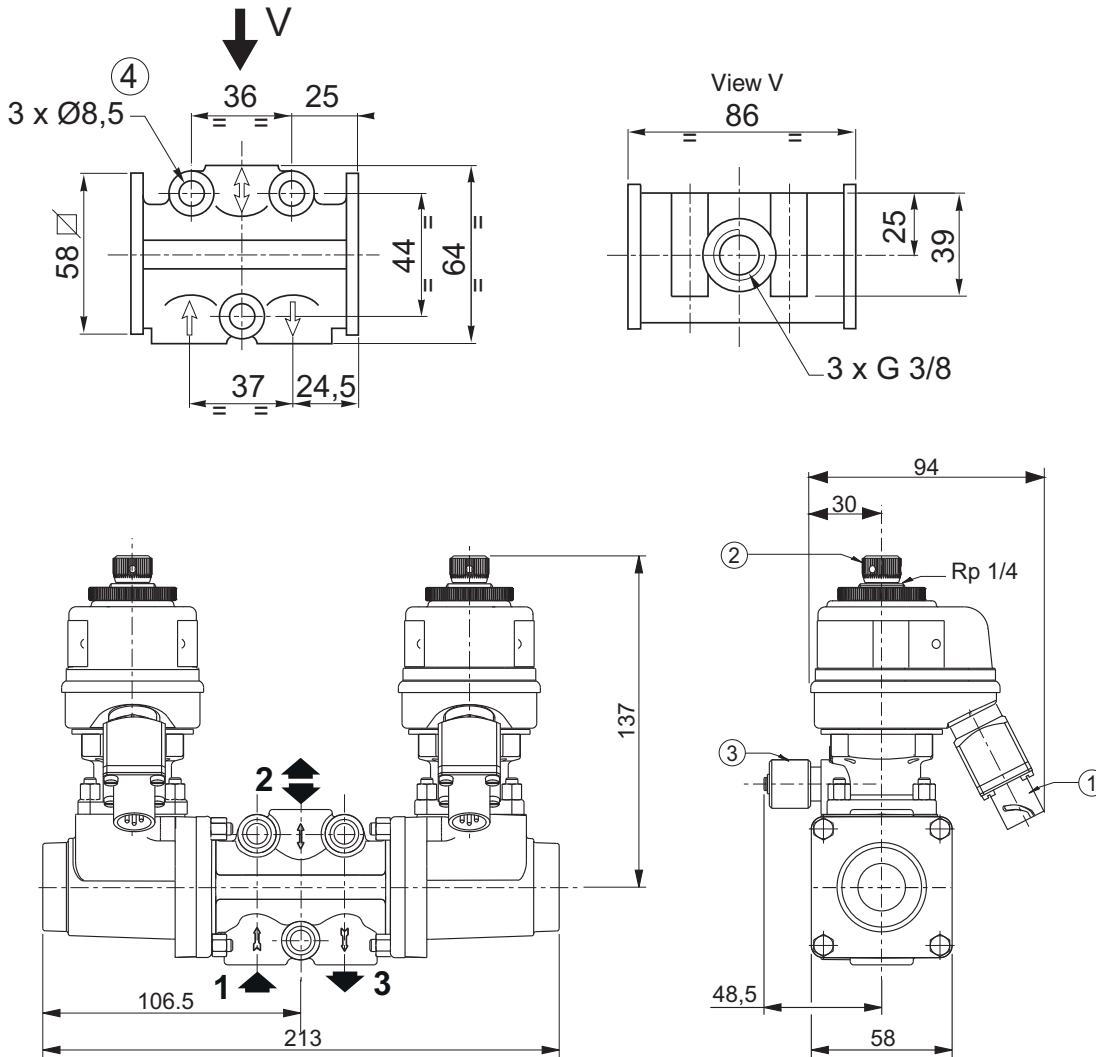
⁽¹⁾ D = Direct supply.

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INSTALLATION

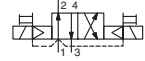
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connections (Rp) have standard thread according to ISO 7/1. Pipe connections (G) have standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg) 



weight
4,3

- ① QDC: Quick Disconnect Connector, 8N45
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: M2T402 - HM-63/9667
 - Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000
- EMC: EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)						response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)			(l/min)				min.	max.		
G	(mm)	1 → 2 1 → 4	4 → 3	2 → 3	1 → 2 1 → 4	4 → 3	2 → 3	500	3	10	23202033.48/DC 23202033.125/DC	M2T402 D ⁽¹⁾ - K2
3/8	9	84,4	61,6	80,7	1400	1030	1345					

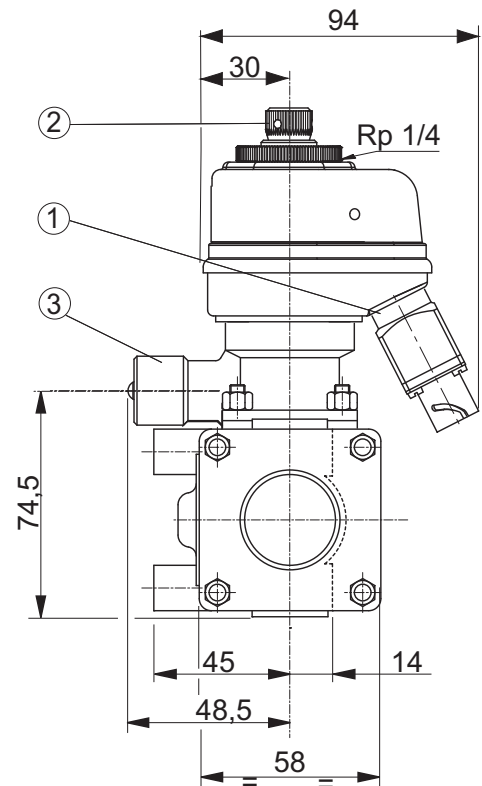
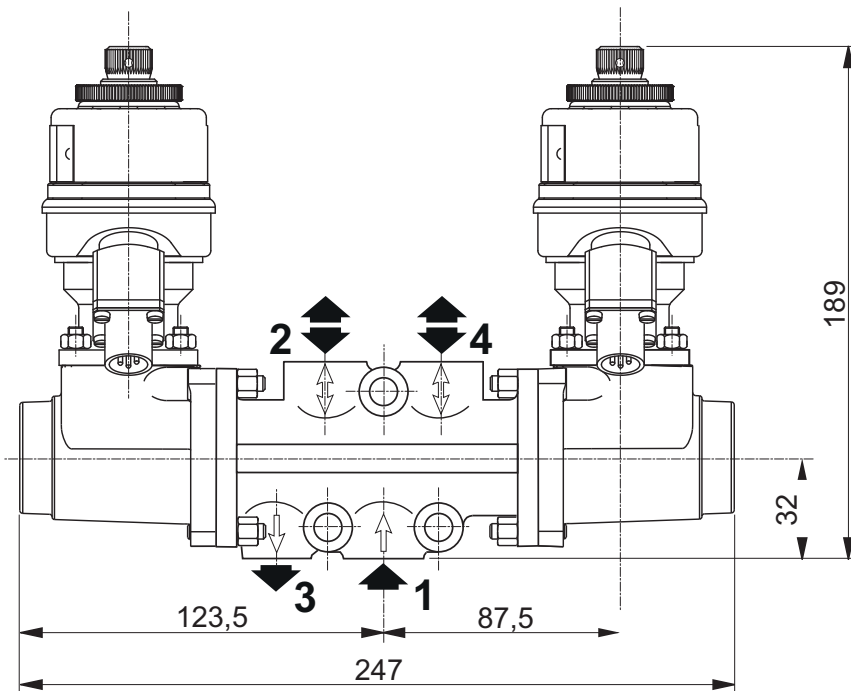
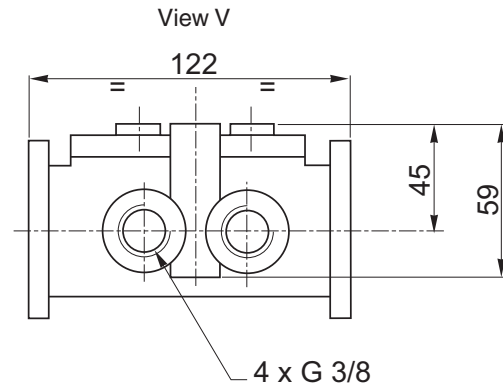
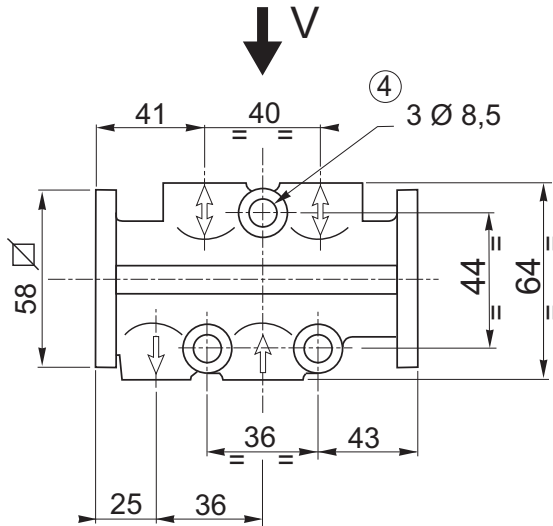
⁽¹⁾ D = Direct supply.

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INSTALLATION

- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connections (Rp) have standard thread according to ISO 7/1. Pipe connections (G) have standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)



weight
5,5

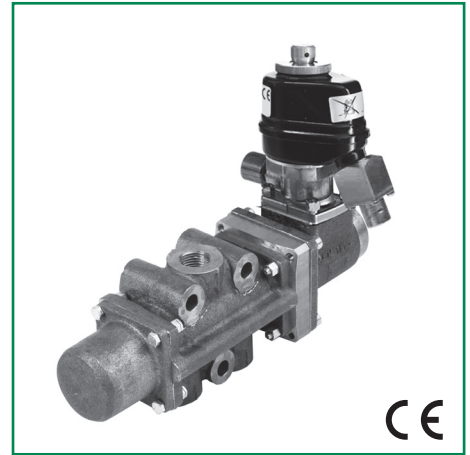
- ① QDC: Quick Disconnect Connector, 8N45
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 8,5 mm dia.

QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: MT303 - HM-63/9667
 Quality assurance: NF EN ISO 9001-2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil protection Unidirectional diode
 Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

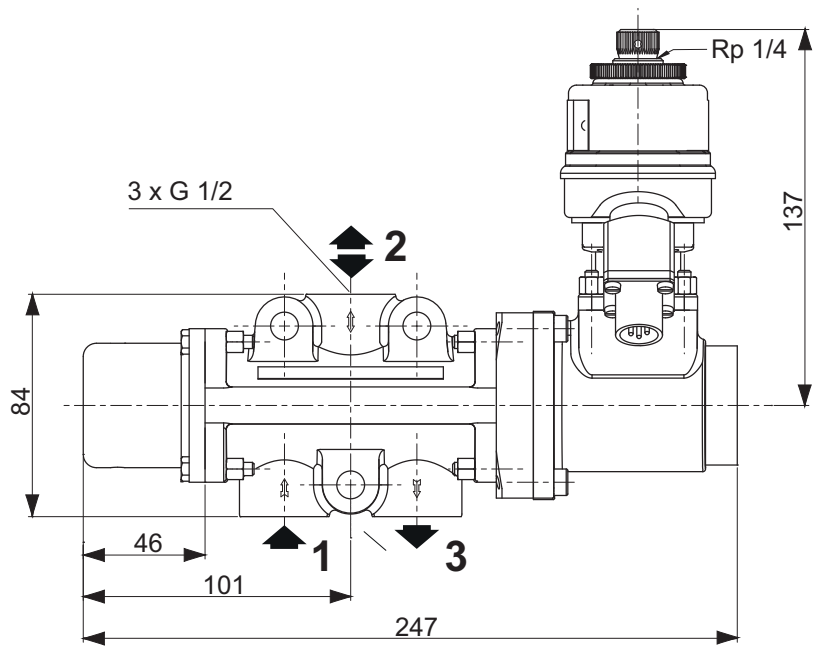
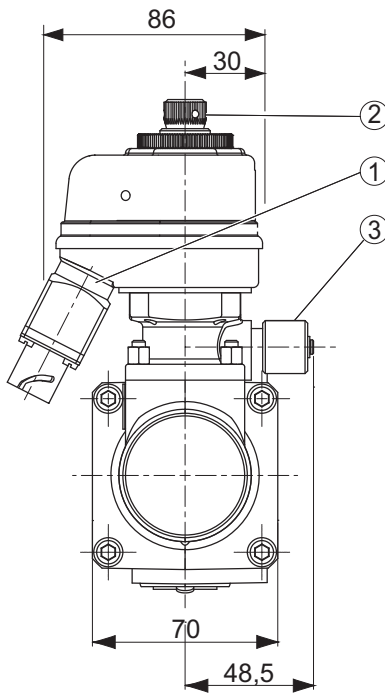
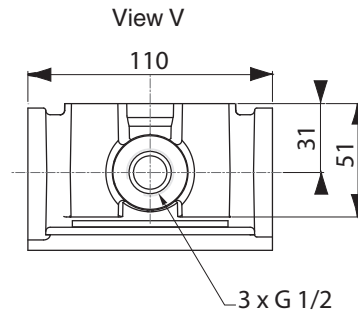
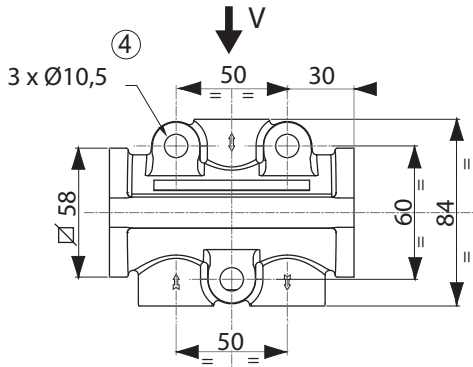
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.)	operating pressure differential (bar)		catalogue number	reference
		1 → 2		2 → 3			min.	max.		
G	(mm)	(m³/h)	(l/min)	(m³/h)	(l/min)	(ms)				
1/2	15	261	4360	172,7	2880	500	3	10	23102030.48/DC 23102030.125/DC	MT303 D ⁽¹⁾ - K2

⁽¹⁾ D = Direct supply.

INSTALLATION

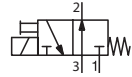
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
4

- ① QDC: Quick Disconnect Connector, 8N45
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 10,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: MB301 - HM-63/9667

Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5 to Ø11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

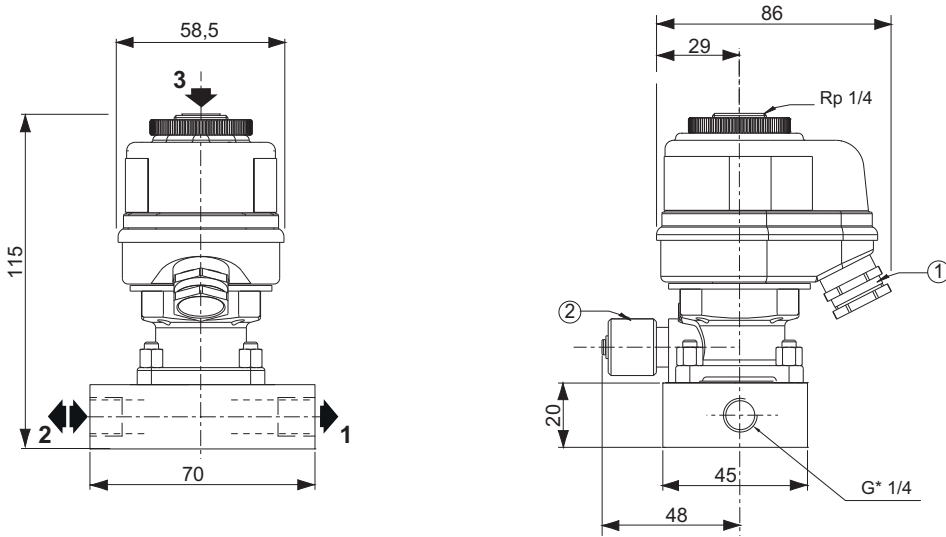
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G*	(mm)			(ms)				
1/4	3	16	260	250	0	8	12102046.48/DC 12102046.125/DC	MB301 F 3 - K2

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INSTALLATION

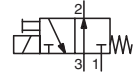
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- 1/4 pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
1,75

- ① Cable entry, CM10 (Ø 6,5-11 mm)
- ② Manual operator location



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: MB301 - HM-63/9667

Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5 to Ø11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

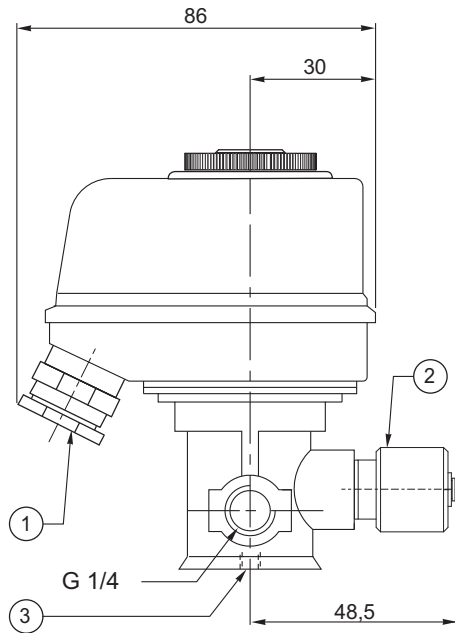
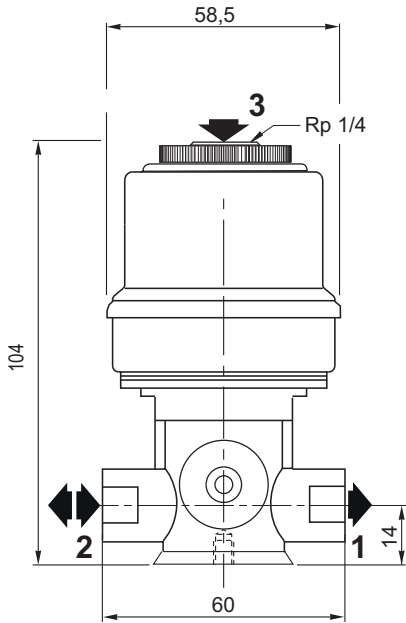
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G	(mm)			(ms)				
1/4	3	16	260	250	0	8	12102031.48/DC 12102031.125/DC	MB301 F 3 - K2

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INSTALLATION

- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Pipe connections (Rp) have standard thread according to ISO 7/1. Pipe connections (G) have standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)



weight
1

- ① Cable entry, CM10 (Ø 6,5-11 mm)
- ② Manual operator location
- ③ Mounting hole M5, depth 7 mm

QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: MB301 - HM-63/9667

Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5 to Ø11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

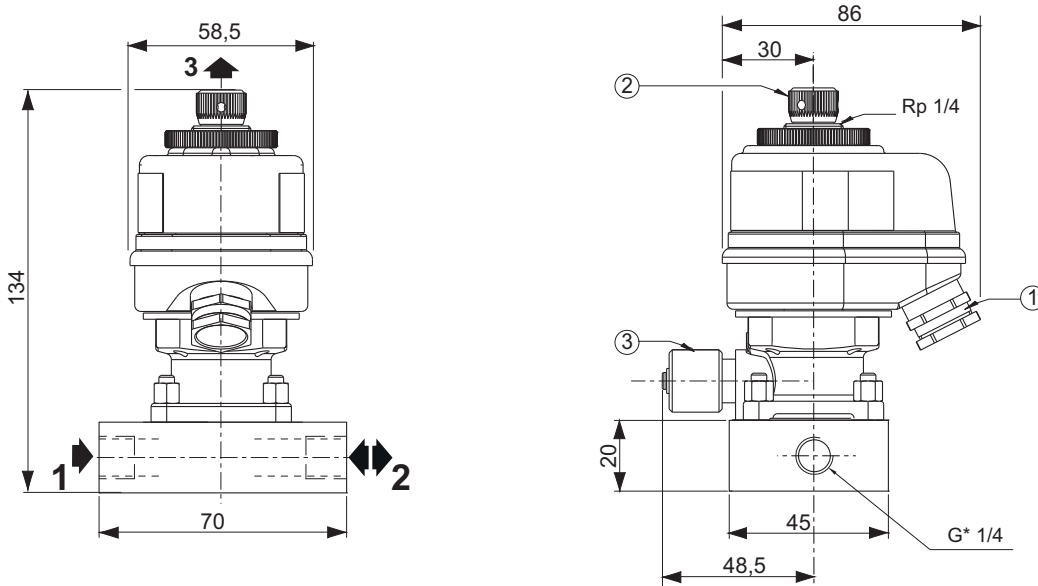
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G*	(mm)			(ms)			12102030.48/DC 12102030.125/DC	MB301 O 3 - K2
1/4	3	16	260	250	0	10		

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INSTALLATION

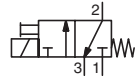
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- 1/4 pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
1,75

- ① Cable entry, CM10 (Ø 6,5-11 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: MB301 - HM-63/9667

Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5 to Ø11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

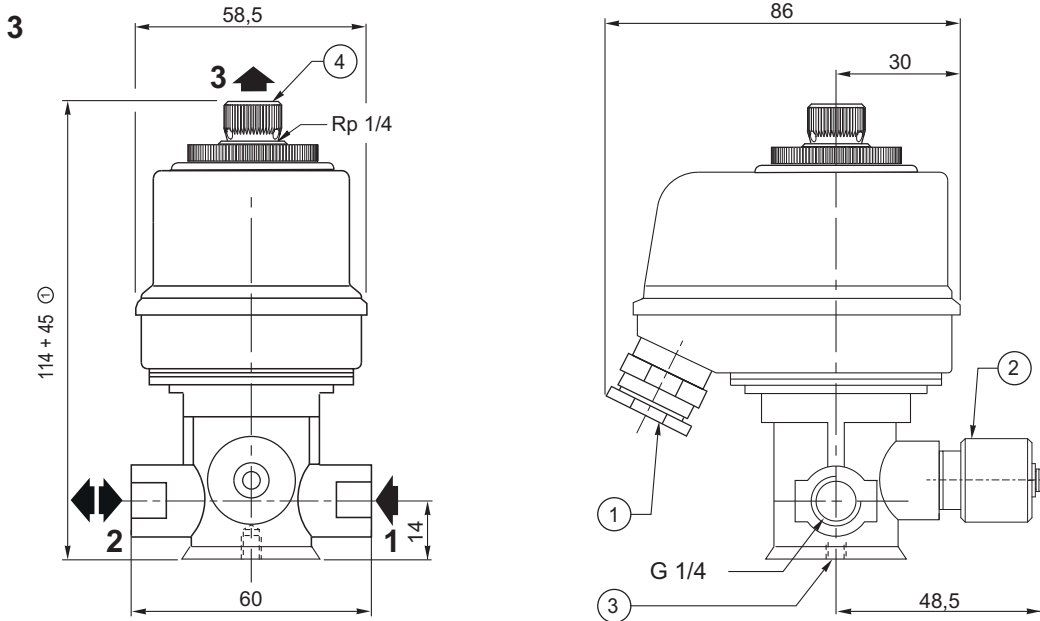
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G	(mm)			(ms)				
1/4	3	16	260	250	0	10	12102003.48/DC 12102003.125/DC	MB301 O 3 - K2

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INSTALLATION

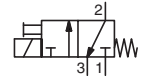
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Pipe connections (Rp) have standard thread according to ISO 7/1. Pipe connections (G) have standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)



weight
1

- ① Cable entry, CM10 (Ø 6,5-11 mm)
- ② Manual operator location
- ③ Mounting hole M5, depth 7 mm
- ④ 3/2 NC: exhaust protector



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: MB301 - HM-63/9667 + ASCO argut file 503316
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil connection Screw terminals
 Coil protection Unidirectional diode
 Cable entry Cable gland, CM12 (cable Ø 8,5-13 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50

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SPECIFICATIONS

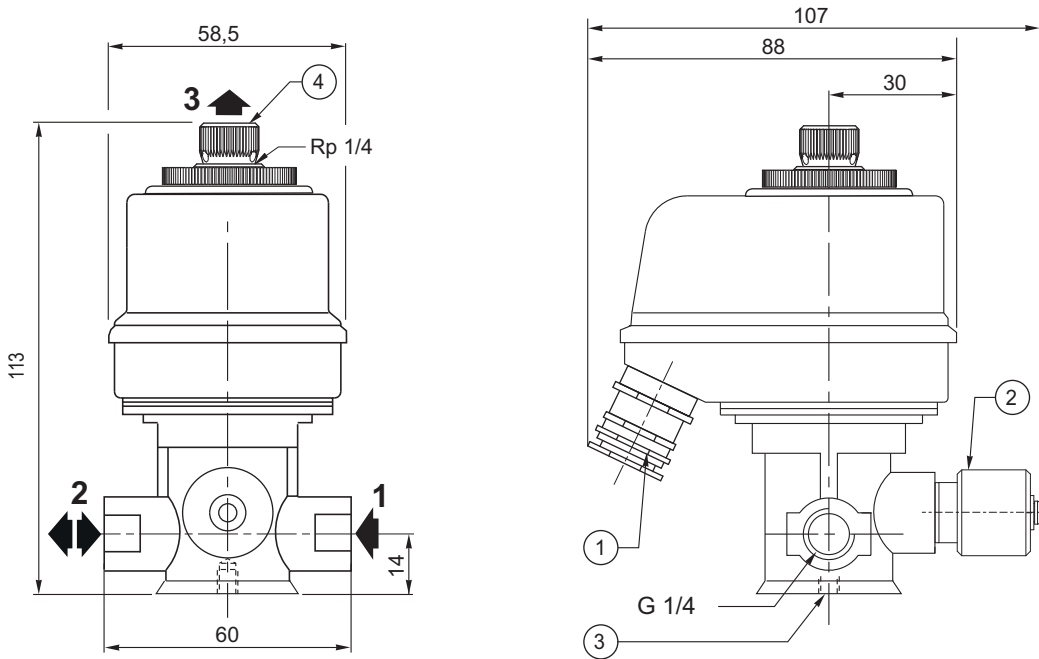
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G* ⁽¹⁾	(mm)			(ms)				
1/4	3	16	260	250	0	10	X121519572001H9	MB301 O 3 - K2

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INSTALLATION

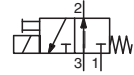
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Pipe connections (Rp) have standard thread according to ISO 7/1. Pipe connections (G) have standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)



weight
1,6

- ① Cable entry, CM12 (cable Ø 8,5-13 mm)
- ② Manual operator location
- ③ Mounting hole M5, depth 7 mm
- ④ 3/2 NC: exhaust protector



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: V301 - HM-63/9699

Quality assurance: NF EN ISO 9001-2008
RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, black standard paint
Threaded base, cover & screw Steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5-11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	32	36	H	IP65	+5 to +50
125 VDC	39	44			

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SPECIFICATIONS

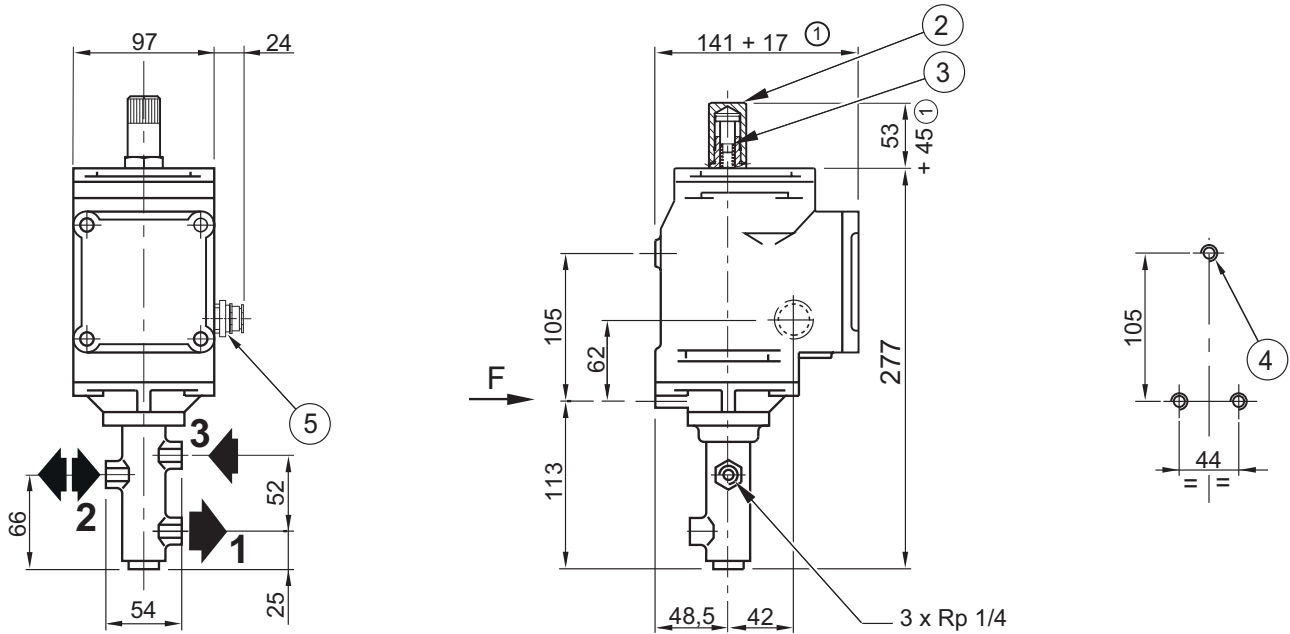
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)			(ms)				
1/4	5	27,4	450	500	0	10	X131439741001H9 X131439741002J1	V301 F 5 48/DC- K2 V301 F 5 125/DC- K2

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INSTALLATION

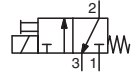
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
7,9

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ Cable entry, CM10 (Ø 6,5-11 mm)



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: V301 - HM-63/9699

Quality assurance: NF EN ISO 9001-2008

RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, black standard paint
Threaded base, cover & screw Steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5-11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	32	36	H	IP65	+5 to +50
125 VDC	39	44			

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SPECIFICATIONS

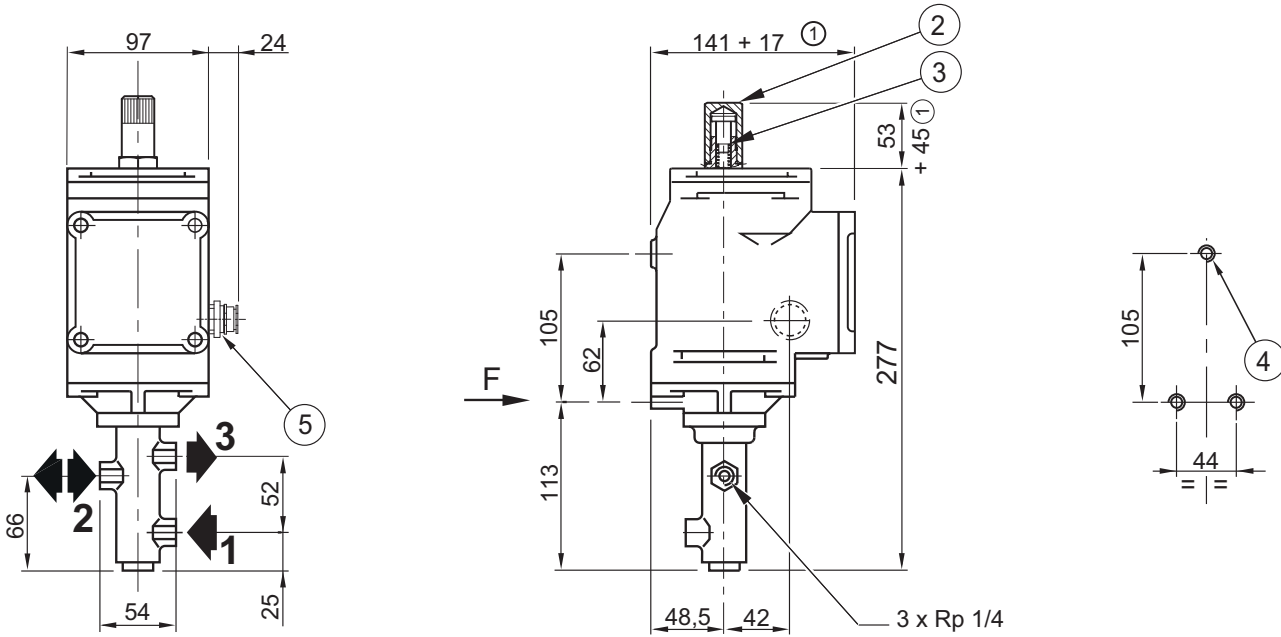
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)			(ms)				
1/4	5	27,4	450	500	0	10	X131439744001H9	V301 O 5 48/DC - K2
							X131439744002J1	V301 O 5 125/DC - K2

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INSTALLATION

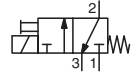
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
7,9

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ Cable entry, CM10 (Ø 6,5-11 mm)



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: V301 - HM-63/9699 + ASCO argut file 503316
 - Quality assurance: NF EN ISO 9001-2008
RCC-E 2012 # A5000
- EMC:
 - EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 40 years at 23°C
 - Functional +10°C to +50°C
 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, black standard paint
Threaded base, cover & screw Cast iron, steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM12 (cable Ø 8,5-13 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	32	36	H	IP65	+5 to +50

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SPECIFICATIONS

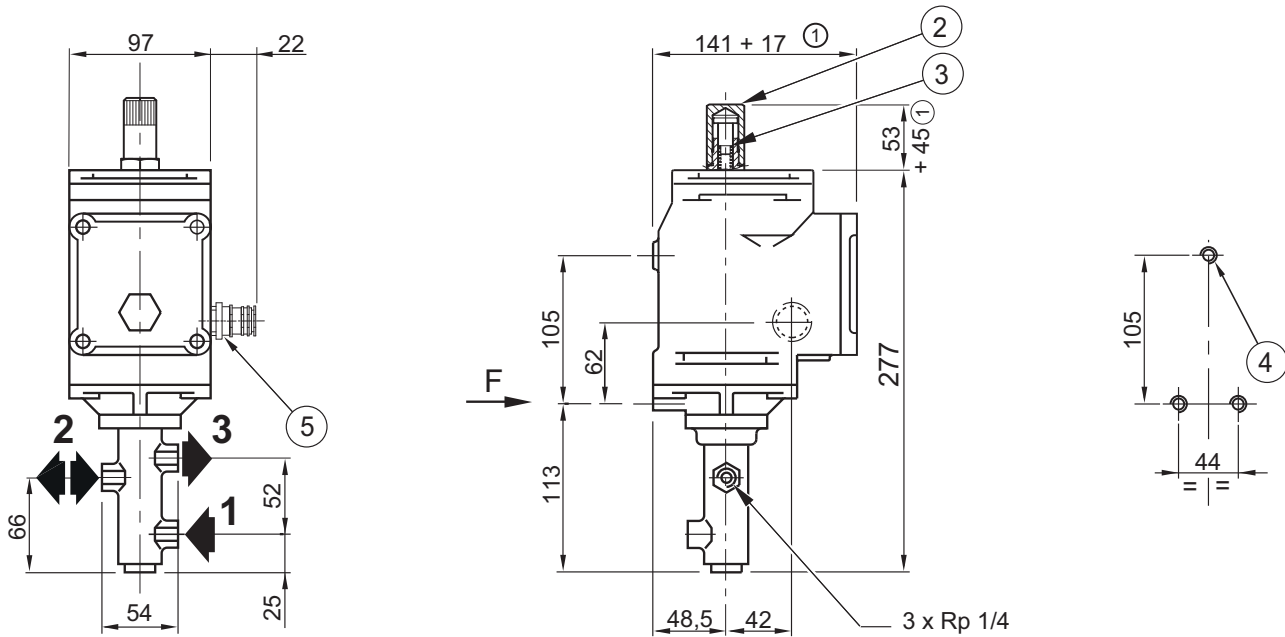
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)	(m³/h)	(l/min)	(ms)	min.	max.	X131519571001H9	V301 O 5 - K2
1/4	5	27,4	450	500	0	10		

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INSTALLATION

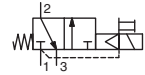
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
7

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ Cable entry, CM12 (cable Ø 8,5-13 mm)



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: MT302 HM-63/9667

Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5-11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
	48 VDC	11			
125 VDC	14	16			

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SPECIFICATIONS

pipe size	orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		1 → 2		2 → 3			min.	max.		
		(m³/h)	(l/min)	(m³/h)	(l/min)					
G										
3/8	9	80,6	1345	76	1270	500	3	10	23102033.48/DC 23102033.125/DC	MT302 D ⁽¹⁾ - K2

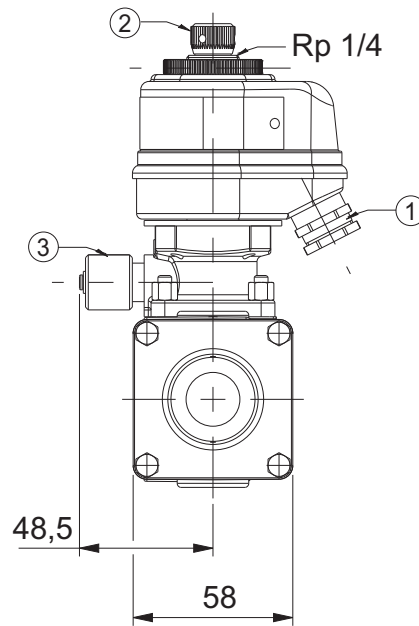
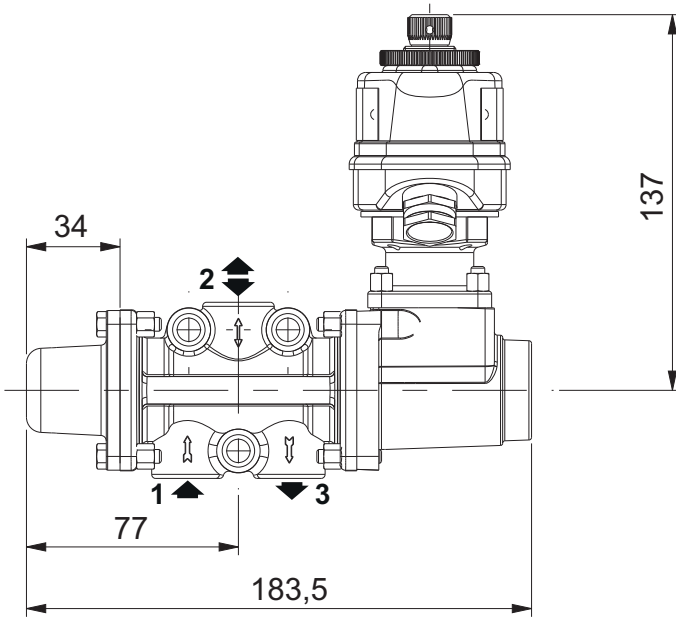
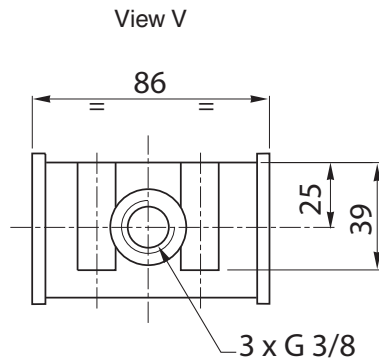
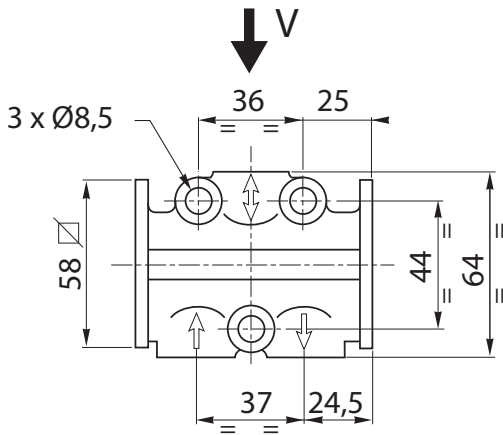
⁽¹⁾ D = Direct supply.

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INSTALLATION

- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

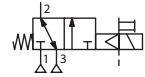
DIMENSIONS (mm), WEIGHT (kg)



weight

2,7

- ① Cable entry, CM10 (Ø6,5-11 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: MT302 - HM-63/9667
 - Quality assurance: NF EN ISO 9001-2008
RCC-E 2012 # A5000
- EMC:
 - EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 40 years at 23°C
 - Functional +10°C to +50°C
 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic:
 - Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 - RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5-11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

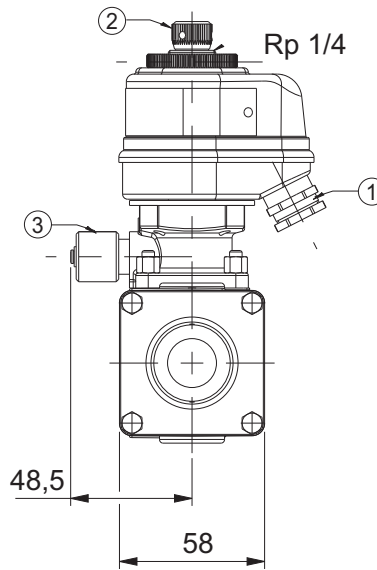
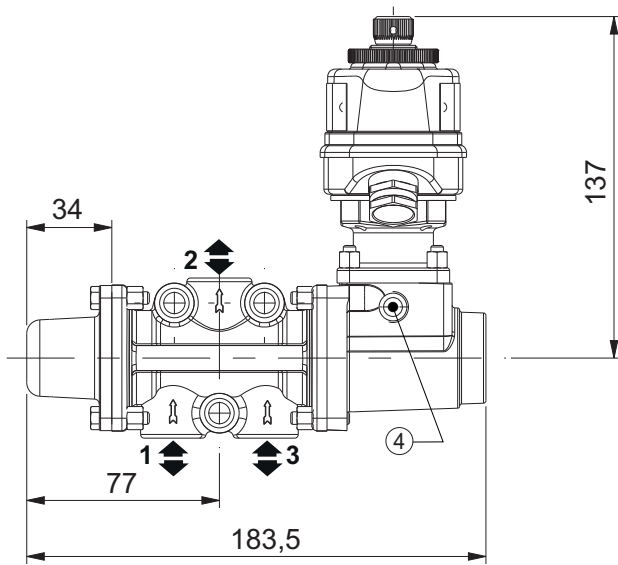
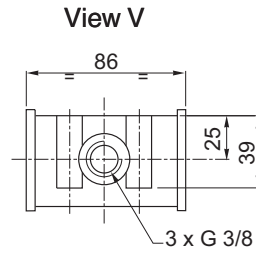
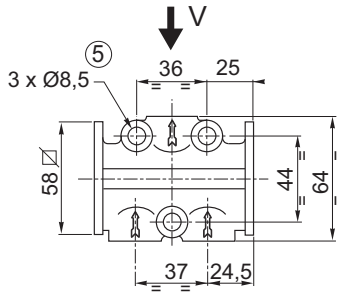
pipe size	orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar) 1 → 2		response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G	(mm)	(m³/h)	(l/min)	(ms)	min.	max.	23102036.48/DC 23102036.125/DC	MT302 S ⁽¹⁾ 2I 1O - K2
3/8	9	76	1270	500	3	10		

⁽¹⁾ S = external supply / 2I1O = 2 inlets 1 outlet

INSTALLATION

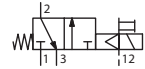
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
2,7

- ① Cable entry, CM10 (Ø 6,5-11 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ G 1/4 for external pilot supply
- ⑤ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: MT302 - HM-63/9667
 - Quality assurance: NF EN ISO 9001-2008
RCC-E 2012 # A5000
- EMC:
 - EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 40 years at 23°C
 - Functional +10°C to +50°C
 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic:
 - Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 - RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5-11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

VAMAC® is a registered trademark of Dupont Performance Elastomers

SPECIFICATIONS

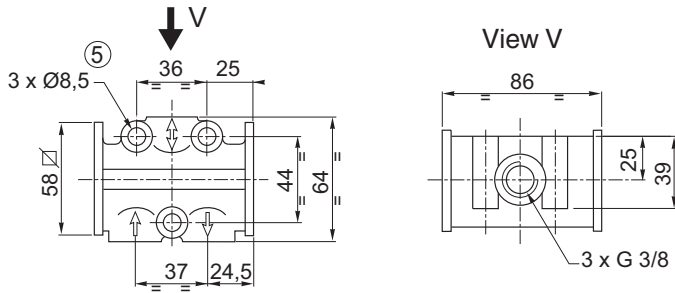
pipe size	orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference	orientation type
		1 → 2 (m³/h) (l/min)		2 → 3 (m³/h) (l/min)			min.	max.			
3/8	9	80,6	1345	76	1270	500	3	10	23102025.48/DC	MT302 S ⁽¹⁾ - K2	01
									23102025.125/DC		
									23102113.48/DC		02
									23102113.125/DC		

⁽¹⁾ External supply

INSTALLATION

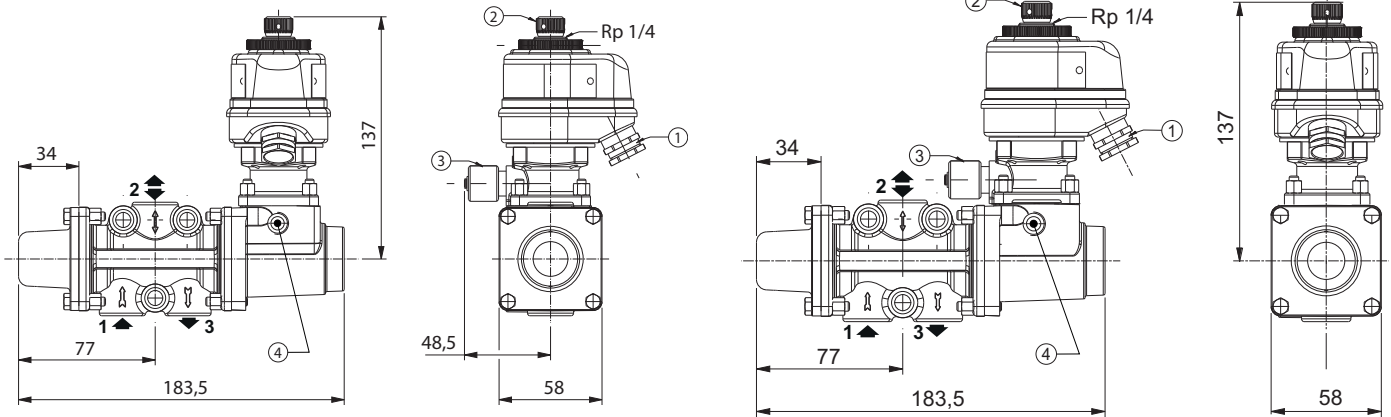
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



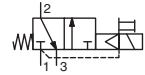
TYPE 01

TYPE 02



type	weight
01 / 02	2,7

- ① Cable entry, CM10 (Ø 6,5-11 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ G 1/4 for external pilot supply
- ⑤ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: MT302 HM-63/9667 + ASCO argut file 503316
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil connection Screw terminals
 Coil protection Unidirectional diode
 Cable entry Cable gland, CM12 (cable Ø 8,5-13 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50

VAMAC® is a registered trademark of Dupont Performance Elastomers

SPECIFICATIONS

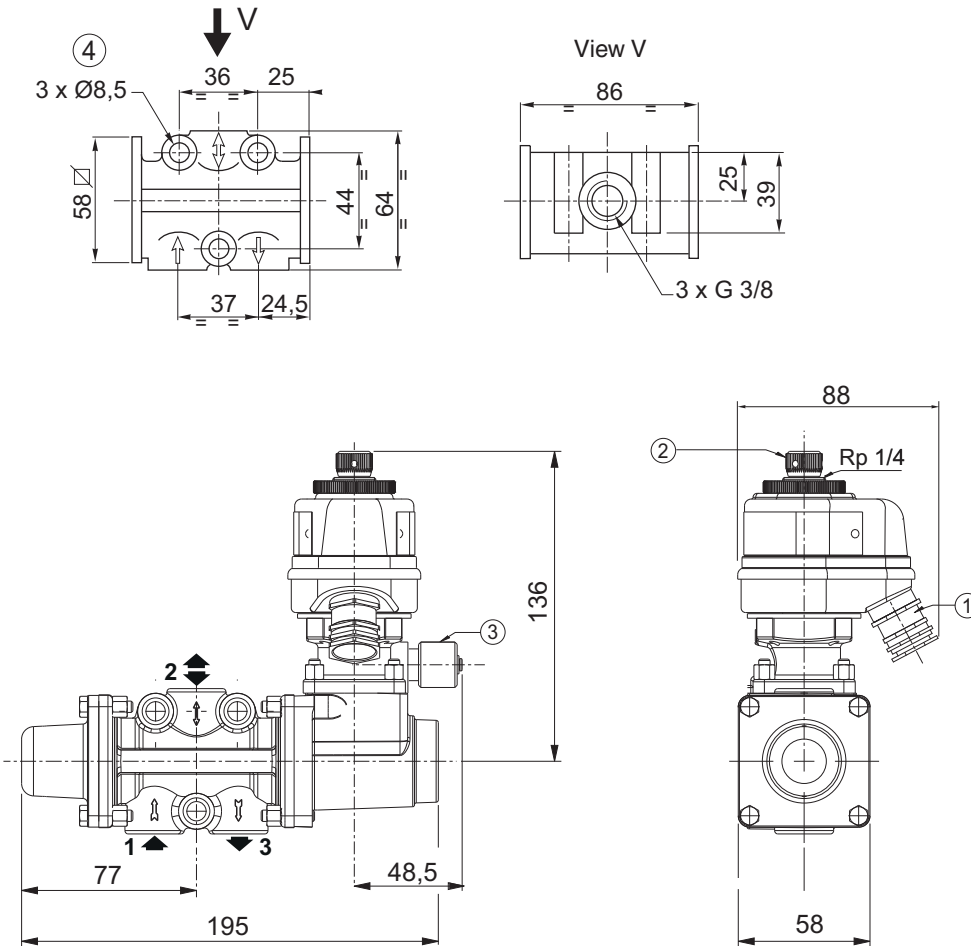
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.)	operating pressure differential (bar)		catalogue number	reference
		1 → 2		2 → 3			min.	max.		
G	(mm)	(m³/h)	(l/min)	(m³/h)	(l/min)	(ms)				
3/8	9	80,6	1345	76	1270	500	3	10	X231519566001H9	MT302 D ⁽¹⁾ .48/DC - K2

⁽¹⁾ D = Direct supply.

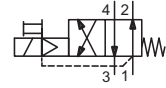
INSTALLATION

- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight	
3,5	<ul style="list-style-type: none"> ① Cable entry, CM12 (cable Ø 8,5-13 mm) ② 3/2 NC: exhaust protector ③ Manual operator location ④ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

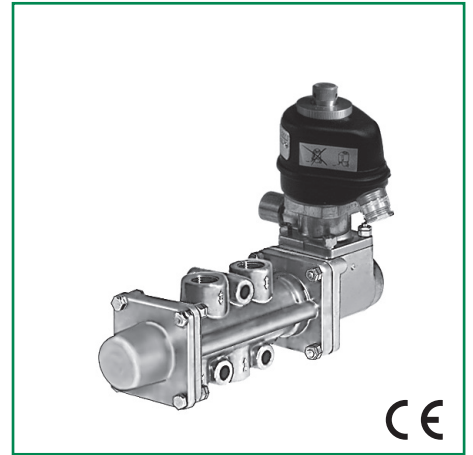
Test requirements: RCC-E + HM-63/7282-5

Test report: MT402 - HM-63/9667

Quality assurance: NF EN ISO 9001 v2008

RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5-11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

VAMAC® is a registered trademark of Dupont Performance Elastomers

SPECIFICATIONS

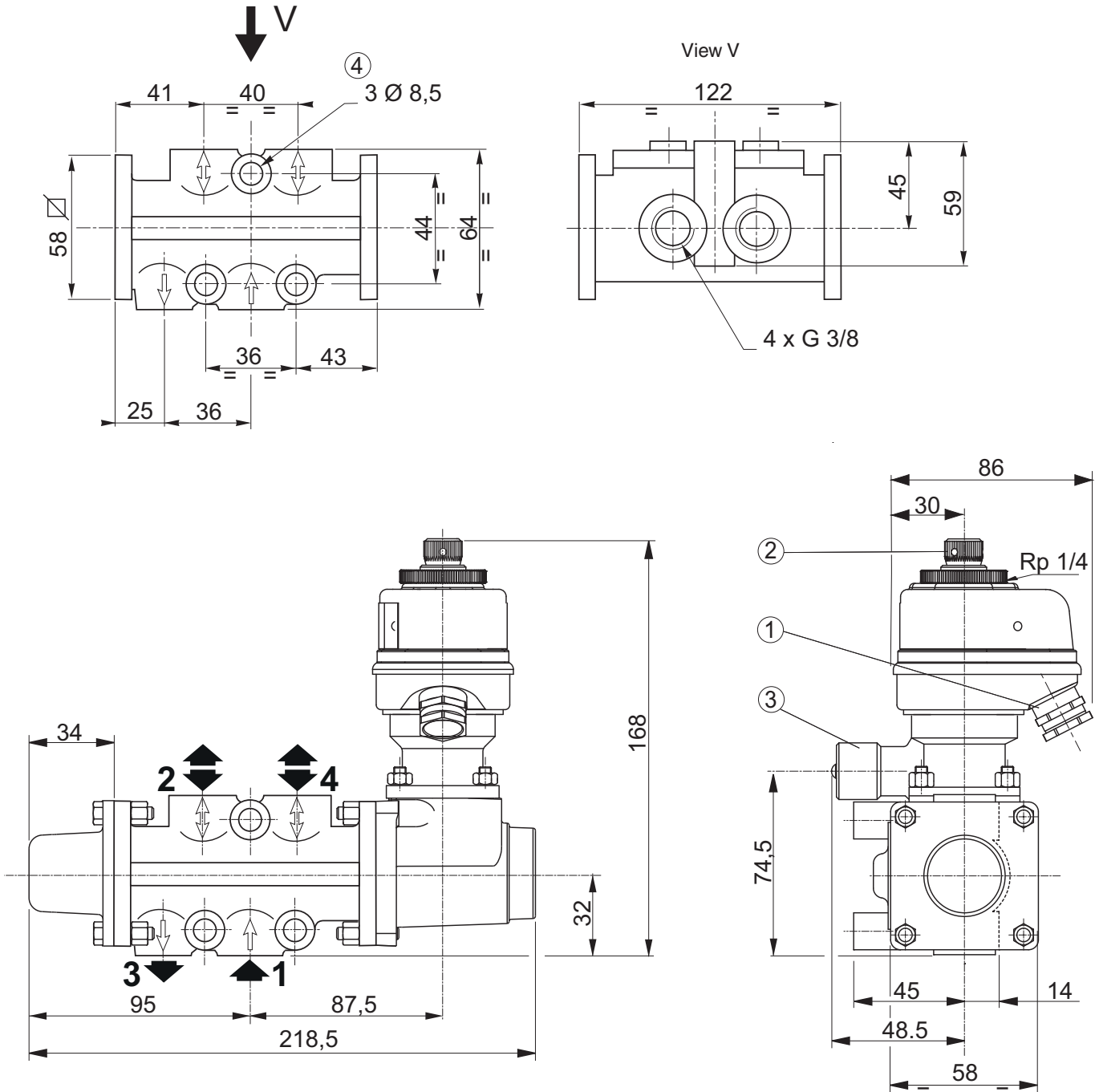
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)						response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)			(l/min)				min.	max.		
G	(mm)	1→2 1→4	1→2	2→3	1→2 1→4	1→2	2→3	500	3	10	23202007.48/DC 23202007.125/DC	MT402 D ⁽¹⁾ - K2
3/8	9	84,4	61,6	80,7	1400	1030	1345					

⁽¹⁾ D = Direct supply.

INSTALLATION

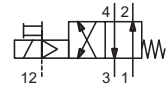
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
4

- ① Cable entry, CM10 (Ø 6,5-11 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

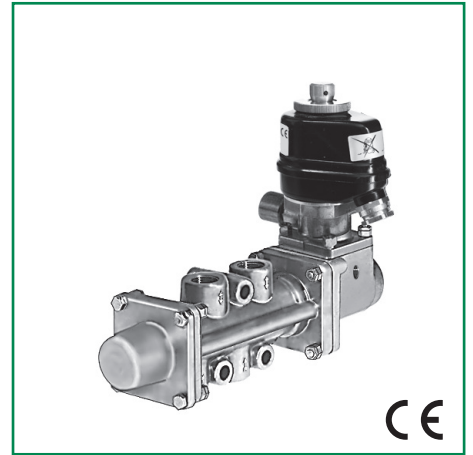
Test requirements: RCC-E + HM-63/7282-5

Test report: MT402 - HM-63/9667

Quality assurance: NF EN ISO 9001 v2008

RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5-11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

VAMAC® is a registered trademark of Dupont Performance Elastomers

SPECIFICATIONS

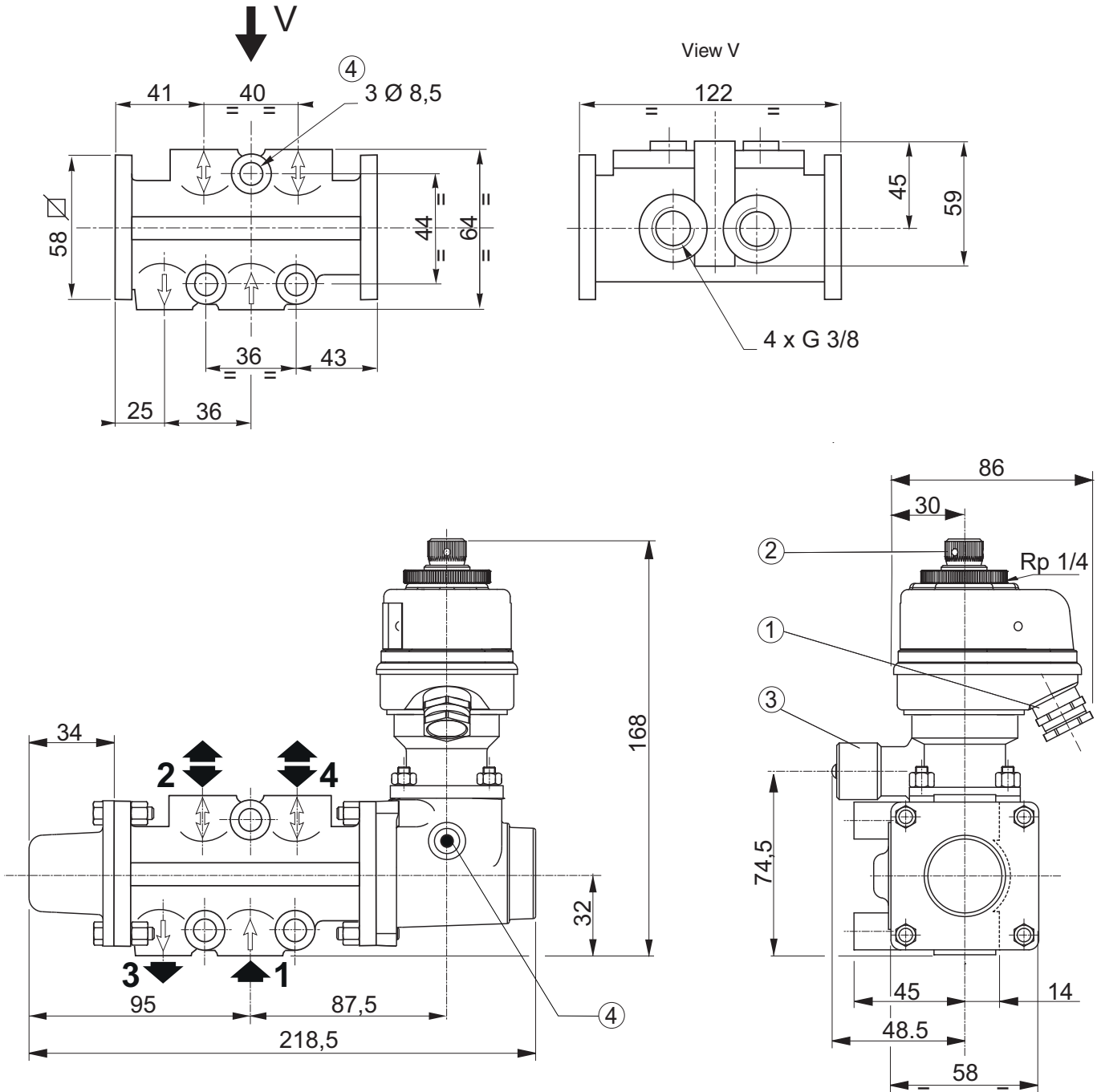
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)						response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)			(l/min)				min.	max.		
G	(mm)	1 → 2 1 → 4	1 → 2	2 → 3	1 → 2 1 → 4	1 → 2	2 → 3	500	3	10	23202004.48/DC 23202004.125/DC	MT402 S ⁽¹⁾ - K2
3/8	9	84,4	61,6	80,7	1400	1030	1345					

⁽¹⁾ External supply

INSTALLATION

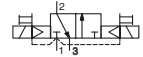
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
4

- ① Cable entry, CM10 (Ø 6,5-11 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ G 1/4 for external pilot supply
- ⑤ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

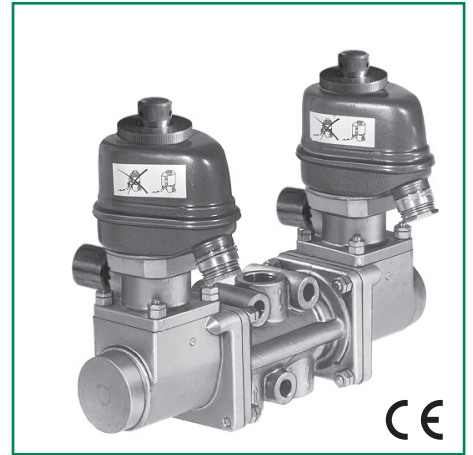
- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: M2T302 - HM-63/9667

Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5-11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

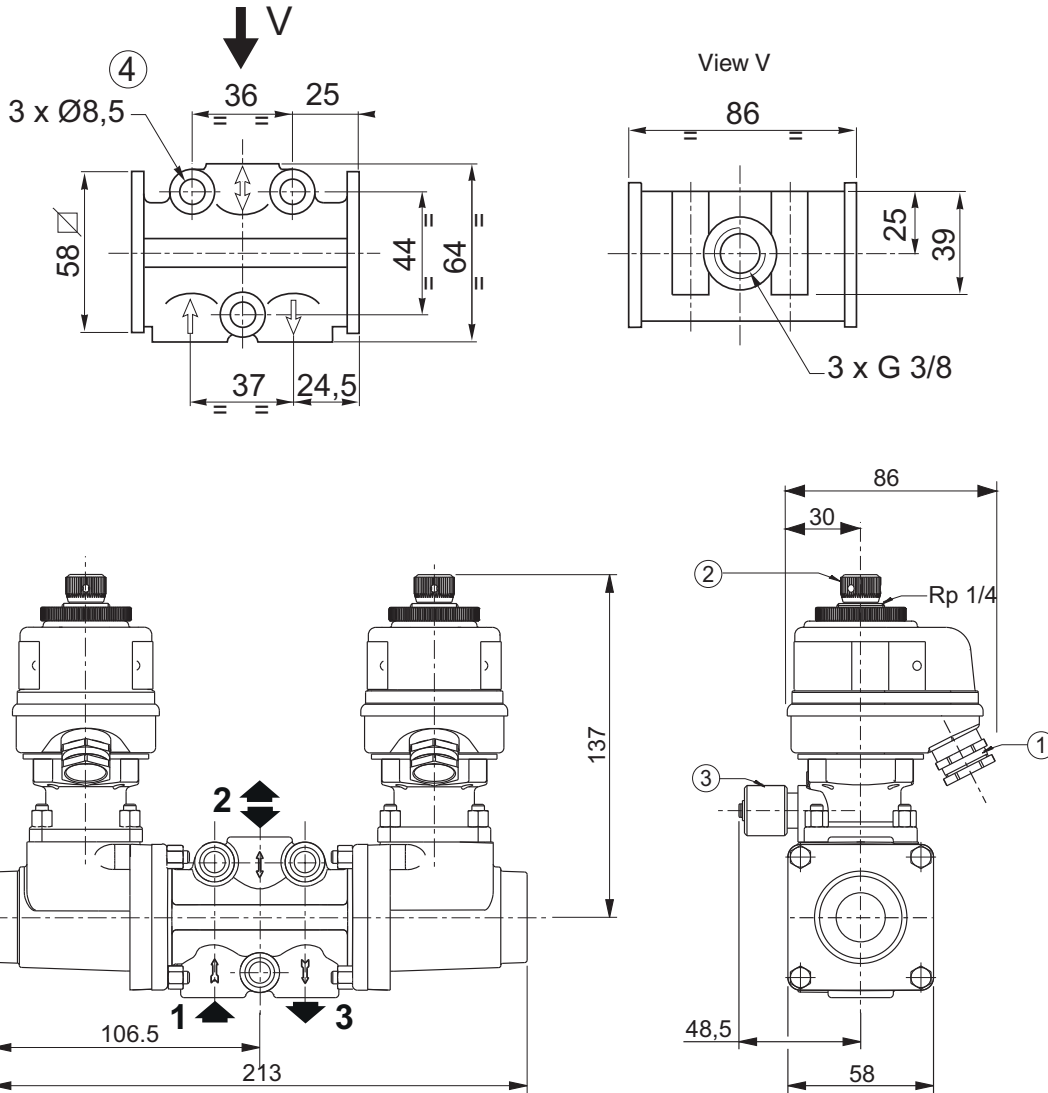
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.)	operating pressure differential (bar)		catalogue number	reference
		1 → 2		2 → 3			min.	max.		
G	(mm)	(m³/h)	(l/min)	(m³/h)	(l/min)	(ms)				
3/8	9	80,6	1345	76	1270	500	3	10	23102027.48/DC 23102027.125/DC	M2T302 D ⁽¹⁾ - K2

⁽¹⁾ D = Direct supply.

INSTALLATION

- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connections (Rp) have standard thread according to ISO 7/1. Pipe connections (G) have standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)

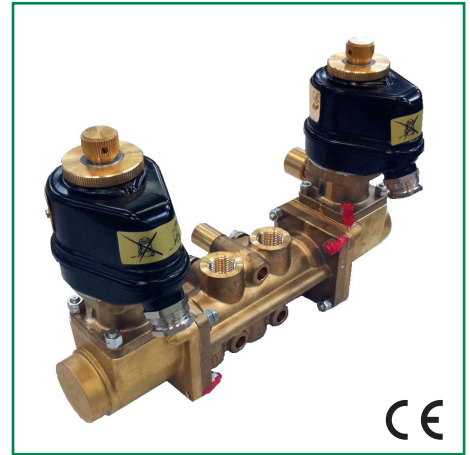


weight
4,3

- ① Cable entry, CM10 (Ø6,5-11 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 8,5 mm dia.

QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: M2T402 - HM-63/9667
 - Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000
- EMC: EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 40 years at 23°C
 - Functional +10°C to +50°C
 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5-11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

VAMAC® is a registered trademark of Dupont Performance Elastomers

SPECIFICATIONS

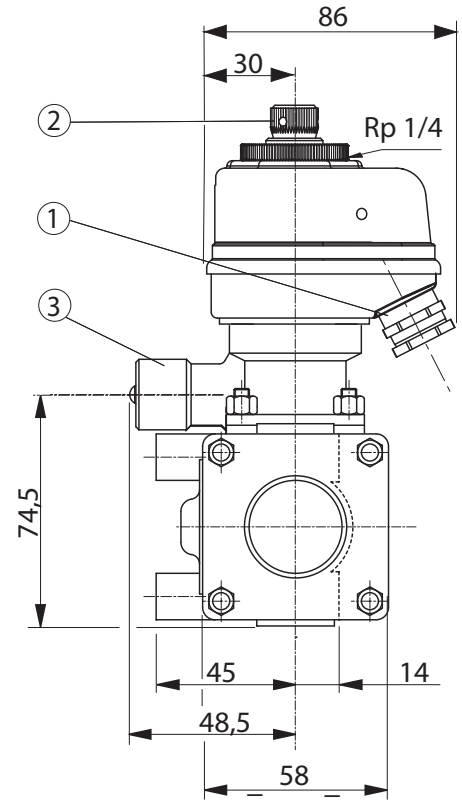
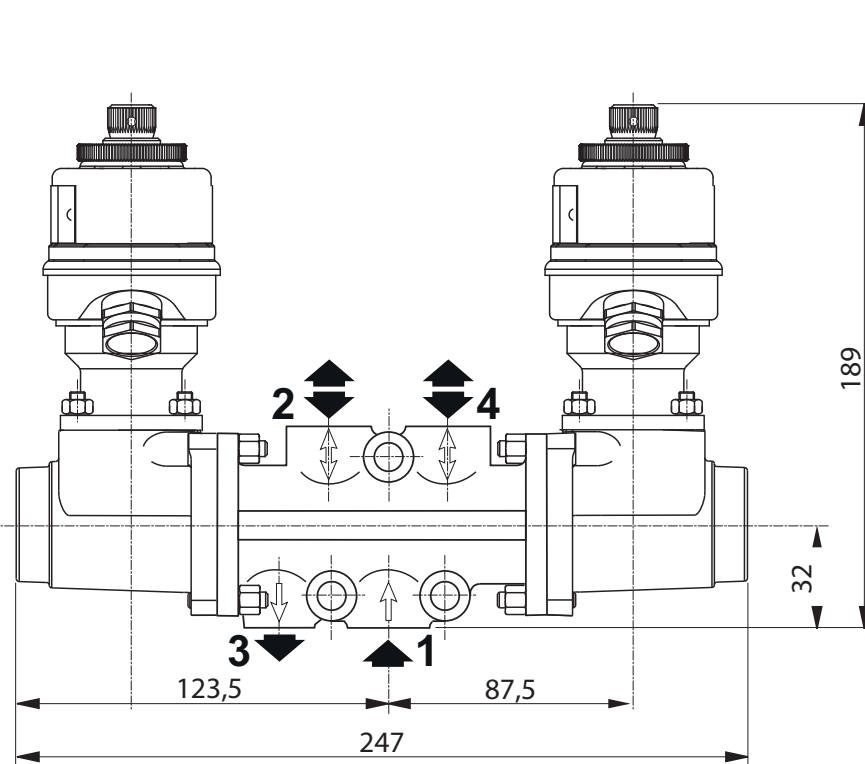
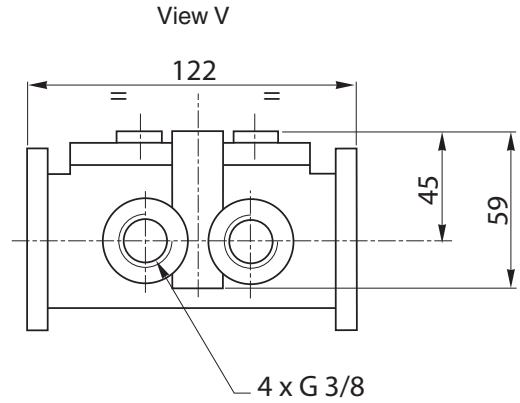
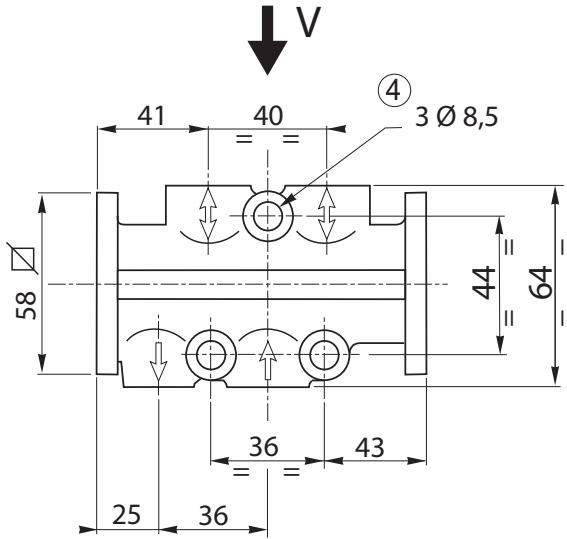
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)						response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)			(l/min)				min.	max.		
G	(mm)	1 → 2 1 → 4	1 → 2	2 → 3	1 → 2 1 → 4	1 → 2	2 → 3	500	3	10	23202003.48/DC 23202003.125/DC	M2T402 D ⁽¹⁾ - K2
3/8	9	84,4	61,6	80,7	1400	1030	1345					

⁽¹⁾ D = Direct supply.

INSTALLATION

- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connections (Rp) have standard thread according to ISO 7/1. Pipe connections (G) have standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)

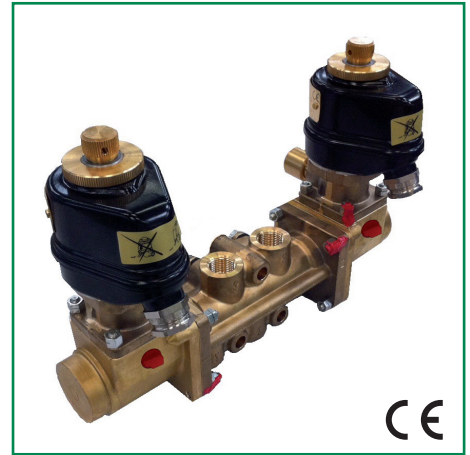


weight
5,5

- ① Cable entry, CM10 (Ø6,5-11 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 8,5 mm dia.

QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: M2T402 - HM-63/9667
 - Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000
- EMC: EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 40 years at 23°C
 - Functional +10°C to +50°C
 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5-11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

VAMAC® is a registered trademark of Dupont Performance Elastomers

SPECIFICATIONS

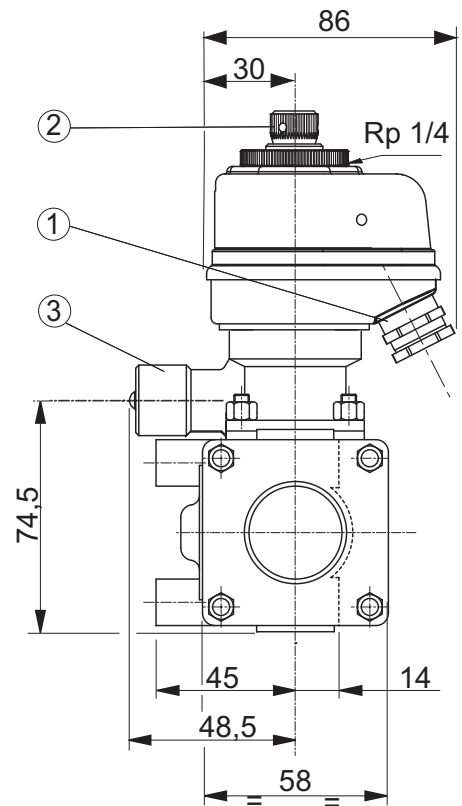
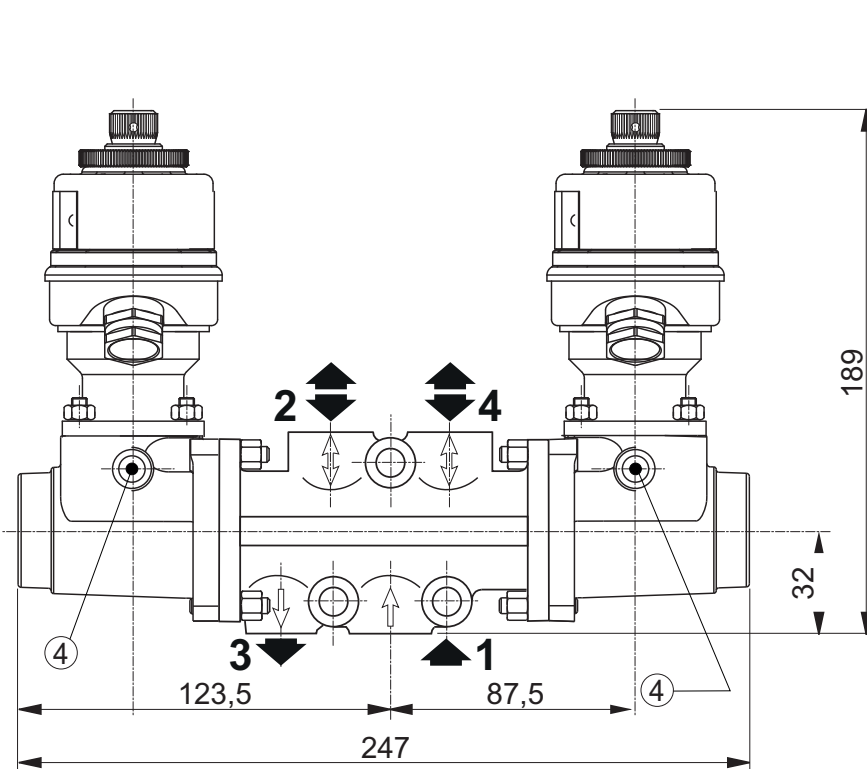
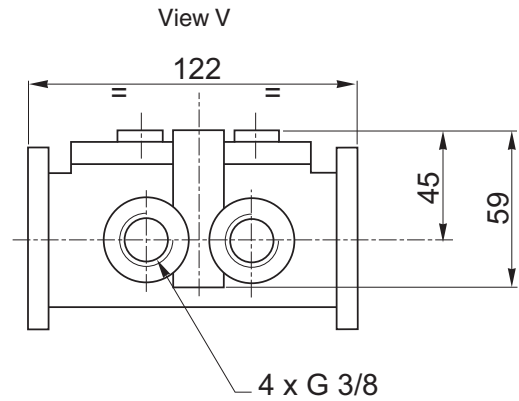
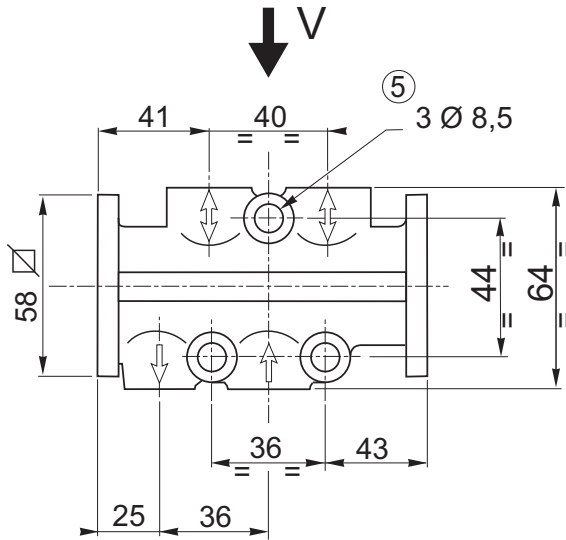
pipe size	orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar)						response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)			(l/min)				min.	max.		
G		1 → 2 1 → 4	1 → 2	2 → 3	1 → 2 1 → 4	1 → 2	2 → 3					
3/8	9	84,4	61,6	80,7	1400	1030	1345	500	3	10	23202036.48/DC 23202036.125/DC	M2T402 S ⁽¹⁾ - K2

⁽¹⁾ External supply

INSTALLATION

- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connections (Rp) have standard thread according to ISO 7/1. Pipe connections (G) have standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)



weight
5,5

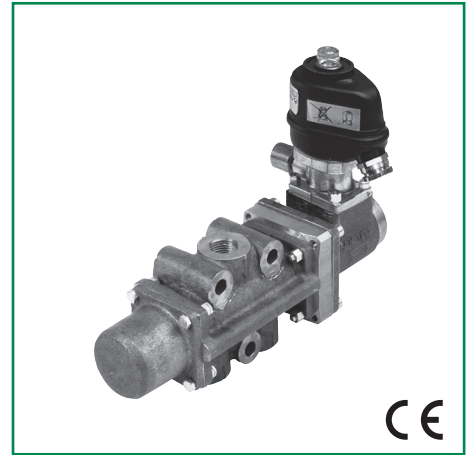
- ① Cable entry, CM10 (Ø6,5-11 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ G 1/4 for external pilot supply
- ⑤ 3 mounting holes 8,5 mm dia.

QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: MT303 - HM-63/9667
 Quality assurance: NF EN ISO 9001-2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil connection Screw terminals
 Coil protection Unidirectional diode
 Cable entry Cable gland, CM10 (cable Ø 6,5-11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

VAMAC® is a registered trademark of Dupont Performance Elastomers

SPECIFICATIONS

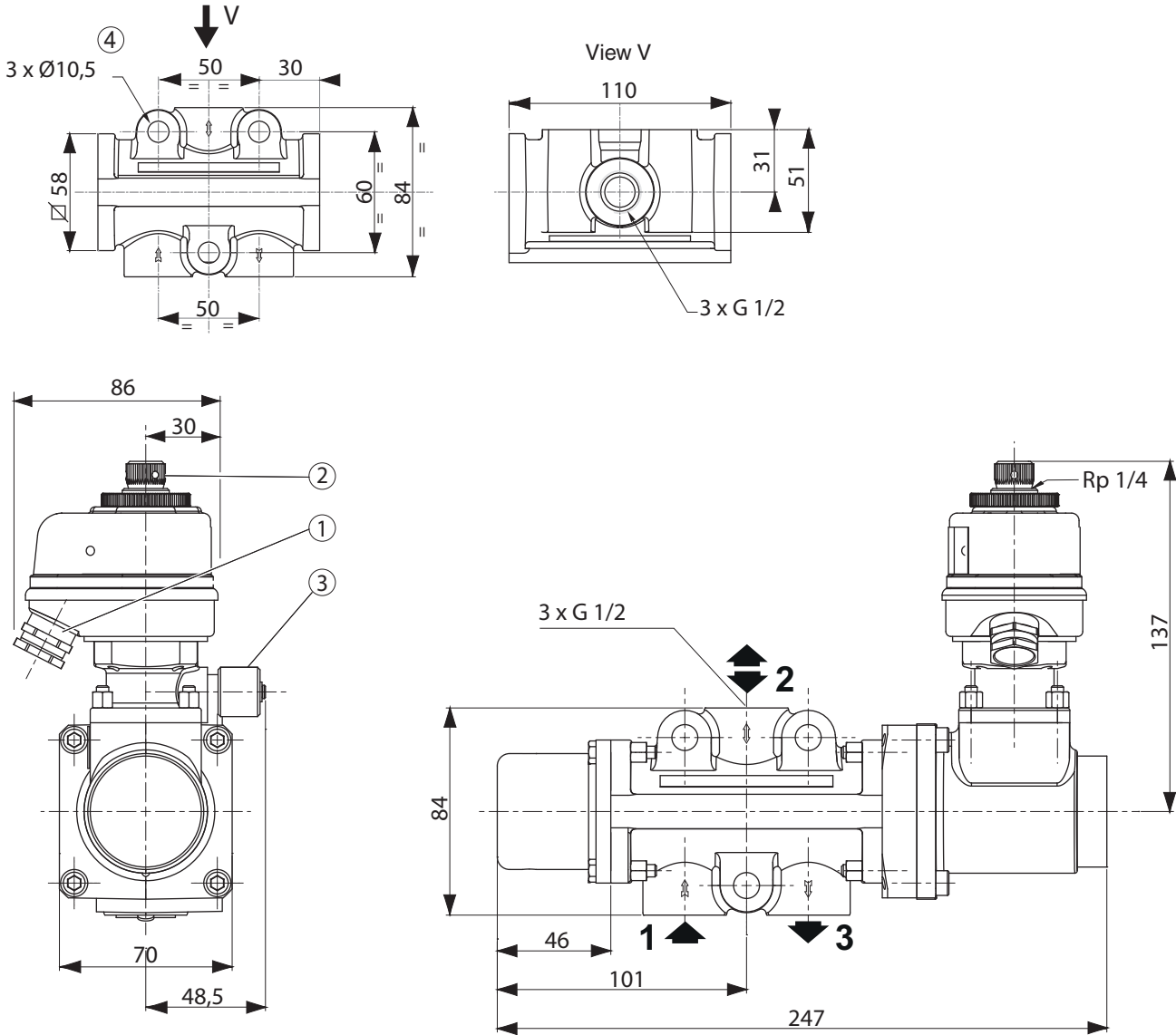
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.)	operating pressure differential (bar)		catalogue number	reference
		1 → 2		2 → 3			min.	max.		
G	(mm)	(m³/h)	(l/min)	(m³/h)	(l/min)	(ms)				
1/2	15	261	4360	172,7	2880	500	3	10	23102026.48/DC 23102026.125/DC	MT303 D ⁽¹⁾ - K2

⁽¹⁾ D = Direct supply.

INSTALLATION

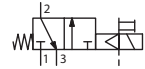
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



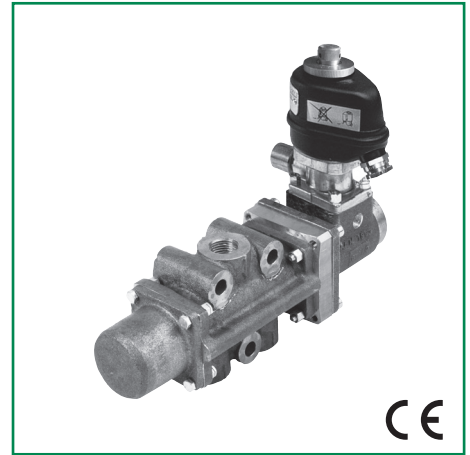
weight ⁽¹⁾
4

- ① Cable entry, CM10 (Ø 6,5-11 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 10,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: MT303 - HM-63/9667
 - Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000
- EMC:
 - EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 40 years at 23°C
 - Functional +10°C to +50°C
 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic:
 - Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 - RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5-11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

VAMAC® is a registered trademark of Dupont Performance Elastomers

SPECIFICATIONS

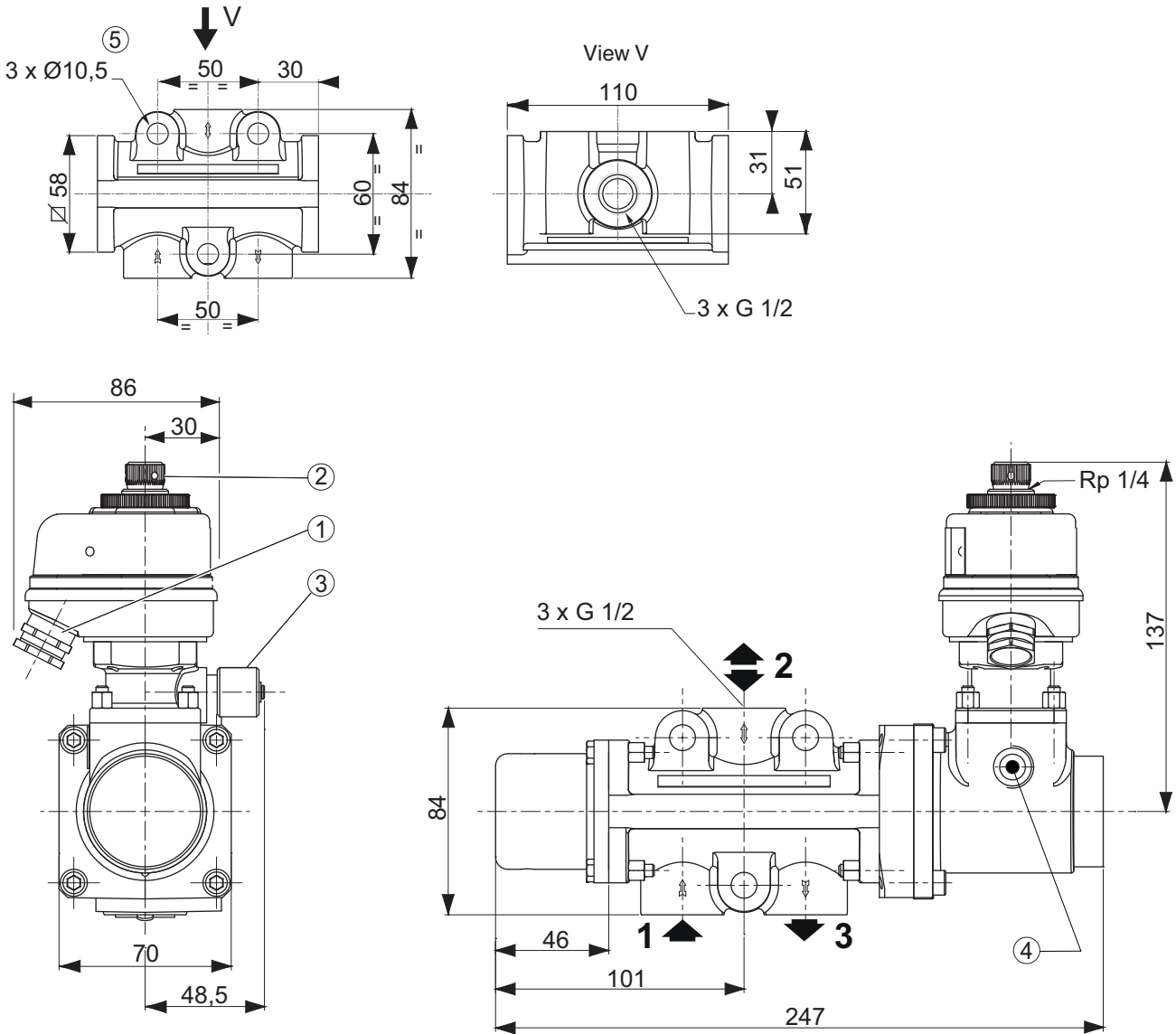
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		1 → 2		2 → 3			min.	max.		
G	(mm)	(m³/h)	(l/min)	(m³/h)	(l/min)					
1/2	15	261	4360	172,7	2880	500	3	10	23102041.48/DC 23102041.125/DC	MT303 S ⁽¹⁾ - K2

⁽¹⁾ S = external supply

INSTALLATION

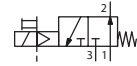
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



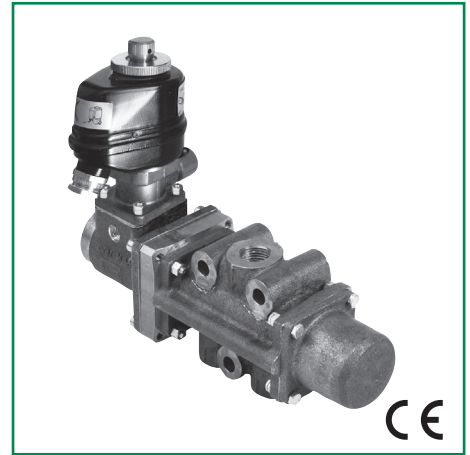
weight
4

- ① Cable entry, CM10 (Ø 6,5-11 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ G 1/4 for external pilot supply
- ⑤ 3 mounting holes 10,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: MT303 - HM-63/9667
 - Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000
- EMC:
 - EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 40 years at 23°C
 - Functional +10°C to +50°C
 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic:
 - Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 - RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5-11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

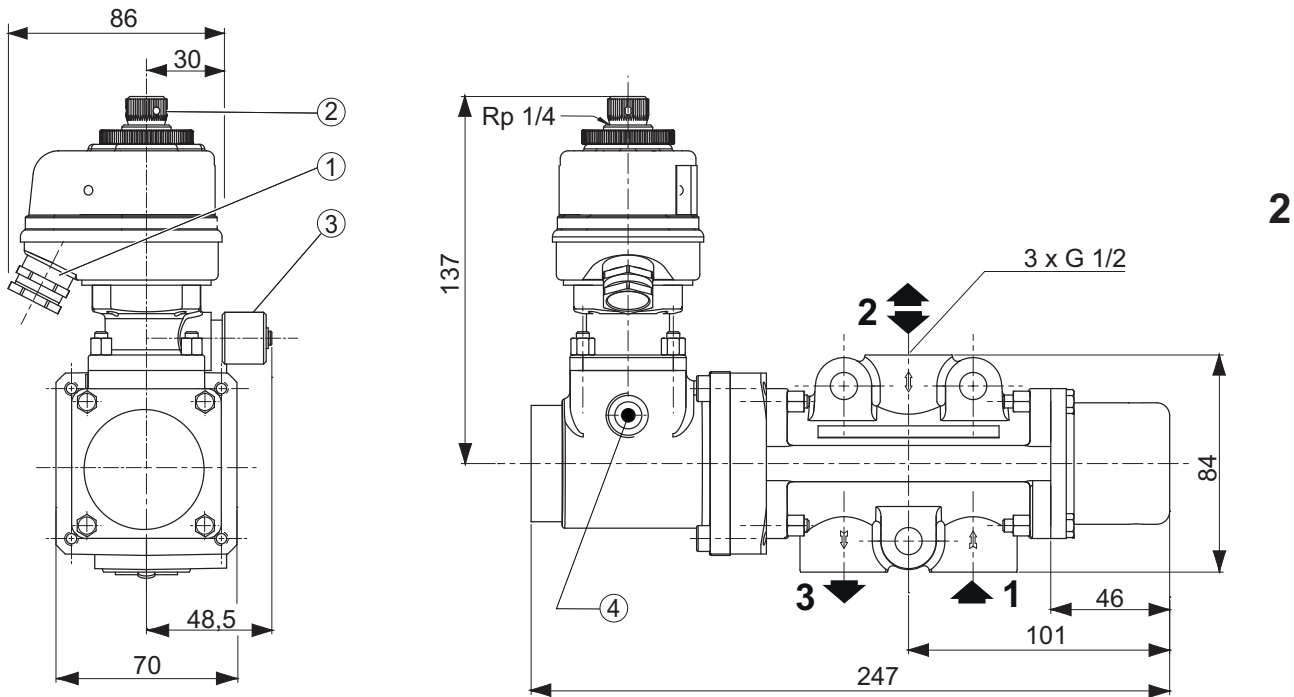
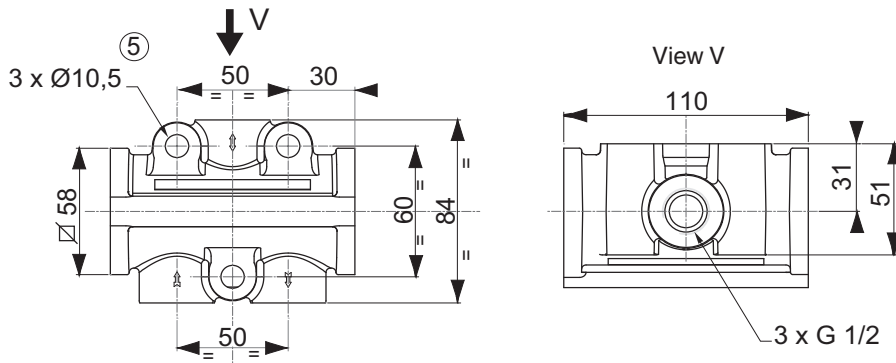
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		1 → 2		2 → 3			min.	max.		
G	(mm)	(m³/h)	(l/min)	(m³/h)	(l/min)	500	3	10	23102045.48/DC 23102045.125/DC	MT303 S ⁽¹⁾ - K2
1/2	15	261	4360	172,7	2880					

⁽¹⁾ S = external supply

INSTALLATION

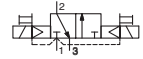
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
4

- ① Cable entry, CM10 (Ø 6,5-11 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ G 1/4 for external pilot supply
- ⑤ 3 mounting holes 10,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

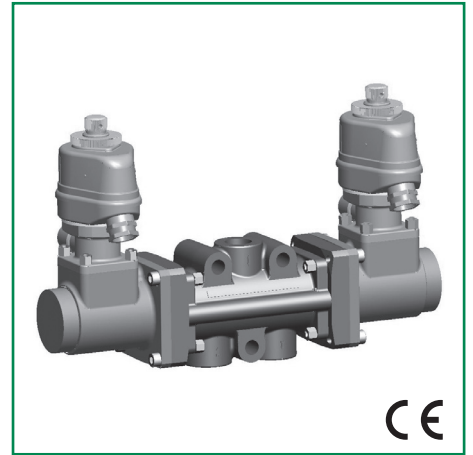
Test requirements: RCC-E + HM-63/7282-5

Test report: M2T303 - HM-63/9667

Quality assurance: NF EN ISO 9001 v2008

RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5-11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		1 → 2		2 → 3			min.	max.		
G	(mm)	(m³/h)	(l/min)	(m³/h)	(l/min)					
1/2	15	261	4360	172,7	2880	500	3	10	23102028.48/DC 23102028.125/DC	M2T303 D ⁽¹⁾ - K2

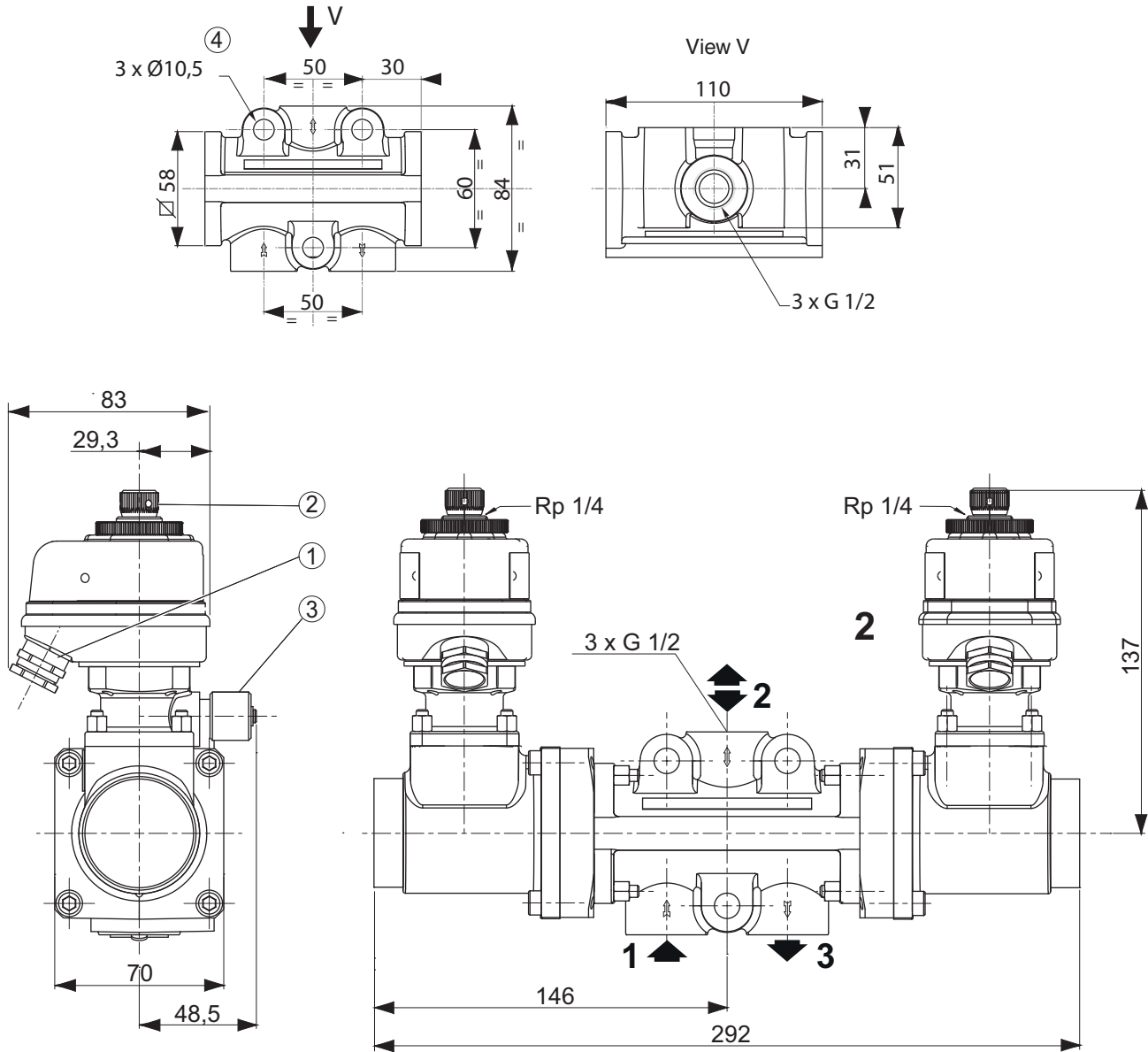
⁽¹⁾ D = Direct supply.

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INSTALLATION

- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connections (Rp) have standard thread according to ISO 7/1. Pipe connections (G) have standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)



weight
4,3

- ① Cable entry, CM10 (Ø6,5-11 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 10,5 mm dia.

QUALIFICATION DESCRIPTION

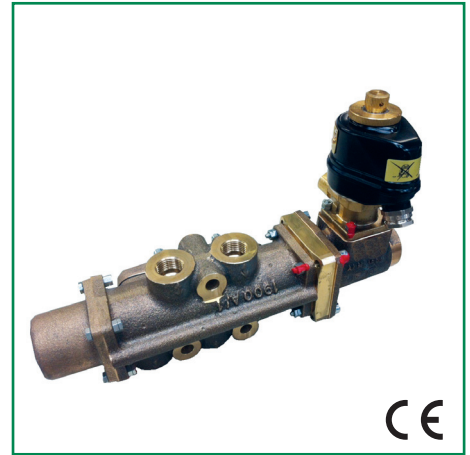
- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: MT403 - HM-63/9667

Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5-11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)						response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)			(l/min)				min.	max.		
G	(mm)	1→2 1→4	4→3	2→3	1→2 1→4	4→3	2→3	(ms)			23202022.48/DC 23202022.125/DC	MT403 D ⁽¹⁾ - K2
1/2	15	202	185,5	202	3360	3040	3360	500	3	10		

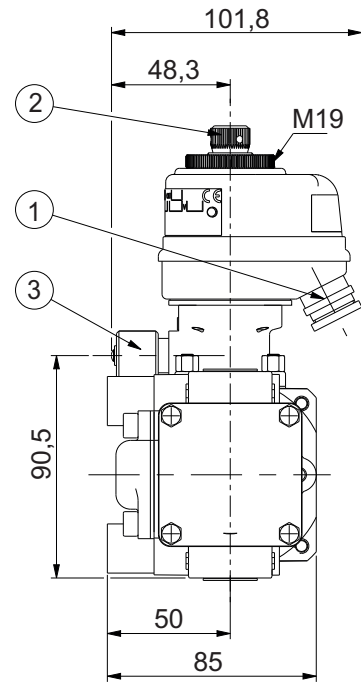
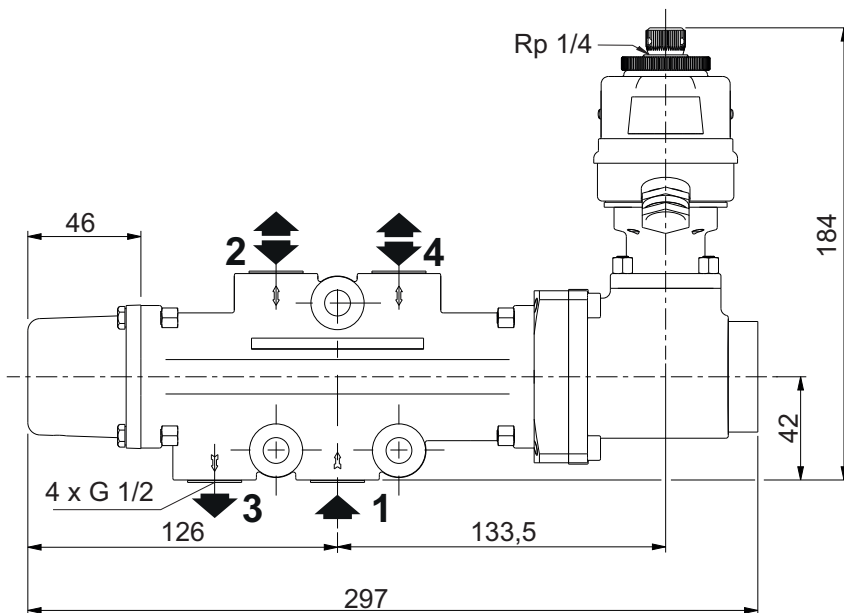
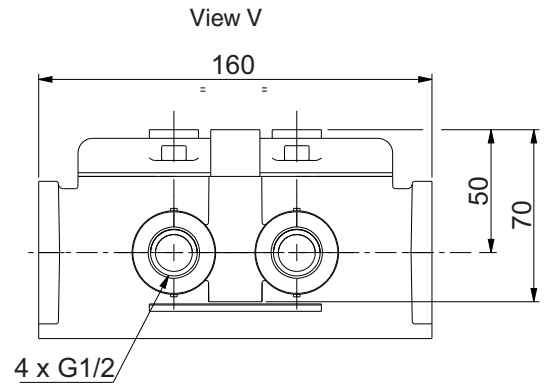
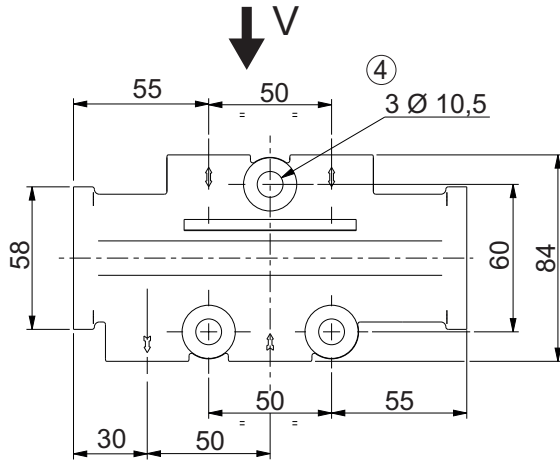
⁽¹⁾ D = Direct supply.

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INSTALLATION

- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
5,9

- ① Cable entry, CM10 (Ø 6,5-11 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 10,5 mm dia.

QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: MT403 - HM-63/9667

Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5-11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

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
SPECIFICATIONS

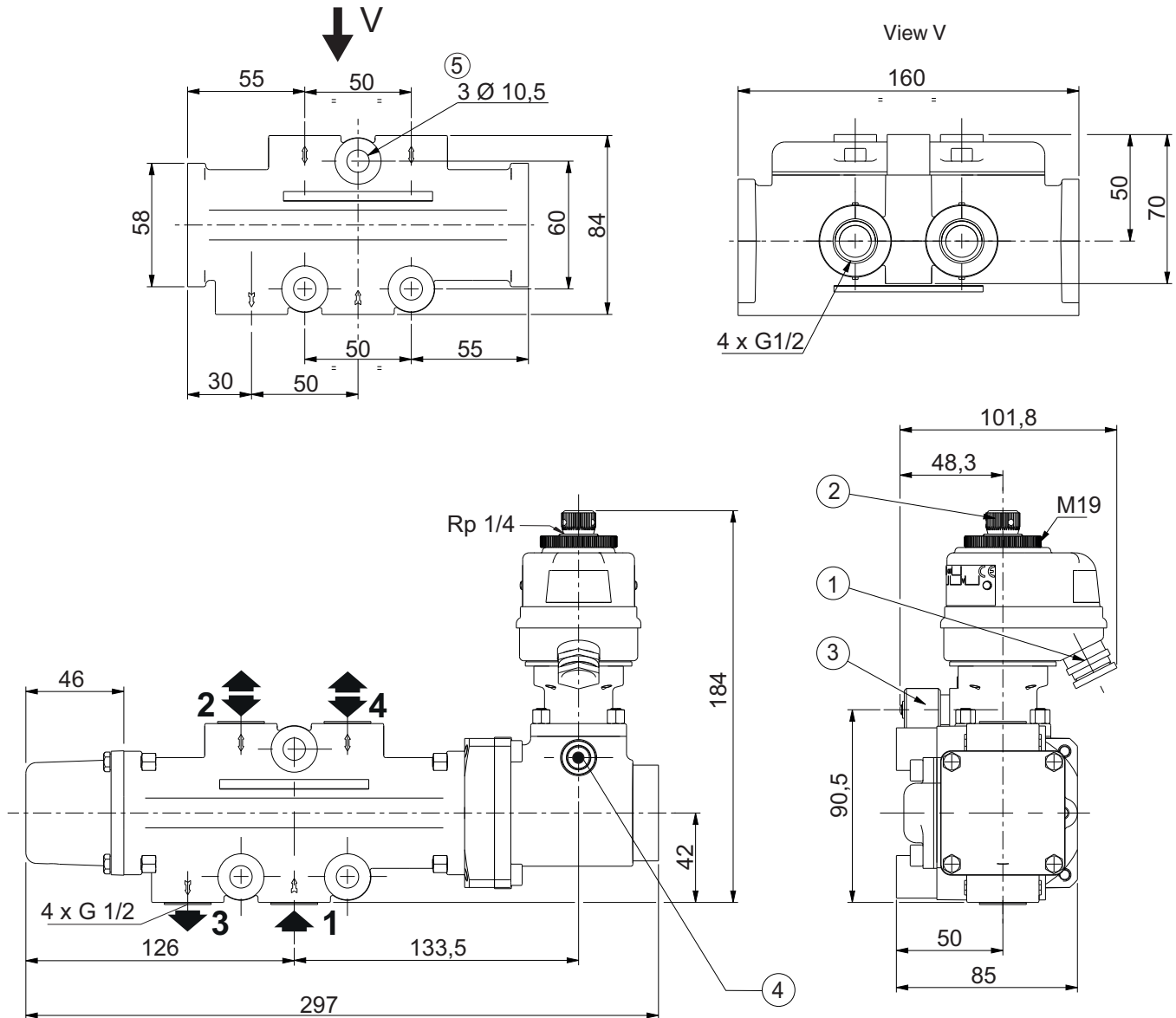
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)						response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)			(l/min)				min.	max.		
G	(mm)	1 → 2 1 → 4	4 → 3	2 → 3	1 → 2 1 → 4	4 → 3	2 → 3					
1/2	15	202	185,5	202	3360	3040	3360	500	3	10	23202024.48/DC 23202024.125/DC	MT403 S ⁽¹⁾ - K2

⁽¹⁾ External supply

INSTALLATION

- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg) 



weight
5,9

- ① Cable entry, CM10 (Ø 6,5-11 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ G 1/4 for external pilot supply
- ⑤ 3 mounting holes 10,5 mm dia.

QUALIFICATION DESCRIPTION

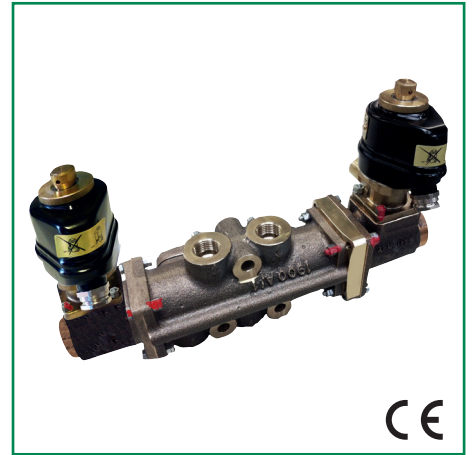
- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: M2T403 - HM-63/9667

Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM10 (cable Ø 6,5-11 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS

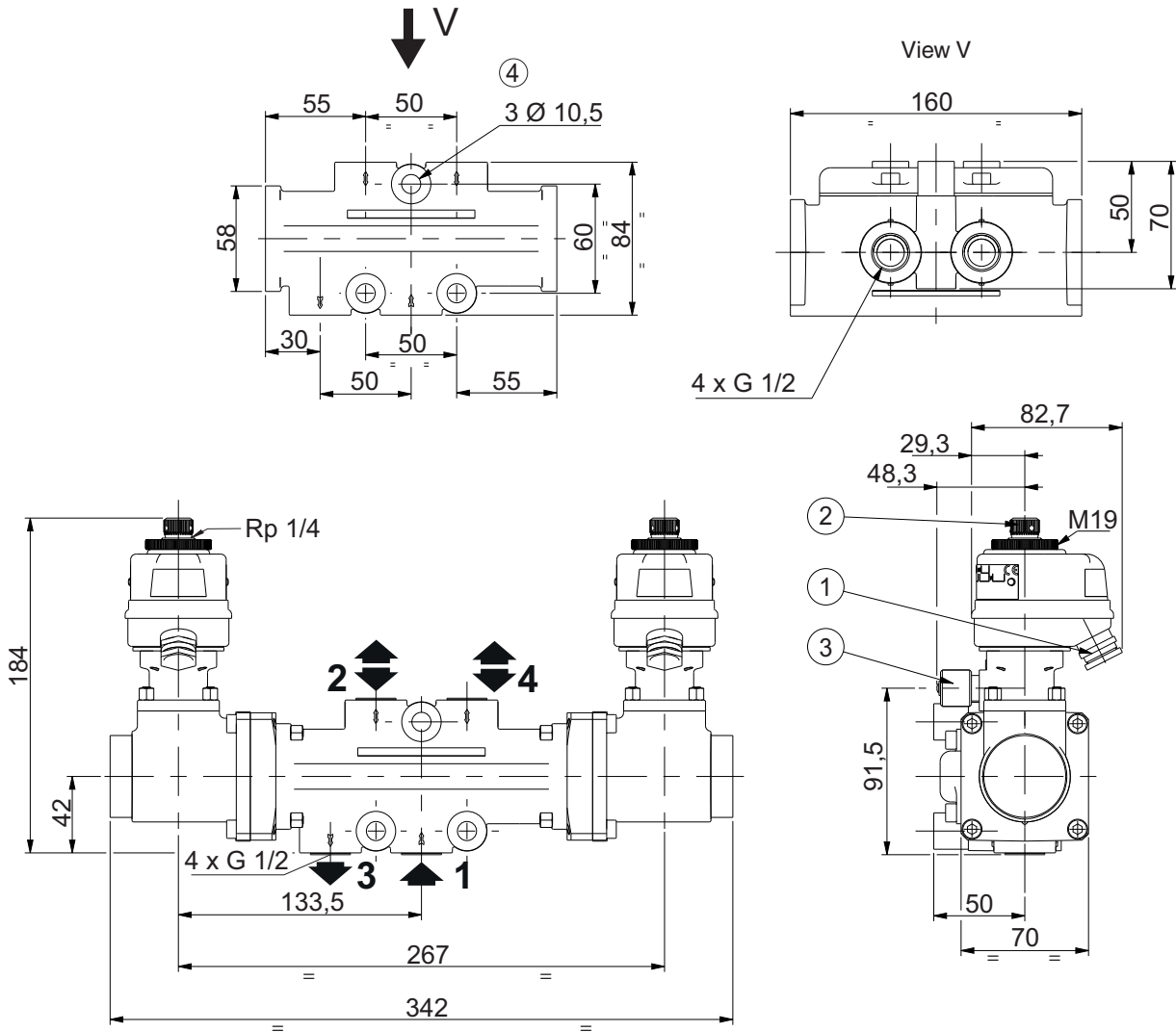
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)						response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)			(l/min)				min.	max.		
G	(mm)	1 → 2 1 → 4	4 → 3	2 → 3	1 → 2 1 → 4	4 → 3	2 → 3					
1/2	15	202	185,5	202	3360	3040	3360	500	3	10	23202034.48/DC 23202034.125/DC	M2T403 D ⁽¹⁾ - K2

⁽¹⁾ D = Direct supply.

INSTALLATION

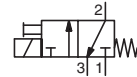
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connections (Rp) have standard thread according to ISO 7/1. Pipe connections (G) have standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg) 



weight
7,4

- ① Cable entry, CM10 (Ø6,5-11 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 10,5 mm dia.

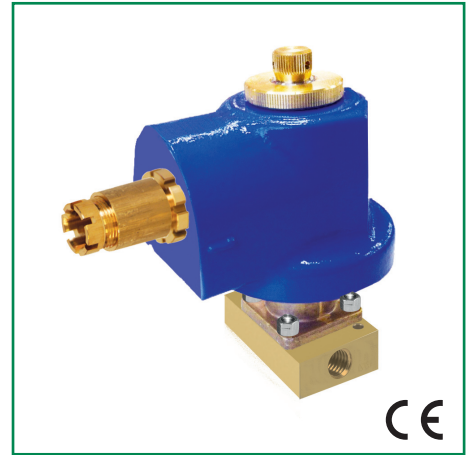


QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: MB301 - HM-63/9667 + ASCO argut file 503316
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, blue decontaminable paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil connection Screw terminals
 Coil protection Unidirectional diode
 Cable entry Cable gland, BV2 (cable Ø 8,5 to 14,5 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP65	+5 to +50

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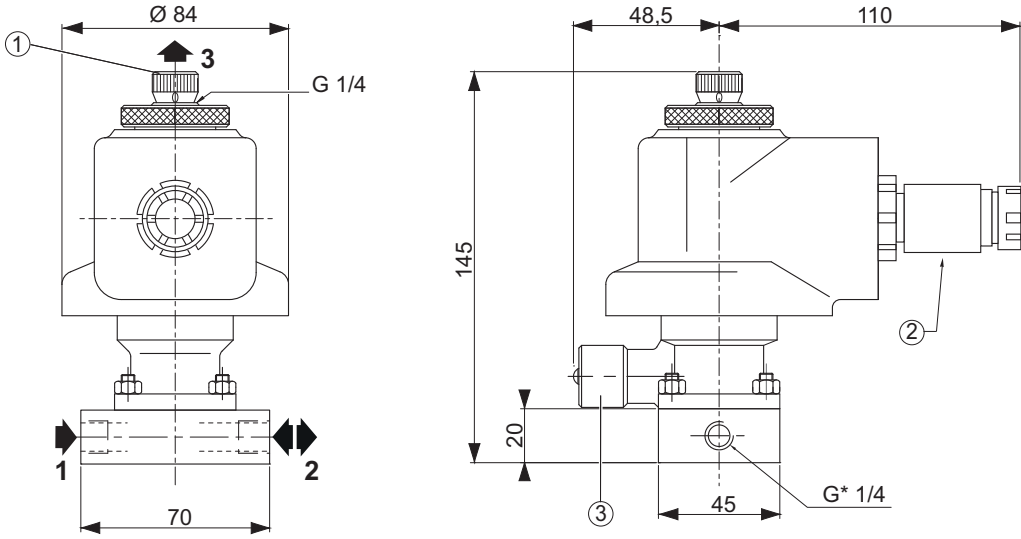
SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G*	(mm)			(ms)				
1/4	3	16	260	250	0	10	12101357.48/DC	MB301 O 3 - K2

INSTALLATION

- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- 1/4 pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1. Pipe connection (G) is standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)



weight
3

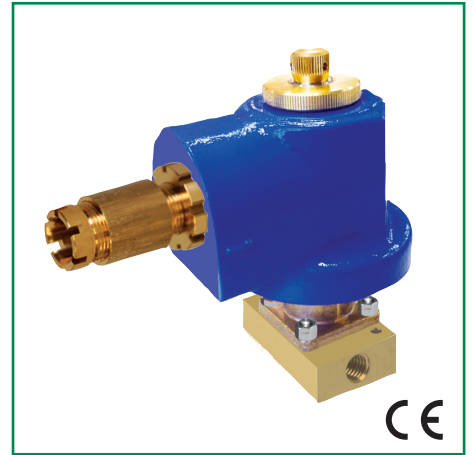
- ① 3/2 NC: exhaust protector
- ② Cable gland, BV2 (Ø 8,5 to 14,5 mm)
- ③ Manual operator location

QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: MB301 - HM-63/9667 + ASCO argut file 503316
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, blue decontaminable paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil connection Screw terminals
 Coil protection Unidirectional diode
 Cable entry Cable gland, BV4 (cable Ø 16,5 to 22,6 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50

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SPECIFICATIONS

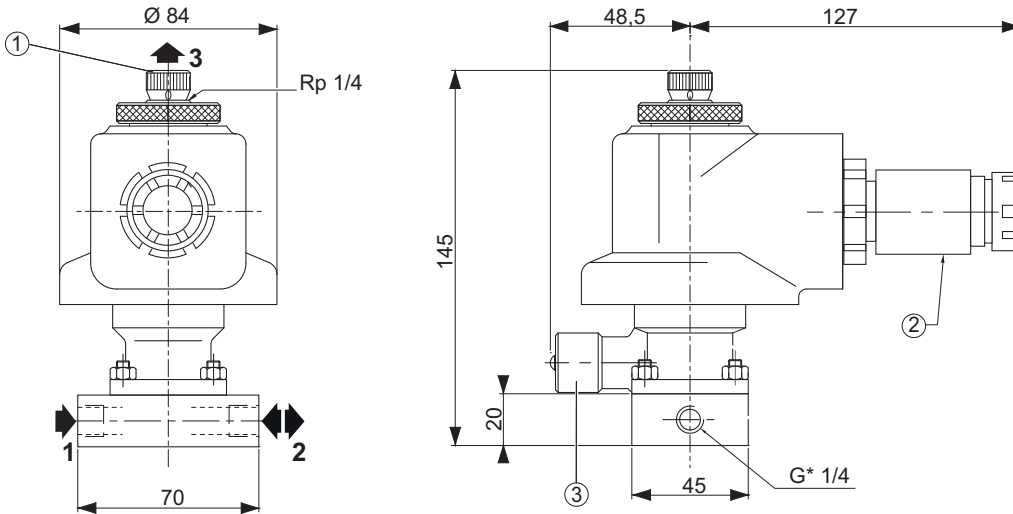
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G*	(mm)			(ms)				
1/4	3	16	260	250	0	10	12101238.48/DC	MB301 O 3 - K2

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INSTALLATION

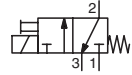
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- 1/4 pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1. Pipe connection (G) is standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)



weight
3

- ① 3/2 NC: exhaust protector
- ② Cable gland, BV4 (Ø 16,5 to 22,6 mm)
- ③ Manual operator location



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: V301 - HM-63/9699 + ASCO argut file 503316
 - Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000
- EMC: EMC test specification in accordance with RCC-E 2005:
 - Surge immunity test (according to EN61000-4-5):
1kV Phase to Phase - 2kV Phase to Ground
 - Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C without supply voltage
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, blue decontaminable paint
Threaded base, cover & screw Steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, BV2 (cable Ø 8,5 to 14,5 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	32	36	H	IP65	+5 to +50

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SPECIFICATIONS

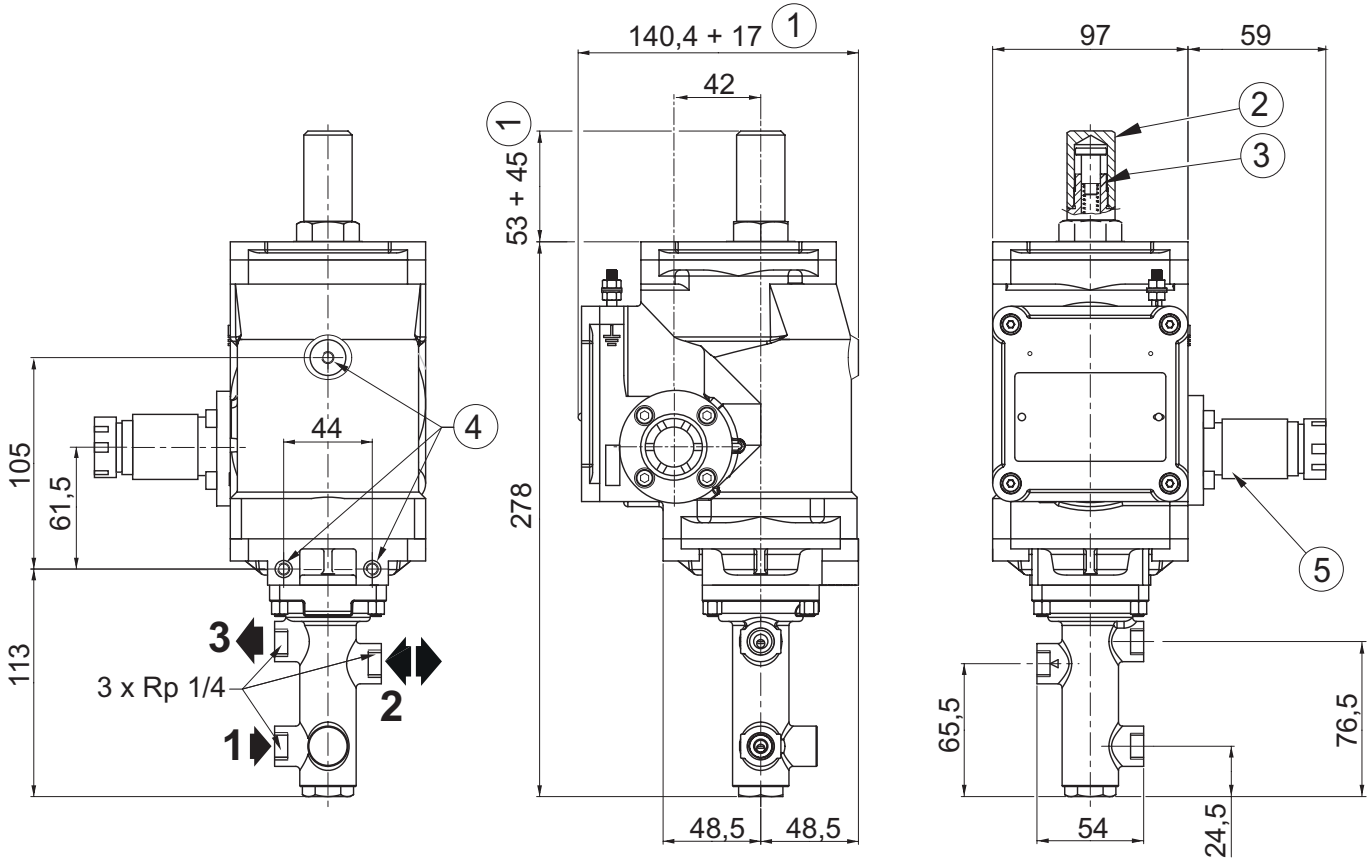
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)			(ms)				
1/4	5	27,4	450	500	0	10	X131509998001H9	V301 O 5 - K2

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INSTALLATION

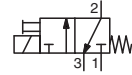
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
7,9

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ Cable gland, BV2 (Ø 8,5 to 14,5 mm)



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: V301 - HM-63/9699 + ASCO argut file 503316
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, blue decontaminable paint
 Threaded base, cover & screw Steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil connection Screw terminals
 Coil protection Unidirectional diode
 Cable entry Cable gland, BV4 (cable Ø 16,5 to 22,6 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	32	36	H	IP65	+5 to +50

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SPECIFICATIONS

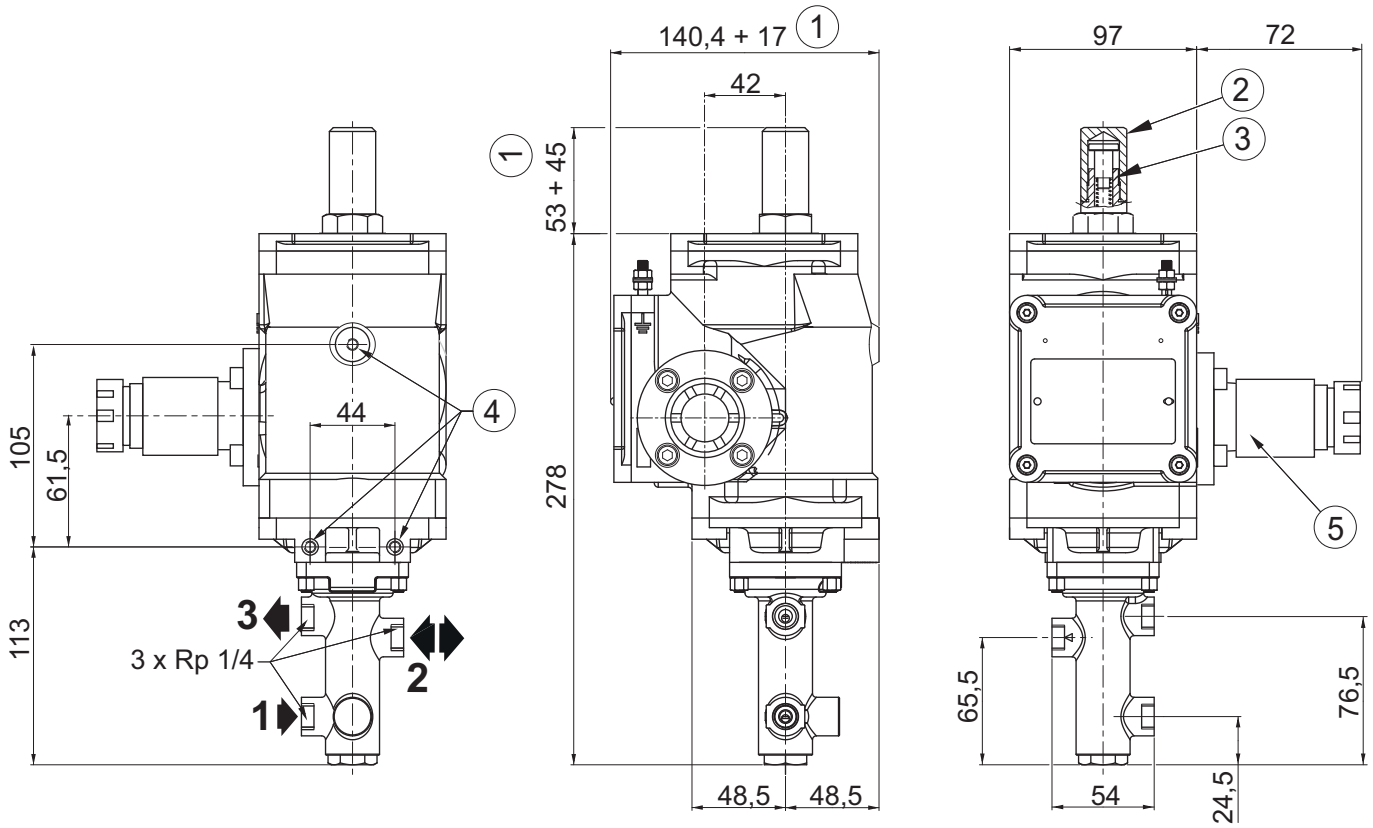
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)			(ms)				
1/4	5	27,4	450	500	0	10	13102151.48/DC	V301 O 5 - K2

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INSTALLATION

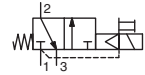
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



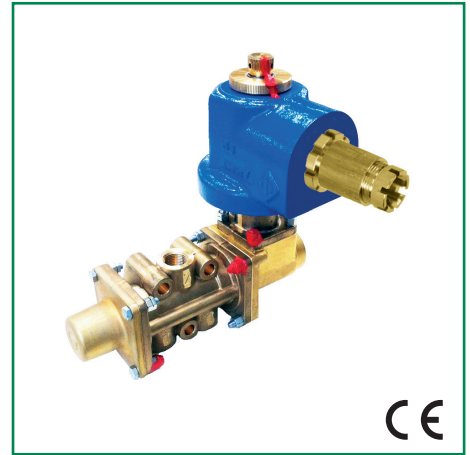
type	weight
01	7,9

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ Cable gland, BV4 (Ø 16,5 to 22,6 mm)



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: MT302 HM-63/9667 + ASCO argut file 503316
 - Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000
- EMC: EMC test specification in accordance with RCC-E 2005:
 - Surge immunity test (according to EN61000-4-5):
1kV Phase to Phase - 2kV Phase to Ground
 - Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C without supply voltage
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, blue decontaminable paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, BV2 (cable Ø 8,5 to 14,5 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
	48 VDC	11			

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SPECIFICATIONS

pipe size	orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference	orientation type
		1 → 2		2 → 3			min.	max.			
		(m³/h)	(l/min)	(m³/h)	(l/min)						
G											
3/8	9	80,6	1345	76	1270	500	3	10	X231509984001H9 23100528.48/DC	MT302 D ⁽¹⁾ - K2	01 02

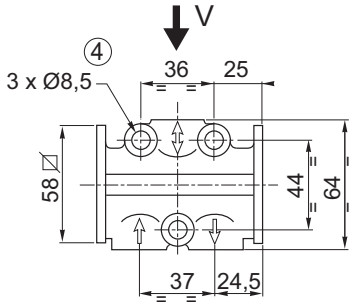
(1) D = Direct supply.

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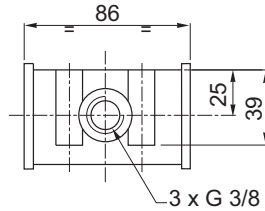
INSTALLATION

- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1

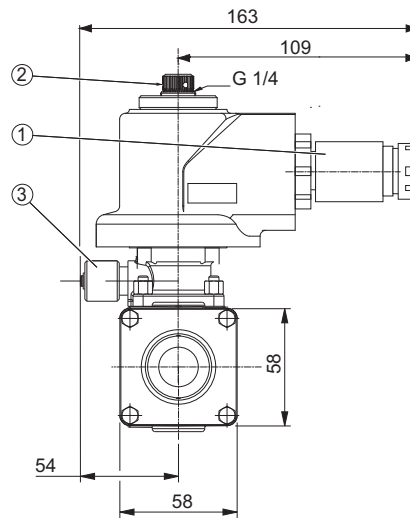
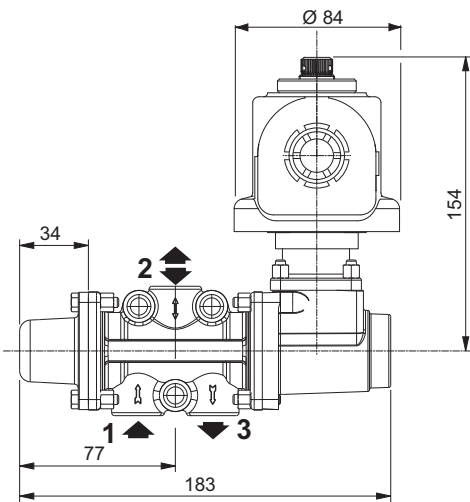
DIMENSIONS (mm), WEIGHT (kg)



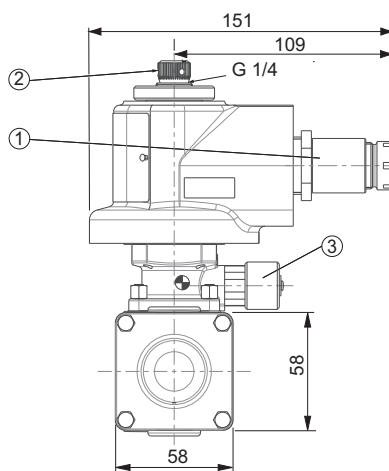
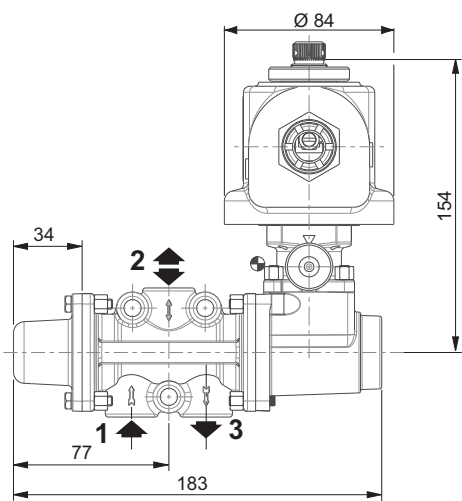
View V



TYPE 01



TYPE 02

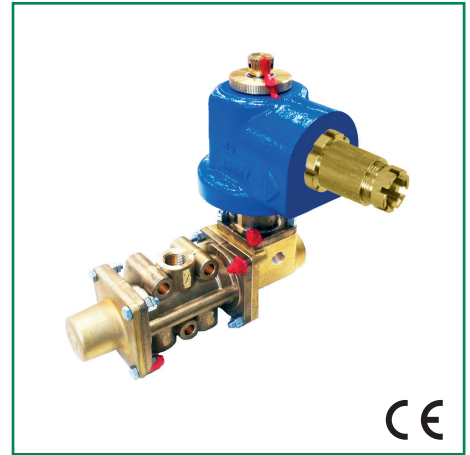


weight
5

- ① Cable gland, BV2 (Ø 8,5 to 14,5 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 8,5 mm dia.

QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: MT302 HM-63/9667 + ASCO argut file 503316
 - Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000
- EMC: EMC test specification in accordance with RCC-E 2005:
 - Surge immunity test (according to EN61000-4-5):
1kV Phase to Phase - 2kV Phase to Ground
 - Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C without supply voltage
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, blue decontaminable paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, BV2 (cable Ø 8,5 to 14,5 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
	48 VDC	11			

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SPECIFICATIONS

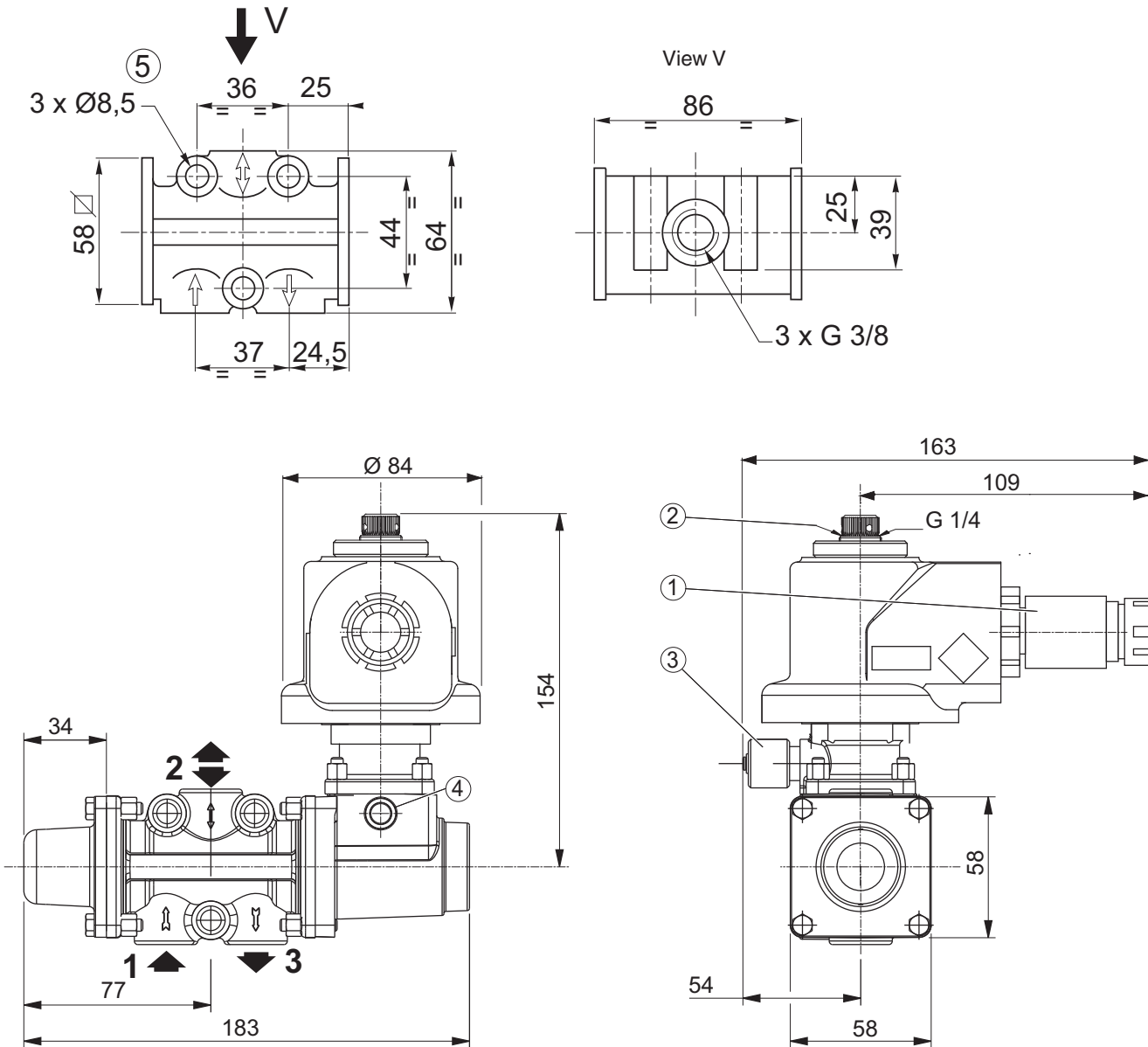
pipe size	orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		1 → 2		2 → 3			min.	max.		
		(m³/h)	(l/min)	(m³/h)	(l/min)					
G	9	80,6	1345	76	1270	500	3	10	X231518101001H9	MT302 S ⁽¹⁾ - K2

⁽¹⁾ External supply

INSTALLATION

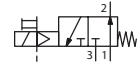
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1
- Spare parts kits available: Contact us

DIMENSIONS (mm), WEIGHT (kg)



weight
4,6

- ① Cable gland, BV2 (Ø 8,5 to 14,5 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ G 1/4 for external pilot supply
- ⑤ 3 mounting holes 8,5 mm dia.

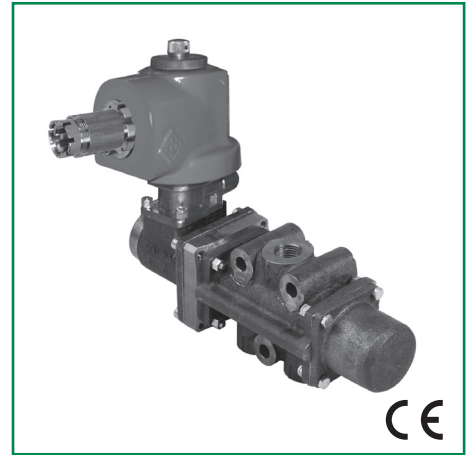


QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: MT303 HM-63/9667 + ASCO argut file 503316
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Radiation: Aging 250 Kgy at 70°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, blue decontaminable paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil connection Screw terminals
 Coil protection Unidirectional diode
 Cable entry Cable gland, BV2 (cable Ø 8,5 to 14,5 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP65	+5 to +50

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SPECIFICATIONS

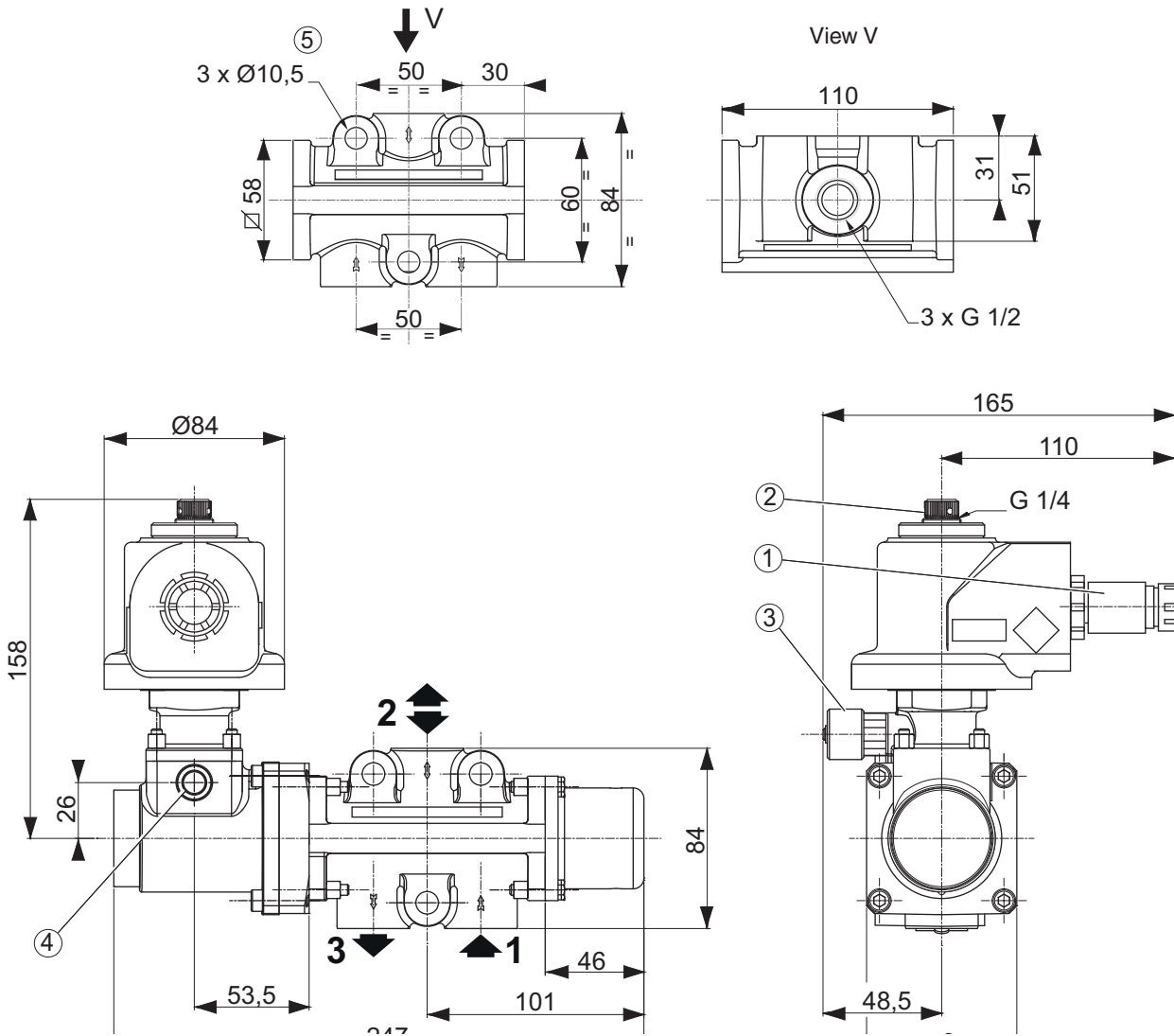
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.)	operating pressure differential (bar)		catalogue number	reference
		1 → 2		2 → 3			min.	max.		
G	(mm)	(m³/h)	(l/min)	(m³/h)	(l/min)	(ms)				
1/2	15	261	4360	172,7	2880	500	3	10	23102059.48/DC	MT303 S ⁽¹⁾ - K2

⁽¹⁾ External supply

INSTALLATION

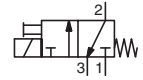
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)



weight
6,3

- ① Cable gland, BV2 (Ø 8,5 to 14,5 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ G 1/4 for external pilot supply
- ⑤ 3 mounting holes 10,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: MB301 - HM-63/9667- ENSEIM 11042
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings			coil insulation class	type of protection	temperature range (C°)
	inrush (VA)	holding (VA) (W)				
230 V/50	32	20	11	H	IP54	+5 to +50

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SPECIFICATIONS

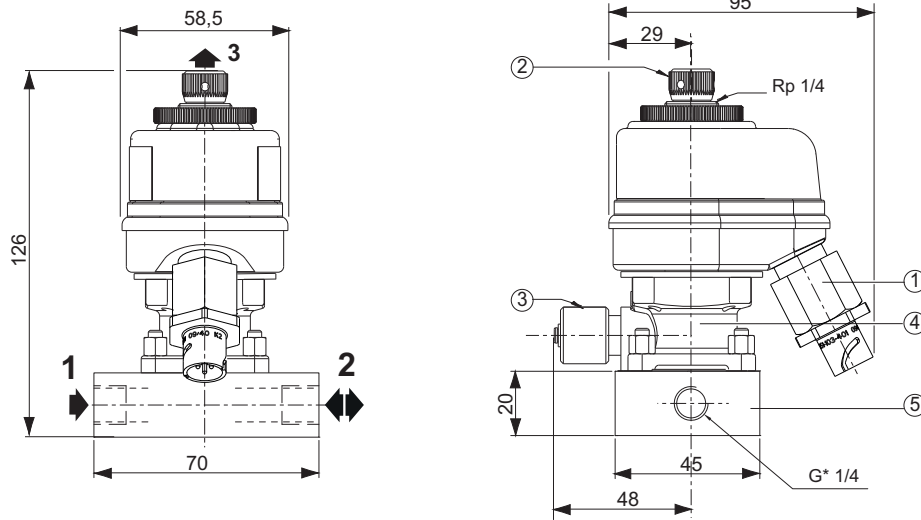
pipe size	orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G* ⁽¹⁾ 1/4	3	16	260	250	0	10	12102108.230/50	MB301 O 3 - K3

⁽¹⁾ Port 3: G 1/4

INSTALLATION

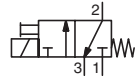
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- 1/4 pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1. Pipe connection (Rp) is standard thread according to ISO 7/1
- Spare parts kits available: Contact us

DIMENSIONS (mm), WEIGHT (kg)



weight
1,75

- ① QDC: Quick Disconnect Connector, NU25
- ② 3/2 NC: exhaust protector
- ③ Manual operator location



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: MB301 - HM-63/9667- ENSEIM 11042
 - Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000
- EMC: EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
 - Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 40 years at 23°C
 - Functional +10°C to +50°C
 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings			coil insulation class	type of protection	temperature range (C°)
	inrush (VA)	holding (VA)	(W)			
230 V/50	32	20	11	H	IP54	+5 to +50

VAMAC® is a registered trademark of Dupont Performance Elastomers

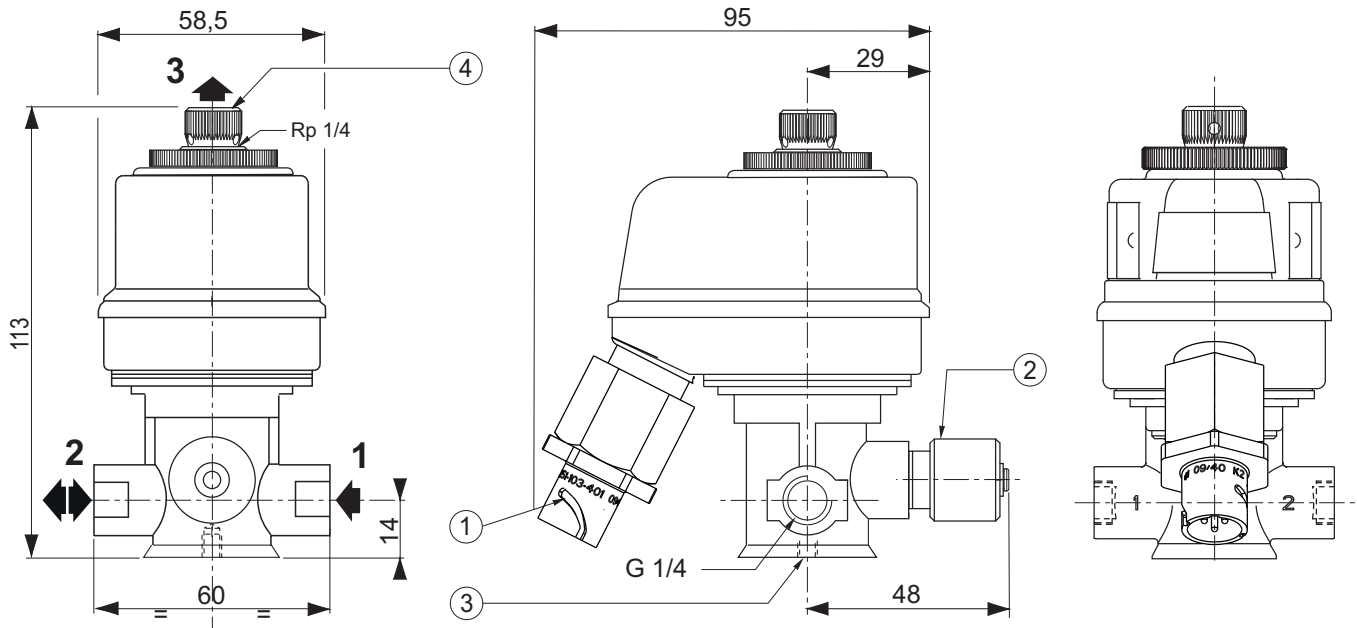
SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G	(mm)			(ms)				
1/4	3	16	260	250	0	10	12102109.230/50	MB301 O 3 - K3

INSTALLATION

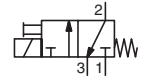
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Pipe connections (Rp) have standard thread according to ISO 7/1. Pipe connections (G) have standard thread according to ISO 228/1
- Spare parts kits available: Contact us

DIMENSIONS (mm), WEIGHT (kg)



weight
1

- ① QDC: Quick Disconnect Connector, NU25
- ② Manual operator location
- ③ Mounting hole M5, depth 7 mm
- ④ 2/2 NC: exhaust protector



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: MB301 - HM-63/9667 - ENSEIM 11042
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings			coil insulation class	type of protection	temperature range (C°)
	inrush (VA)	holding (VA) (W)				
230 V/50	32	20	11	H	IP54	+5 to +50

VAMAC® is a registered trademark of Dupont Performance Elastomers

SPECIFICATIONS

pipe size	orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G* ⁽¹⁾ 1/4	3	16	260	250	0	10	12102120.230/50	MB301 O 3 - K3

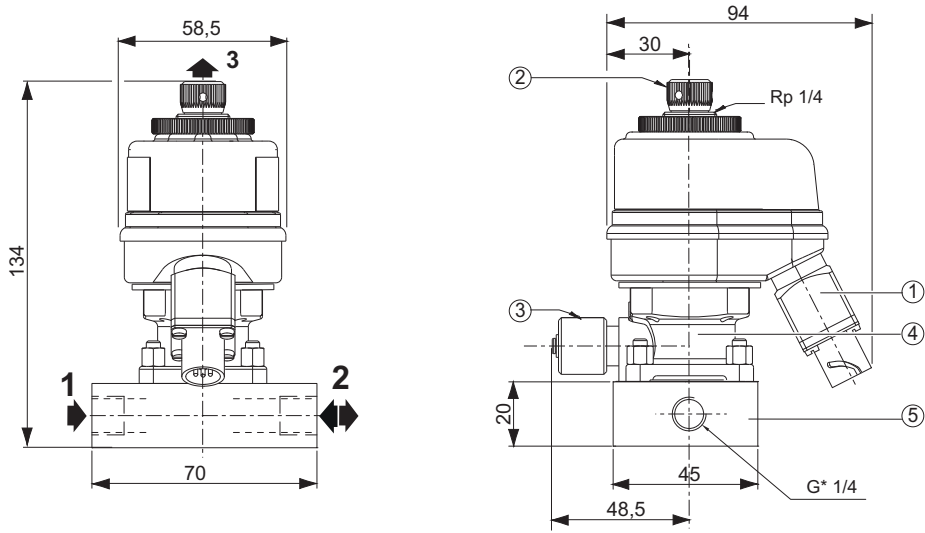
⁽¹⁾ Port 3: G 1/4

K3

INSTALLATION

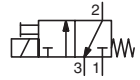
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- 1/4 pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1. Pipe connection (Rp) is standard thread according to ISO 7/1
- Spare parts kits available: Contact us

DIMENSIONS (mm), WEIGHT (kg)



weight
1,75

- ① QDC: Quick Disconnect Connector, 8N45S
- ② 3/2 NC: exhaust protector
- ③ Manual operator location



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: MB301 - HM-63/9667- ENSEIM 11042
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings			coil insulation class	type of protection	temperature range (C°)
	inrush (VA)	holding (VA)	(W)			
230 V/50	32	20	11	H	IP54	+5 to +50

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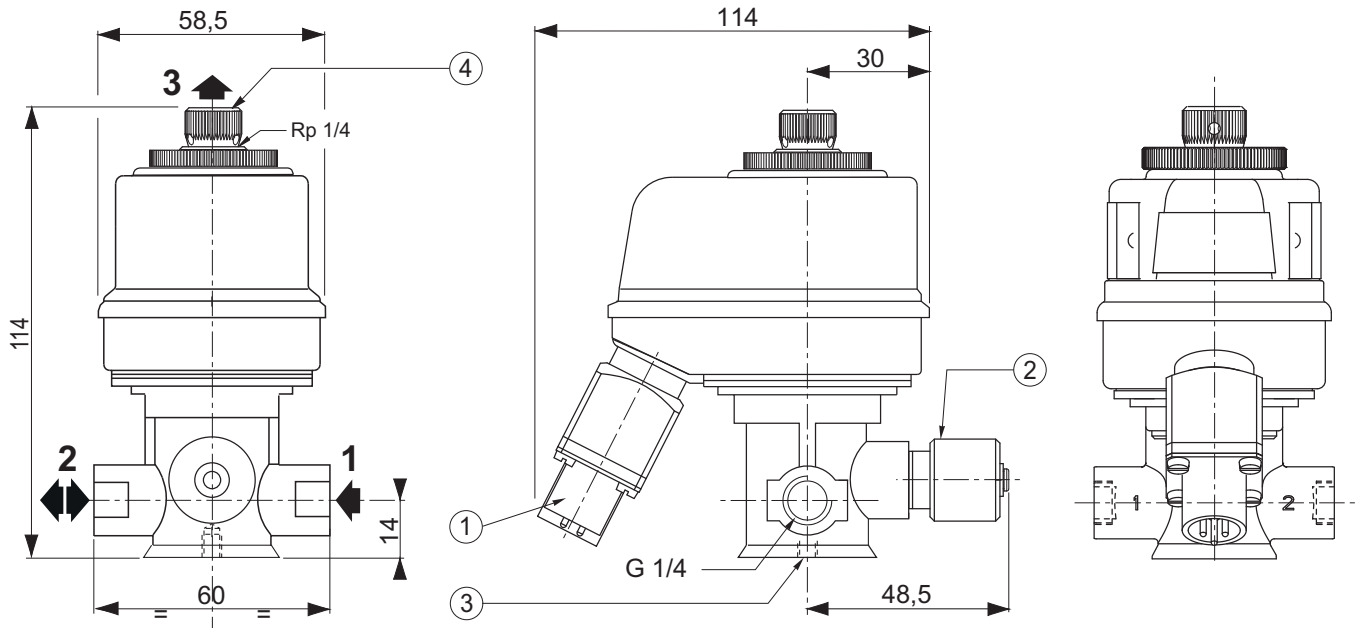
SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G	(mm)			(ms)				
1/4	3	16	260	250	0	10	12102122.230/50	MB301 O 3 - K3

INSTALLATION

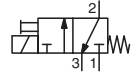
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Pipe connections (Rp) have standard thread according to ISO 7/1. Pipe connections (G) have standard thread according to ISO 228/1
- Spare parts kits available: Contact us

DIMENSIONS (mm), WEIGHT (kg)



weight
1

- ① QDC: Screw connector, 8N45S
- ② Manual operator location
- ③ Mounting hole M5, depth 7 mm
- ④ 3/2 NC: exhaust protector



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E
 - Test report: ELEEL 130821
 - Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000
- EMC:
 - EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 40 years at 23°C
 - Functional +10°C to +50°C
 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional:
 - 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic:
 - Vibration aging 2g from 10 Hz to 500 Hz during 2 hours on each axis
 - RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid:
 - Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, black standard paint
Threaded base, cover & screw Cast iron, steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	32	36	H	IP65	+5 to +50

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SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)			(ms)				
1/4	5	27,4	450	500	0	10	13102143.48/DC	V301 O 5 - K3

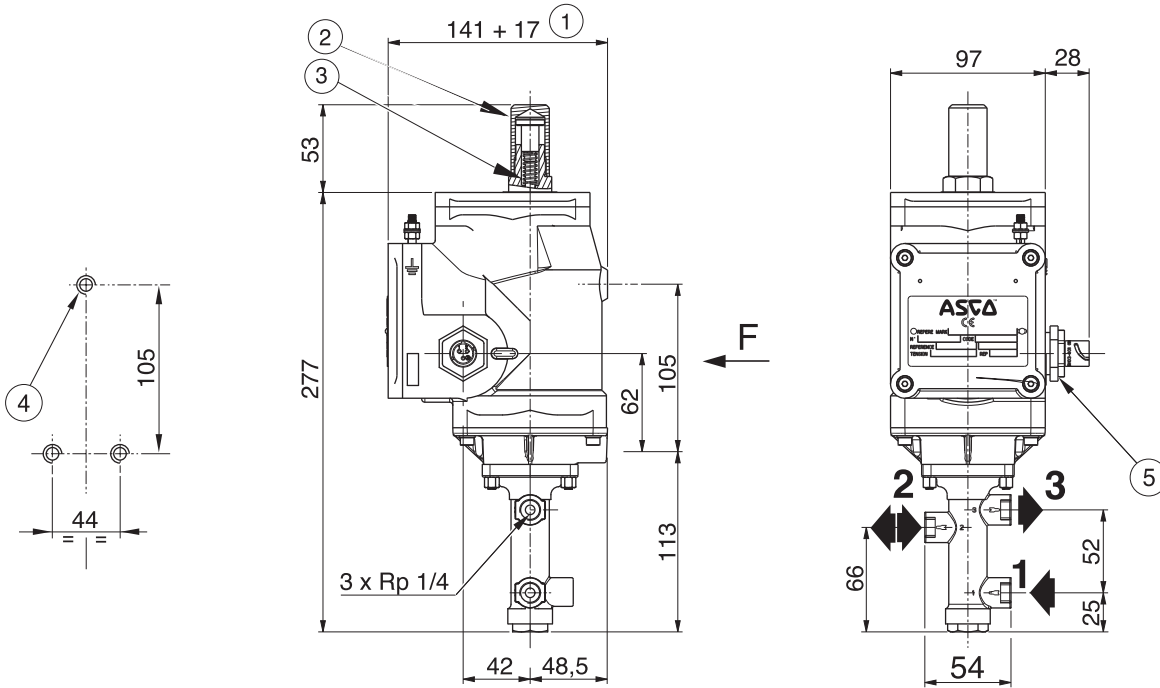
90073GB-2016/R01 Availability, design and specifications are subject to change without notice. All rights reserved.

K3

INSTALLATION

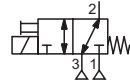
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
7,9

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ QDC: Quick Disconnect Connector, NU25



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5

Test report: V301 - HM-63/9699 + ASCO argut file 434683

Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000
- EMC: EMC test specification in accordance with RCC-E 2012

Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic: Vibration aging 2g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, black standard paint
Threaded base, cover & screw Cast iron, steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
	48 VDC	39			

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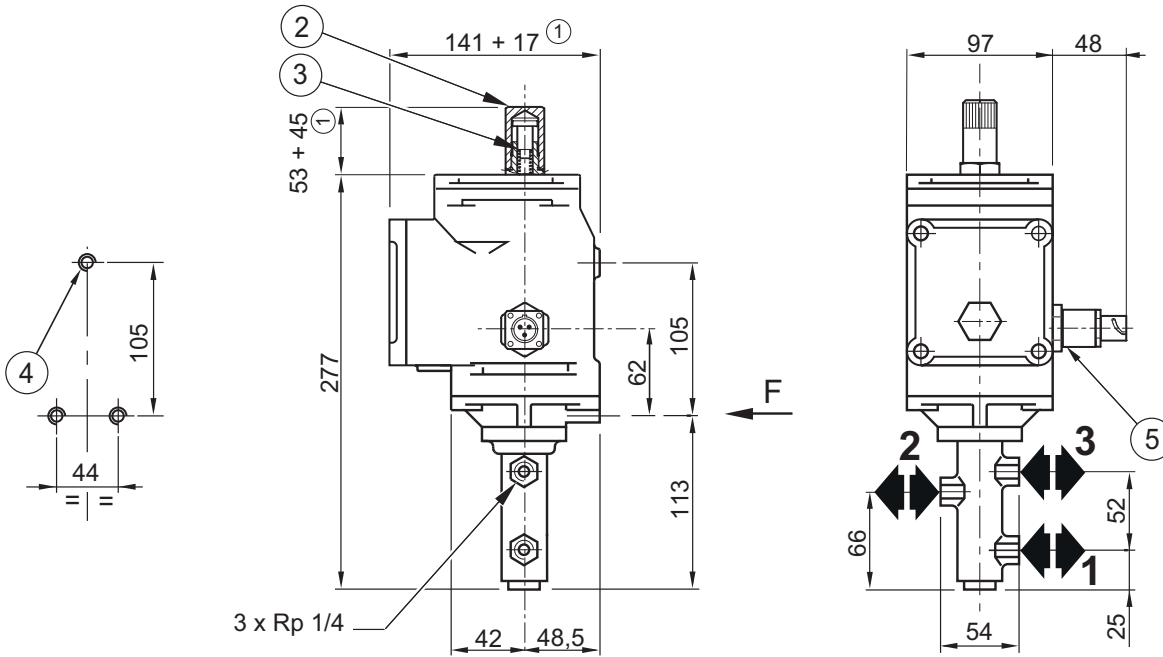
SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)			(ms)				
1/4	5	27,4	450	500	0	10	X131434582001J1	V301 O 5 2I1O.48/DC - K3

INSTALLATION

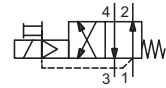
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
7,9

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ QDC: Quick Disconnect Connector, 8N45S

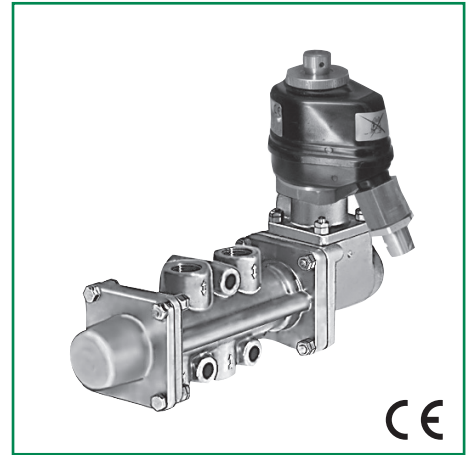


QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E
 Test report: ELEEL 130821
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil protection Unidirectional diode
 Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
	48 VDC	13			

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SPECIFICATIONS

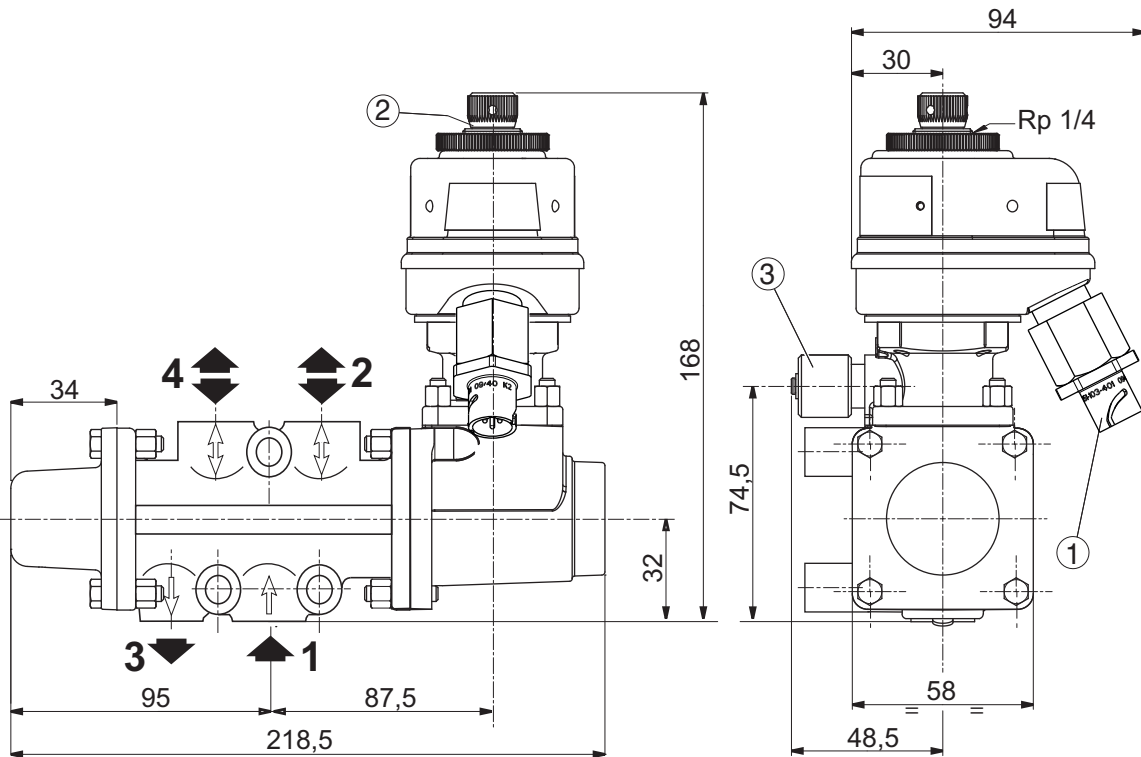
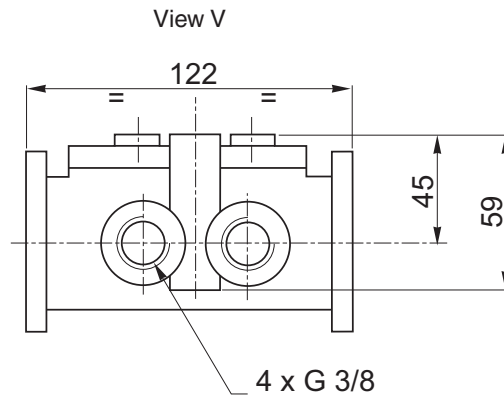
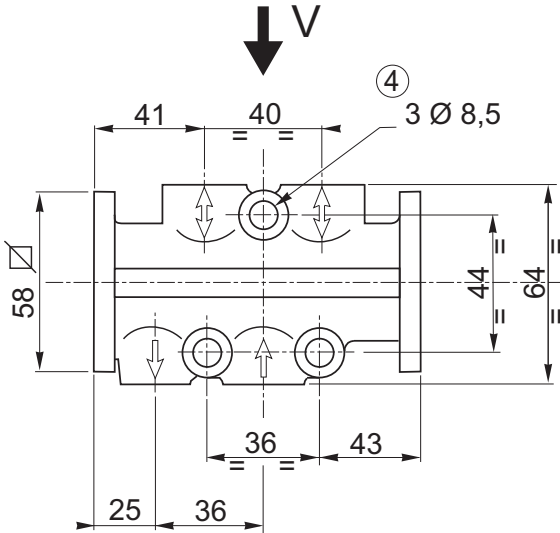
pipe size	orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar)						response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)			(l/min)				min.	max.		
		1 → 2	1 → 4	1 → 2	2 → 3	1 → 2	1 → 4					
G 3/8	9	84,4	61,6	80,7	1400	1030	1345	500	3	10	23202058.48/DC	MT402 D ⁽¹⁾ - K3

(1) D = Direct supply.

INSTALLATION

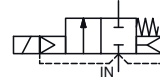
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
4

- ① QDC: Quick Disconnect Connector, NU25
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E 2012 + Procedure 503880
 Test report: 507450 + 507885
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000
- EMC: EMC test specification in accordance with RCC-E 2012

Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 32 years at 30°C
 Functional +3°C to +50°C
 Extreme +3°C to +50°C
- Functional: 15 000 cycles ON-OFF at +50°C (fluid tap water exempt of particle bigger than 0,1 mm)
- Seismic: Vibration aging 1g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Tap water



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Stainless steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals FPM (fluoroelastomer)

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Electrical entry Quick Disconnect Connector (QDC)
 Standard voltages AC (~): 230V/50 Hz

voltage	power ratings			coil insulation class	type of protection	temperature range
	inrush ~	holding ~				
U _n +10/-20%	(VA)	(VA)	(W)			(C°)
230AC/50Hz	73	29,6	13,5	HT	IP55	3 to +50

SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number
		(m³/h)	(l/min)		min.	max.	
ANPT	(mm)			(s)			
1/2	19	3,43	57,2	1,5	2,5	15	X210504405001H8.230/50 X210502702001H8.230/50

K3

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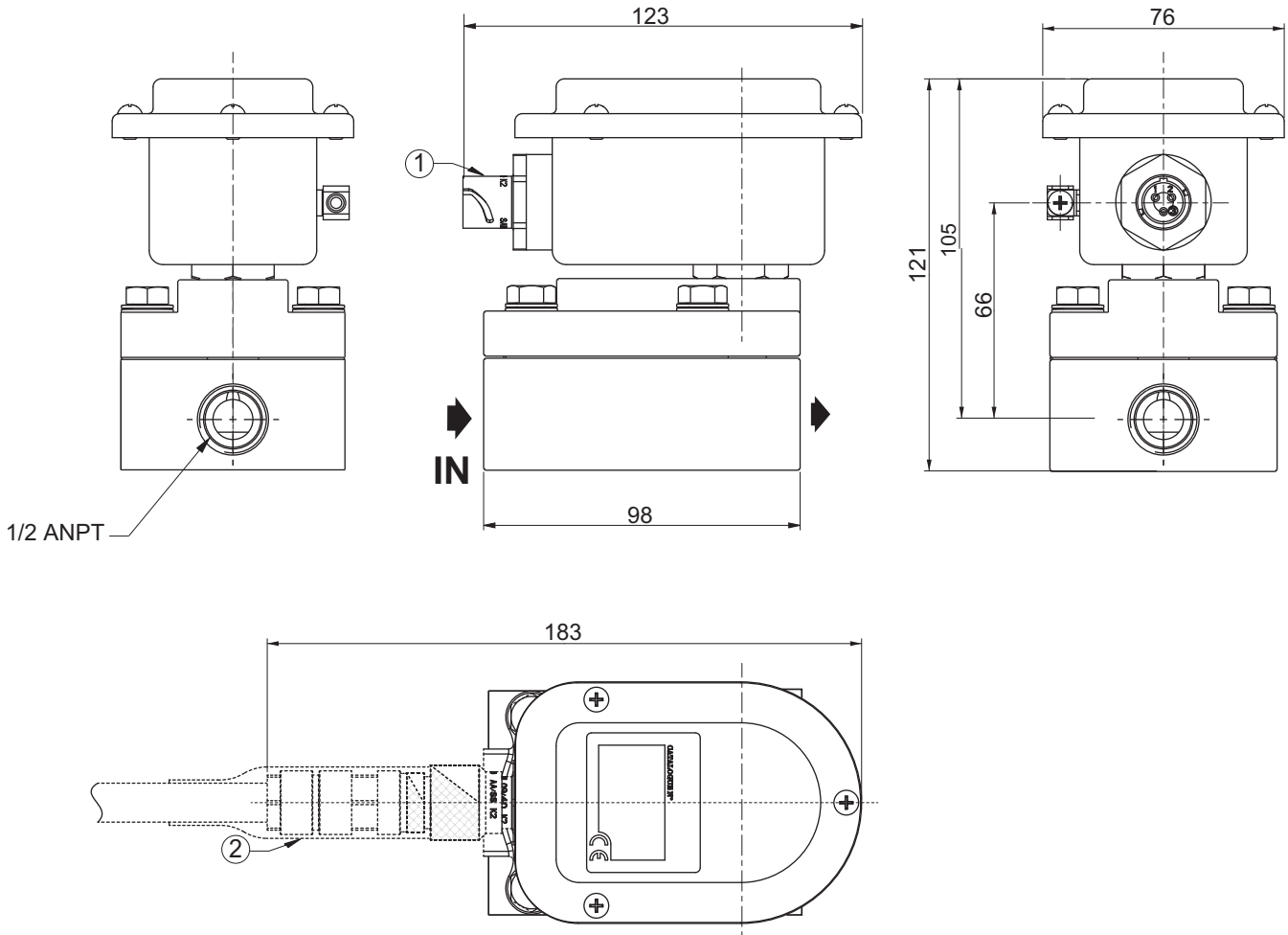
OPTION

- Electrical connection: Mobile Quick Disconnect Connector (**88200072**)

INSTALLATION

- The solenoid valves can be mounted in any position without affecting operation
- Pipe connection identifier is X = ANPT (ANSI/ASME B1.20.1)
- Spare parts kits available: contact us

DIMENSIONS (mm), WEIGHT (kg)



weight
3,2

- ① QDC: Quick Disconnect Connector
- ② Mobile Quick Disconnect Connector

QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E 2012 -+ 503936
 - Test report: CSR-000602E0013
 - Quality assurance: NF EN ISO 9001 v2008
 - RCC-E 2012 # A5000
- EMC:
 - EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
 - 1kV Phase to Phase - 2kV Phase to Ground
 - Damped sinusoidal wave (according to EN 61000-4-18): 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 20 years at 23°C
 - Variations: Cycles of 5°C to 50°C at 1°C/min
- Functional:
 - 10 000 cycles ON-OFF
- Seismic:
 - Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 - RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid:
 - Dry air or filtered air



GENERAL

Differential pressure 0 to 40 bar [1bar = 100 kPa]
 Piloting pressure 7 - 10 bar
 Maximum allowable pressure 60 bar
 Fluid controlled Air, filtered

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Core tube Stainless steel
 Internal parts Stainless steel
 Seals VAMAC®
 Distributor body Brass
 Internal parts Stainless steel, brass
 Distributor seals NBR, PUR, TPE-E
 Exhaust protector Brass, galvanized steel

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Electrical entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

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SPECIFICATIONS


pipe size		orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar) (l/min)		response time (max.) at 17,5 bar (ms)	operating pressure differential (bar)		catalogue number
G			1 → 2	2 → 3		min.	max.	
ports 1 & 2	port 3							
1	1 1/4	20	12 000	10 000	130	0	40	X288501748002H9.48/DC X288501748003J1.125/DC

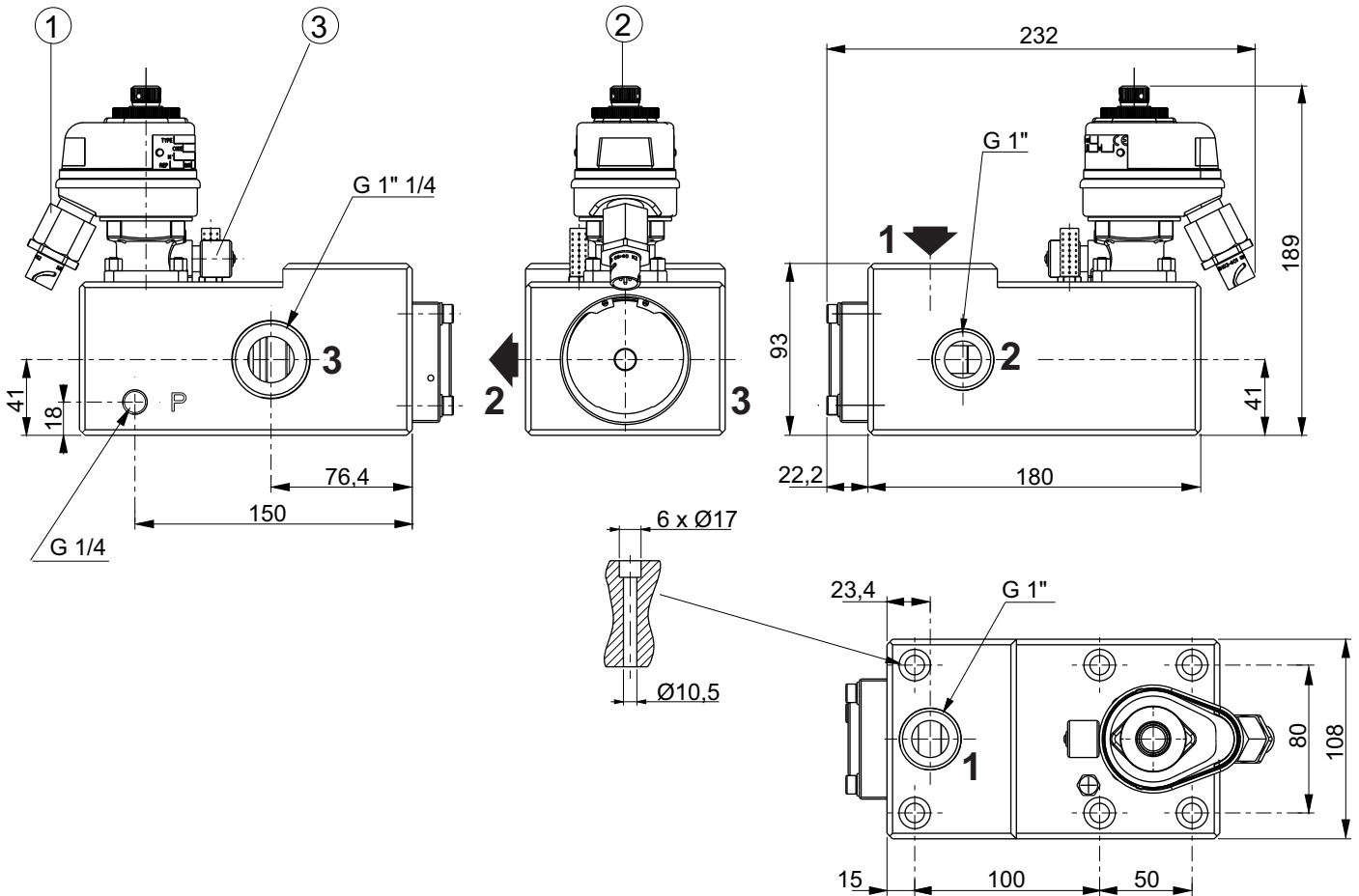
90203GE-2016/R01
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K3

INSTALLATION

- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg) 



weight
13,5

- ① QDC: Quick Disconnect Connector, NU25
- ② 3/2 NC: exhaust protector
- ③ Manual operator location

QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: MB301 - HM-63/9667 + ASCO argut file 503316
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil connection Screw terminals
 Coil protection Unidirectional diode
 Cable entry Cable gland, CM12 (cable Ø 8,5-13 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50

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SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G* ⁽¹⁾	(mm)			(ms)				
1/4	3	16	260	250	0	10	12101351.48/DC	MB301 O 3 - K3

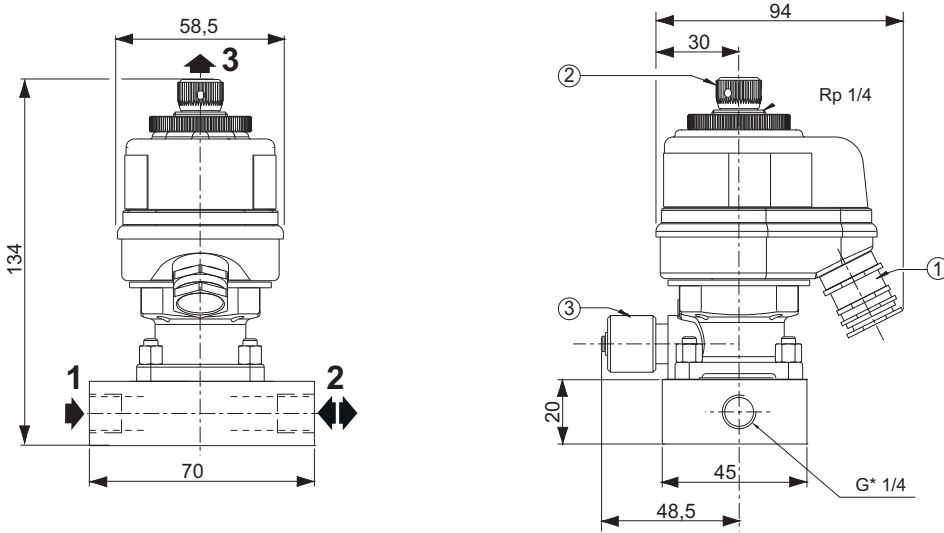
⁽¹⁾ Port 3: G 1/4

K3

INSTALLATION

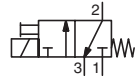
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- 1/4 pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
1,75

- ① Cable entry, CM12 (cable Ø 8,5-13 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: MB301 - HM-63/9667 + ASCO argut file 503316
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil connection Screw terminals
 Coil protection Unidirectional diode
 Cable entry Cable gland, CM12 (cable Ø 8,5-13 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50

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SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G* (1)	(mm)			(ms)				
1/4	3	16	260	250	0	10	12102099.48/DC	MB301 O 3 - K3

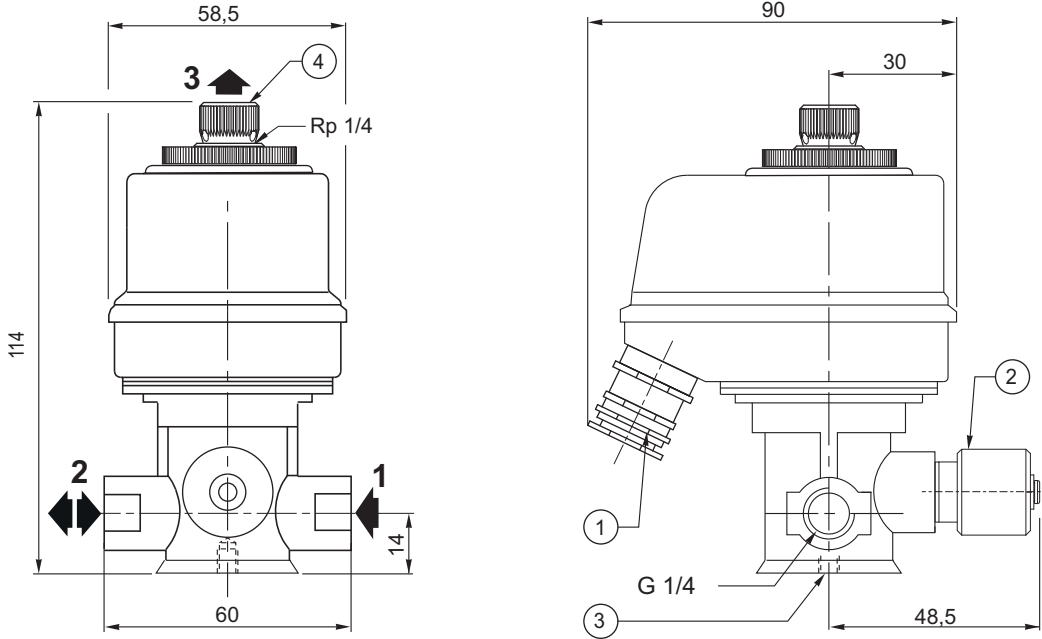
K3

90192GB-2016/R01 Availability, design and specifications are subject to change without notice. All rights reserved.

INSTALLATION

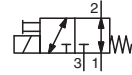
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Pipe connections (Rp) have standard thread according to ISO 7/1. Pipe connections (G) have standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)



weight
1

- ① Cable entry, CM12 (cable Ø 8,5-13 mm)
- ② Manual operator location
- ③ Mounting hole M5, depth 7 mm
- ④ 3/2 NC: exhaust protector



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: V301 - HM-63/9699 + ASCO argut file 503316
 - Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000
- EMC: EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic: Vibration aging 2g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, black standard paint
Threaded base, cover & screw Cast iron, steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM12 (cable Ø 8,5-13 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	32	36	H	IP65	+5 to +50

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SPECIFICATIONS

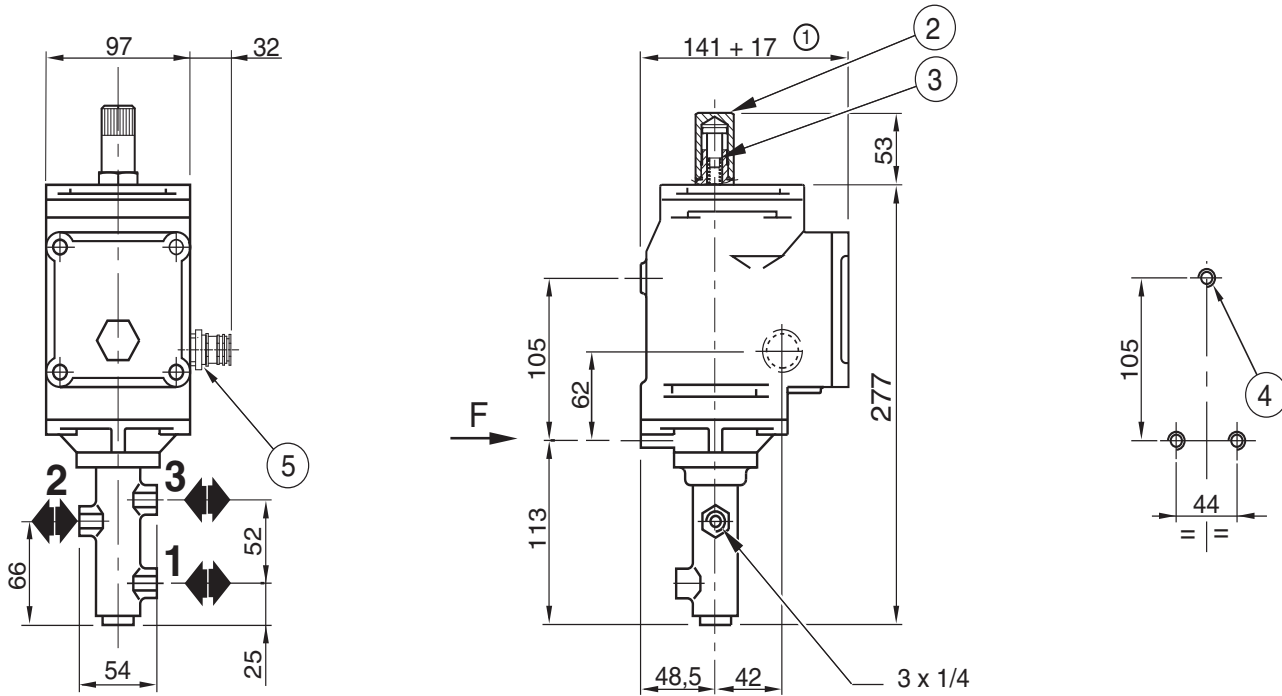
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)			(ms)				
1/4	4	19,2	320	500	0	8	13101420.48/DC	V301 U 4 - K3

K3

INSTALLATION

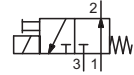
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1
- Spare parts kits available:
 - Coil/diode: contact us
 - Complete body item: contact us

DIMENSIONS (mm), WEIGHT (kg)



type	weight
01	7,9

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ Cable entry, CM12 (Ø 8,5-13 mm)



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: V301 - HM-63/9699 + ASCO argut file 503316
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic: Vibration aging 2g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, black standard paint
 Threaded base, cover & screw Cast iron, steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil connection Screw terminals
 Coil protection Unidirectional diode
 Cable entry Cable gland, CM12 (cable Ø 8,5-13 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	32	36	H	IP65	+5 to +50

VAMAC® is a registered trademark of Dupont Performance Elastomers

SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)			(ms)				
1/4	5	27,4	450	500	0	10	X131507759001H9	V301 F 5 48/DC- K3

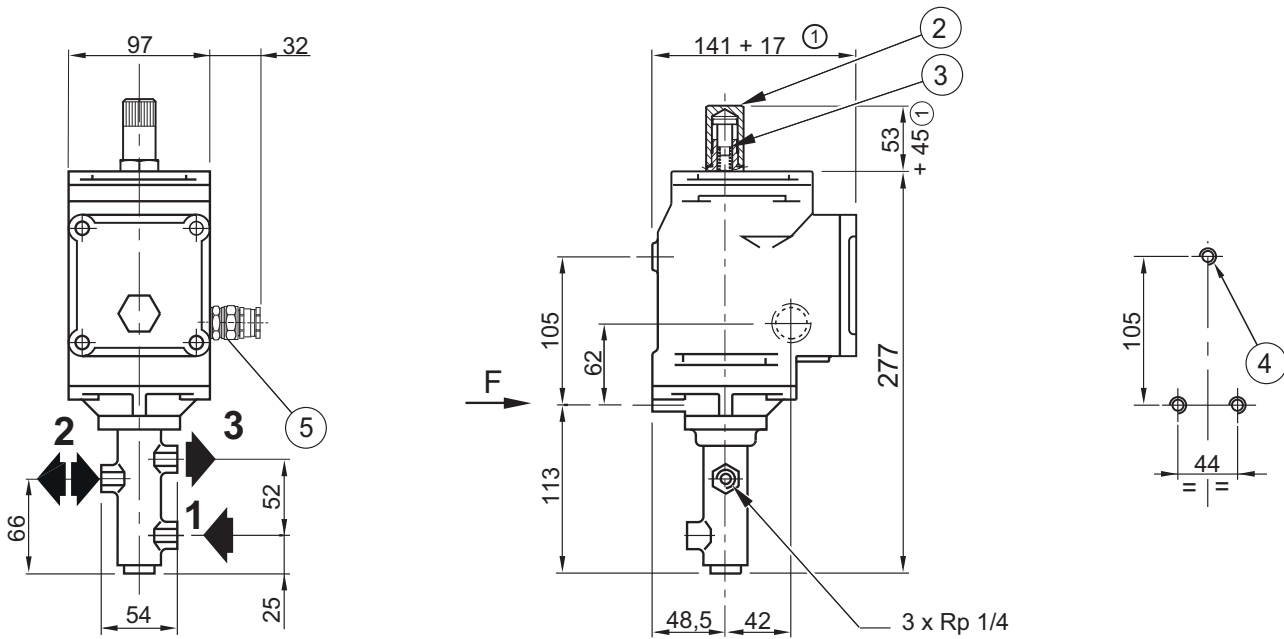
90200GB-2016/R01 Availability, design and specifications are subject to change without notice. All rights reserved.

K3

INSTALLATION

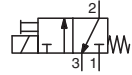
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
7,9

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ Cable entry, CM12 (cable Ø 8,5-13 mm)



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: V301 - HM-63/9699 + ASCO argut file 503316
 - Quality assurance: NF EN ISO 9001-2008
RCC-E 2012 # A5000
- EMC:
 - EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 40 years at 23°C
 - Functional +10°C to +50°C
 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional:
 - 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic:
 - Vibration aging 2g from 10 Hz to 500 Hz during 2 hours on each axis
 - RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, black standard paint
Threaded base, cover & screw Cast iron, steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, , CM12 (cable Ø 8,5-13 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	32	36	H	IP65	+5 to +50

VAMAC® is a registered trademark of Dupont Performance Elastomers

SPECIFICATIONS

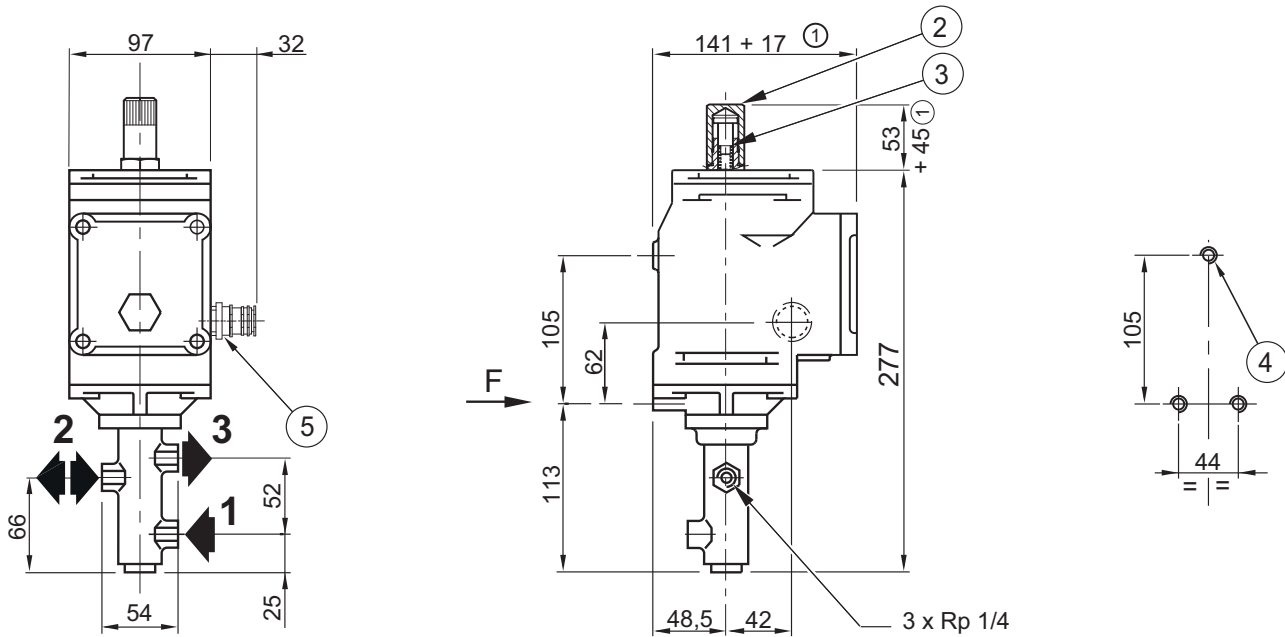
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)	(m³/h)	(l/min)	(ms)	min.	max.	13101388.48/DC	V301 O 5 - K3
1/4	5	27,4	450	500	0	10		

K3

INSTALLATION

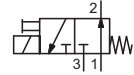
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
7,9

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ Cable entry, CM12 (cable Ø 8,5-13 mm)



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: V301 - HM-63/9699 + ASCO argut file 504259
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic: Vibration aging 2g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, black standard paint
 Threaded base, cover & screw Cast iron, steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil connection Screw terminals
 Coil protection Unidirectional diode
 Cable entry Cable gland, CM12 (cable Ø 8,5-13 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	32	36	H	IP65	+5 to +50

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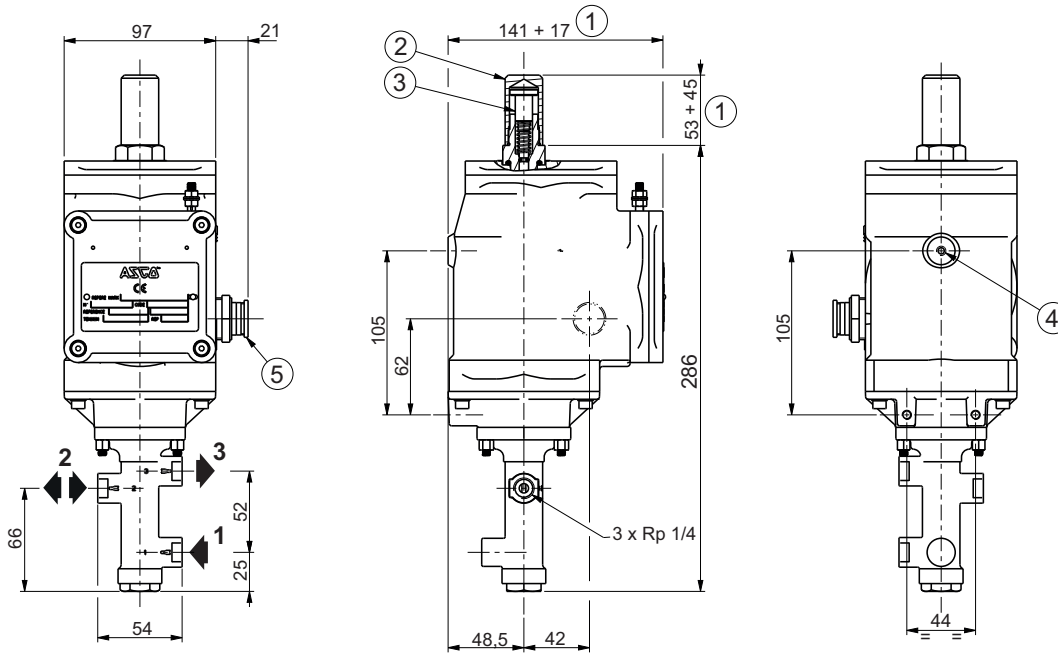
SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)			(ms)				
1/4	6	33	550	500	0	8	X131514265001H9	V301 F 6 48/DC- K3

INSTALLATION

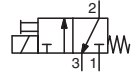
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
7,9

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ Cable entry, CM12 (cable Ø 8,5-13 mm)



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: V301 - HM-63/9699 + ASCO argut file 503316
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic: Vibration aging 2g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, black standard paint
 Threaded base, cover & screw Cast iron, steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil connection Screw terminals
 Coil protection Unidirectional diode
 Cable entry Cable gland, CM12 (cable Ø 8,5-13 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	32	36	H	IP65	+5 to +50

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SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)			(ms)				
1/4	6	36	600	500	0	8	13101372.48/DC	V301 O 6 48/DC- K3

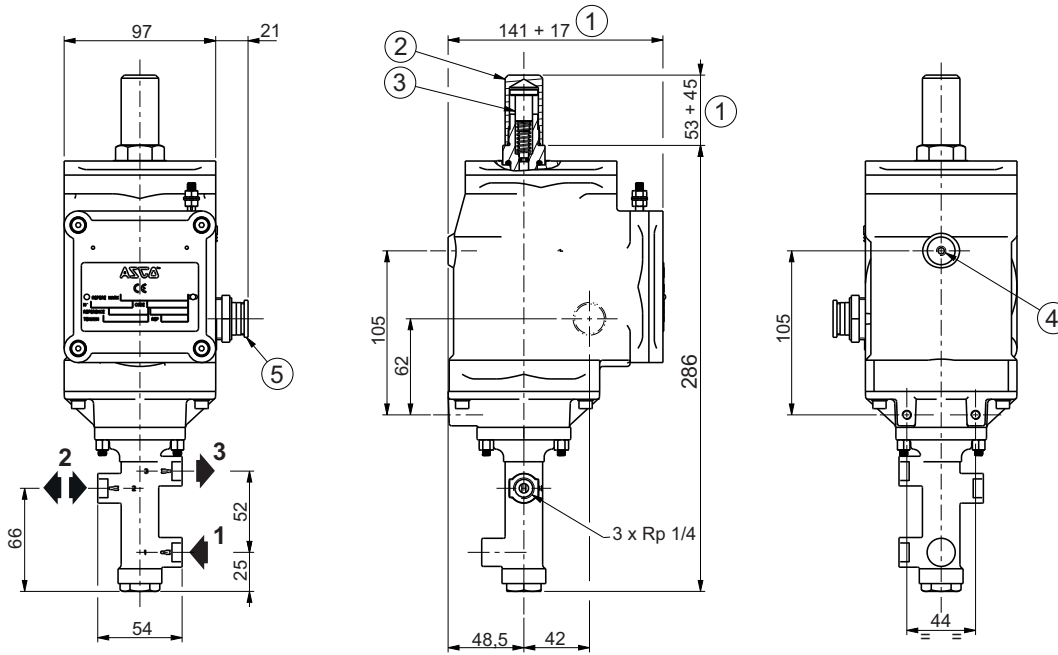
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K3

INSTALLATION

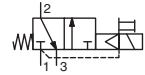
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
7,9

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ Cable entry, CM12 (cable Ø 8,5-13 mm)



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: MT302 HM-63/9667 + ASCO argut file 503316
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil connection Screw terminals
 Coil protection Unidirectional diode
 Cable entry Cable gland, CM12 (cable Ø 8,5-13 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50
125 VDC	14	16			

VAMAC® is a registered trademark of Dupont Performance Elastomers

SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.)	operating pressure differential (bar)		catalogue number	reference	orientation type
		1 → 2		2 → 3			min.	max.			
G	(mm)	(m³/h)	(l/min)	(m³/h)	(l/min)	(ms)			23100527.48/DC X231504443001H9	MT302 D ⁽¹⁾ .48/DC - K3	01
3/8	9	80,6	1345	76	1270	500	3	10			02


⁽¹⁾ D = Direct supply.

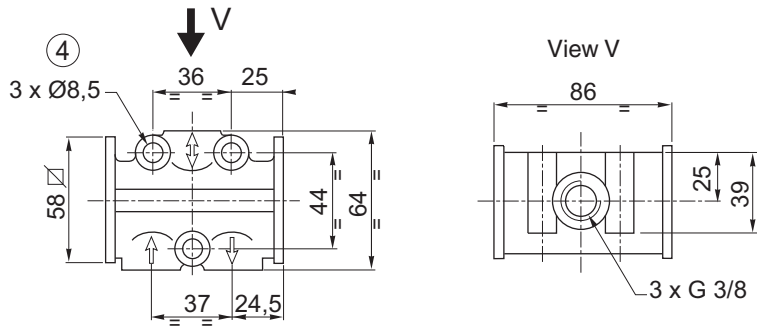
K3

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INSTALLATION

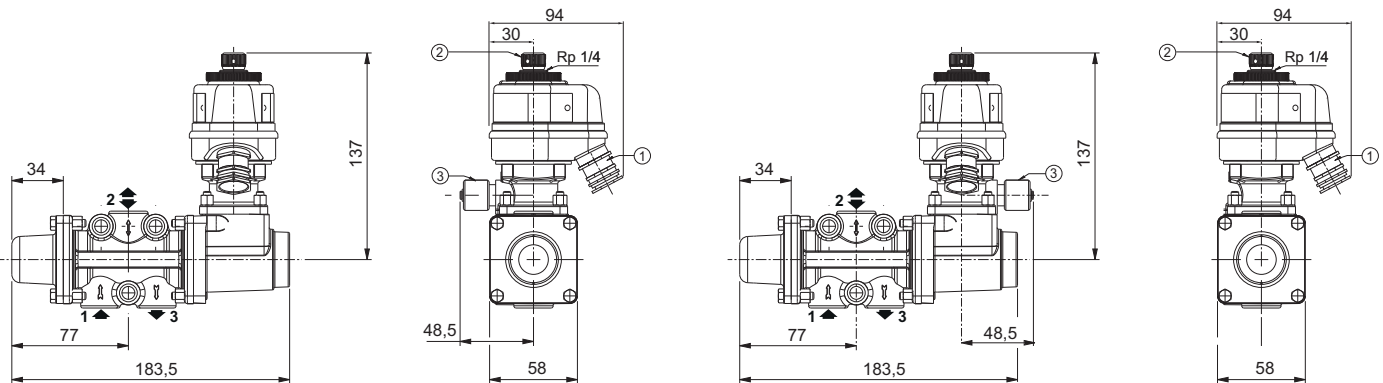
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg) 



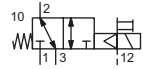
TYPE 01

TYPE 02



type	weight
01 / 02	2,7

- ① Cable entry, CM12 (cable Ø 8,5-13 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: MT302 - HM-63/9667 + ASCO argut file 503316
 - Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000
- EMC:
 - EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature:
 - Aging 40 years at 23°C
 - Functional +10°C to +50°C
 - Extreme -25°C to +70°C
 - Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic:
 - Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 - RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Cable entry Cable gland, CM12 (cable Ø 8,5-13 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50

VAMAC® is a registered trademark of Dupont Performance Elastomers

SPECIFICATIONS

pipe size	orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference ⁽¹⁾
		1 → 2		2 → 3			min.	max.		
G	(mm)	(m³/h)	(l/min)	(m³/h)	(l/min)	(ms)	min.	max.	X23150444001H9	MT302 S.48/DC - K3
3/8	9	80,6	1345	76	1270	500	3	10		

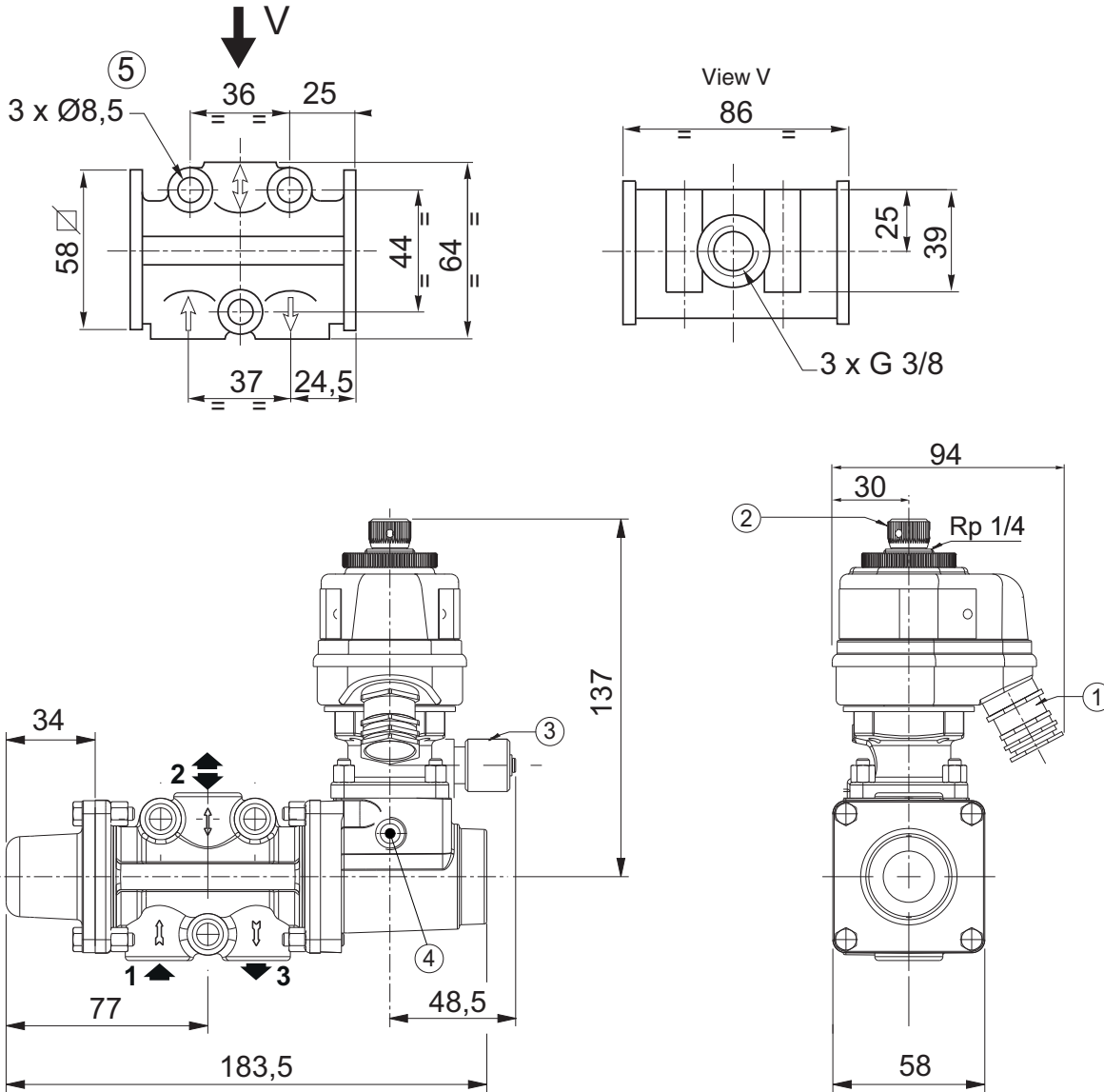
⁽¹⁾ S = External supply

K3

INSTALLATION

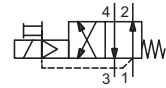
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
2,7

- ① Cable entry, CM12 (cable Ø 8,5-13 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ G 1/4 for external pilot supply
- ⑤ 3 mounting holes 8,5 mm dia.

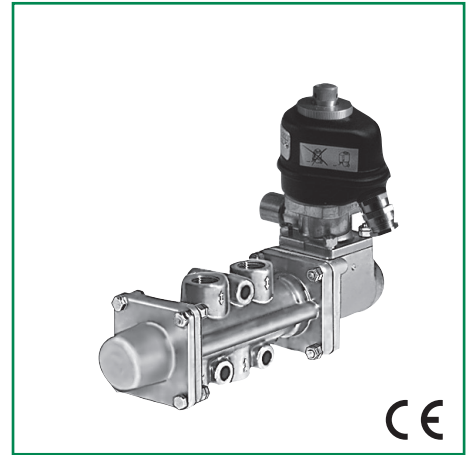


QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: MT402 - HM-63/9667 + ASCO argut file 503316
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil connection Screw terminals
 Coil protection Unidirectional diode
 Cable entry Cable gland, CM12 (cable Ø 8,5-13 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50

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SPECIFICATIONS

pipe size	orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar)						response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)			(l/min)				min.	max.		
G		1 → 2 1 → 4	1 → 2	2 → 3	1 → 2 1 → 4	1 → 2	2 → 3					
3/8	9	84,4	61,6	80,7	1400	1030	1345	500	3	10	23202042.48/DC	MT402 D ⁽¹⁾ - K3

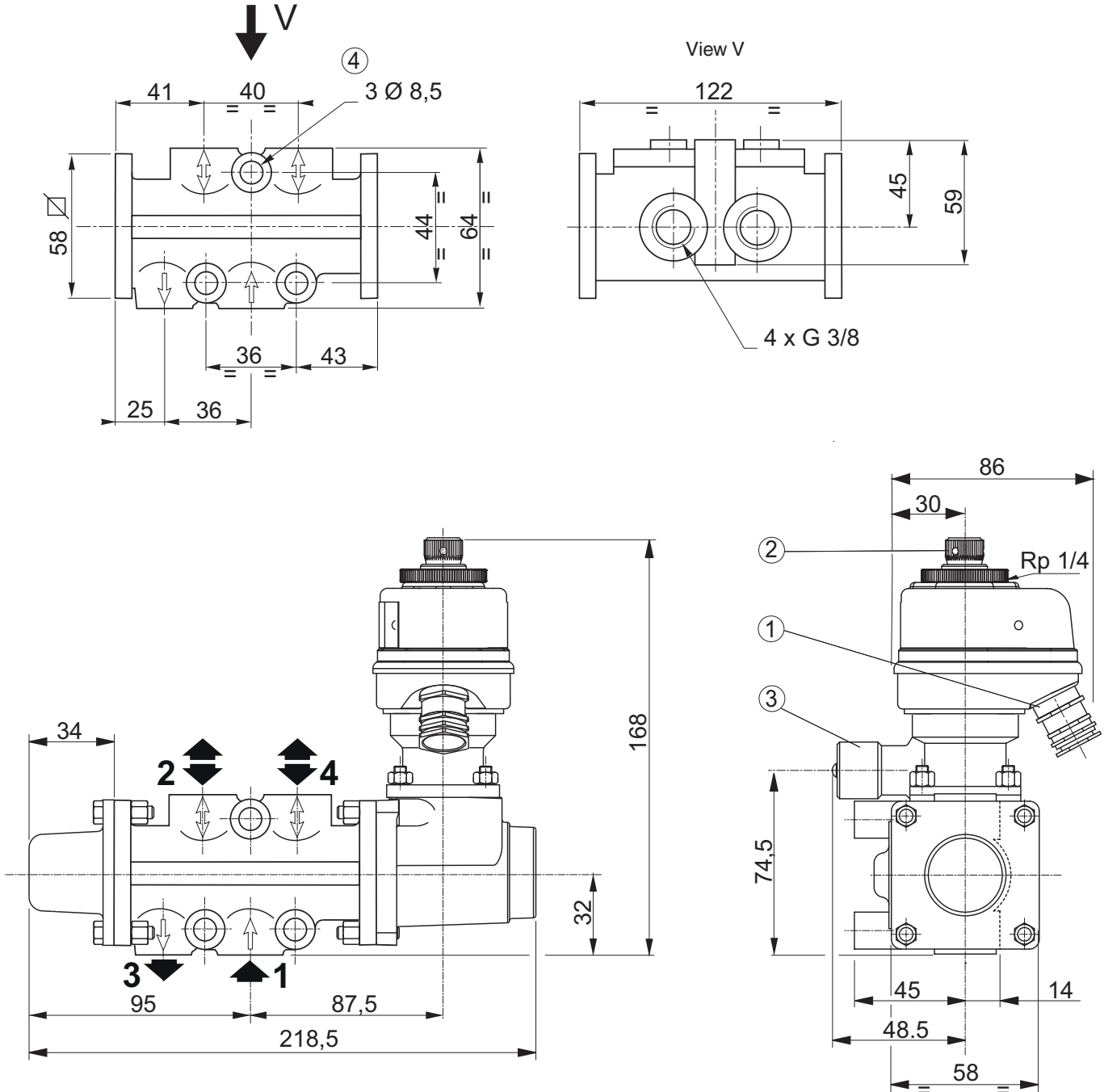
⁽¹⁾ D = Direct supply.

K3

INSTALLATION

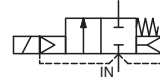
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
4

- ① Cable entry, CM12 (cable Ø 8,5-13 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E 2012 + Procedure 503880
 - Reference File: 507757
 - Quality assurance: NF EN ISO 9001 v2008
SGAQ DIN/DPN/DNC no. 2013-03 EDF
- EMC:
 - Surge immunity test: according to EN61000-4-5
1kV Phase to Phase - 2kV Phase to Ground
 - Damped sinusoidal wave according to EN61000-4-18: level 2
100 KHz, 1 MHz, 3 MHz, 10 MHz, 30 MHz
 - 0,5kV Phase to Phase - 1kV Phase to Ground
- Ambient temperature:
 - Aging 32 years at 30°C
 - Functional +3°C to +50°C
 - Extreme +3°C to +50°C
- Functional:
 - 15 000 cycles ON-OFF at +50°C (fluid tap water exempt of particle bigger than 0,1 mm)
- Seismic:
 - Vibration aging 1g from 10 Hz to 500 Hz during 2 hours on each axis
 - RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid:
 - Tap water



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Stainless steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals FPM (fluoroelastomer)

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Electrical entry Cable gland, , CM12 (cable Ø 8,5-13 mm)
 Standard voltages AC (~): 230V/50 Hz

voltage	power ratings			coil insulation class	type of protection	temperature range
	inrush ~	holding ~				
U _n +10/-20%	(VA)	(VA)	(W)			(C°)
230AC/50Hz	73	29,6	13,5	HT	IP55	+3 to +50

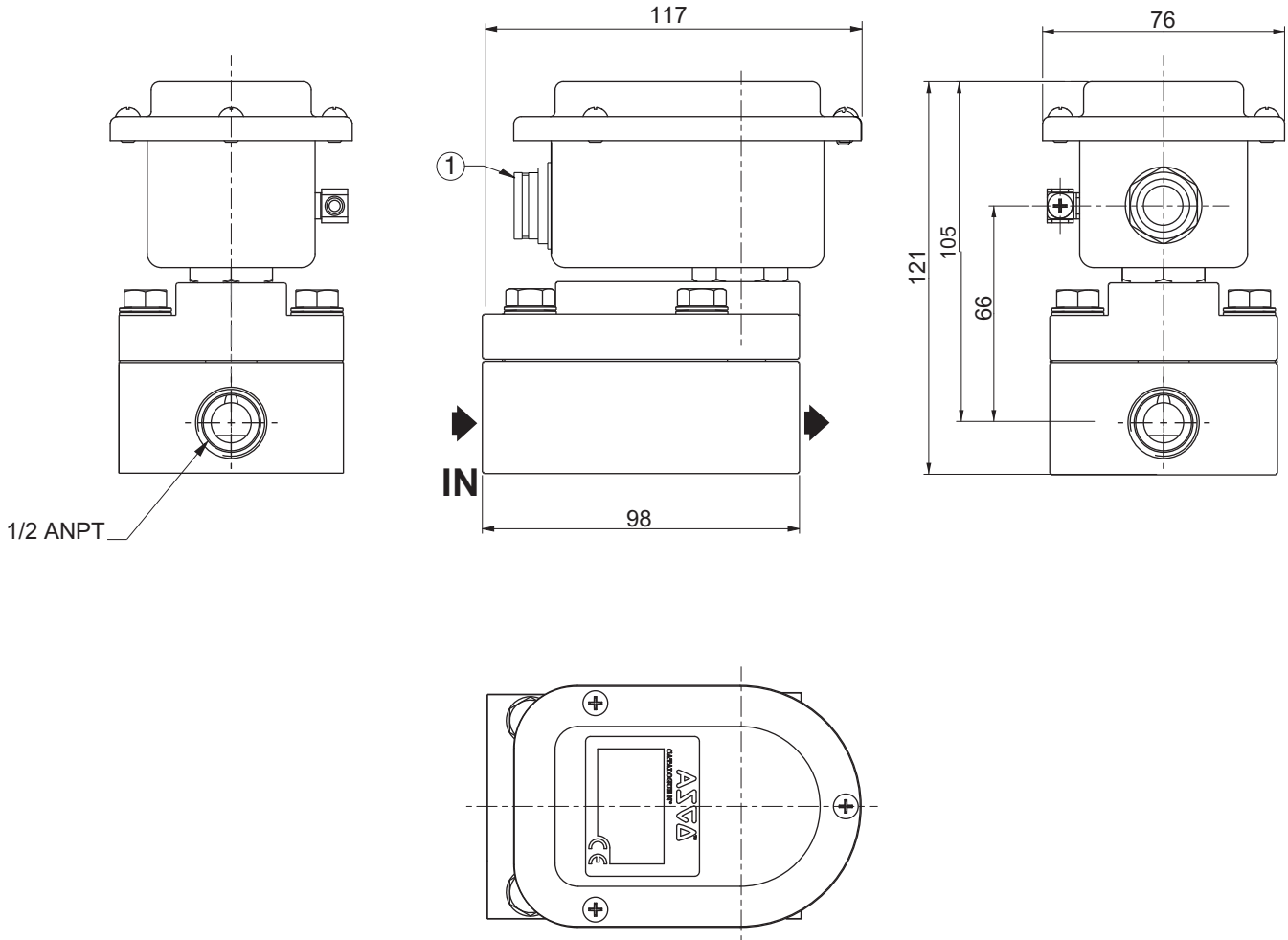
SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number
		(m³/h)	(l/min)		min.	max.	
ANPT	(mm)			(s)			X210515731001H8.230/50
1/2	19	3,43	57,2	1,5	2,5	15	

INSTALLATION

- The solenoid valves can be mounted in any position without affecting operation
- Pipe connection identifier is X = ANPT (ANSI/ASME B1.20.1)
- Spare parts kits available: contact us

DIMENSIONS (mm), WEIGHT (kg)



weight
3,2

① Cable entry, CM12 (cable Ø 8,5-13 mm)

QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E 2012 -+ 503936
 Test report: 518213
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 20 years at 23°C
 Variations: Cycles of 5°C to 50°C at 1°C/min
- Functional: 10 000 cycles ON-OFF
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



GENERAL

Differential pressure 0 to 40 bar [1bar = 100 kPa]
 Piloting pressure 7 - 10 bar
 Maximum allowable pressure 60 bar
 Fluid controlled Air, filtered

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Core tube Stainless steel
 Internal parts Stainless steel
 Seals VAMAC®
 Distributor body Brass
 Internal parts Stainless steel, brass
 Distributor seals NBR, PUR, TPE-E
 Exhaust protector Brass, galvanized steel

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Electrical entry Cable gland, CM12 (cable Ø 8,5-13 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	-10 to +50

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SPECIFICATIONS


pipe size		orifice size (mm)	rated flow (ΔP 1 bar at 6,3 bar) (l/min)		response time (max.) at 31,5 bar (ms)	operating pressure differential (bar)		catalogue number
G			1 → 2	2 → 3		min.	max.	
ports 1 & 2	port 3							
1	1 1/4	20	12 000	10 000	130	0	40	X288517179001H9.48/DC

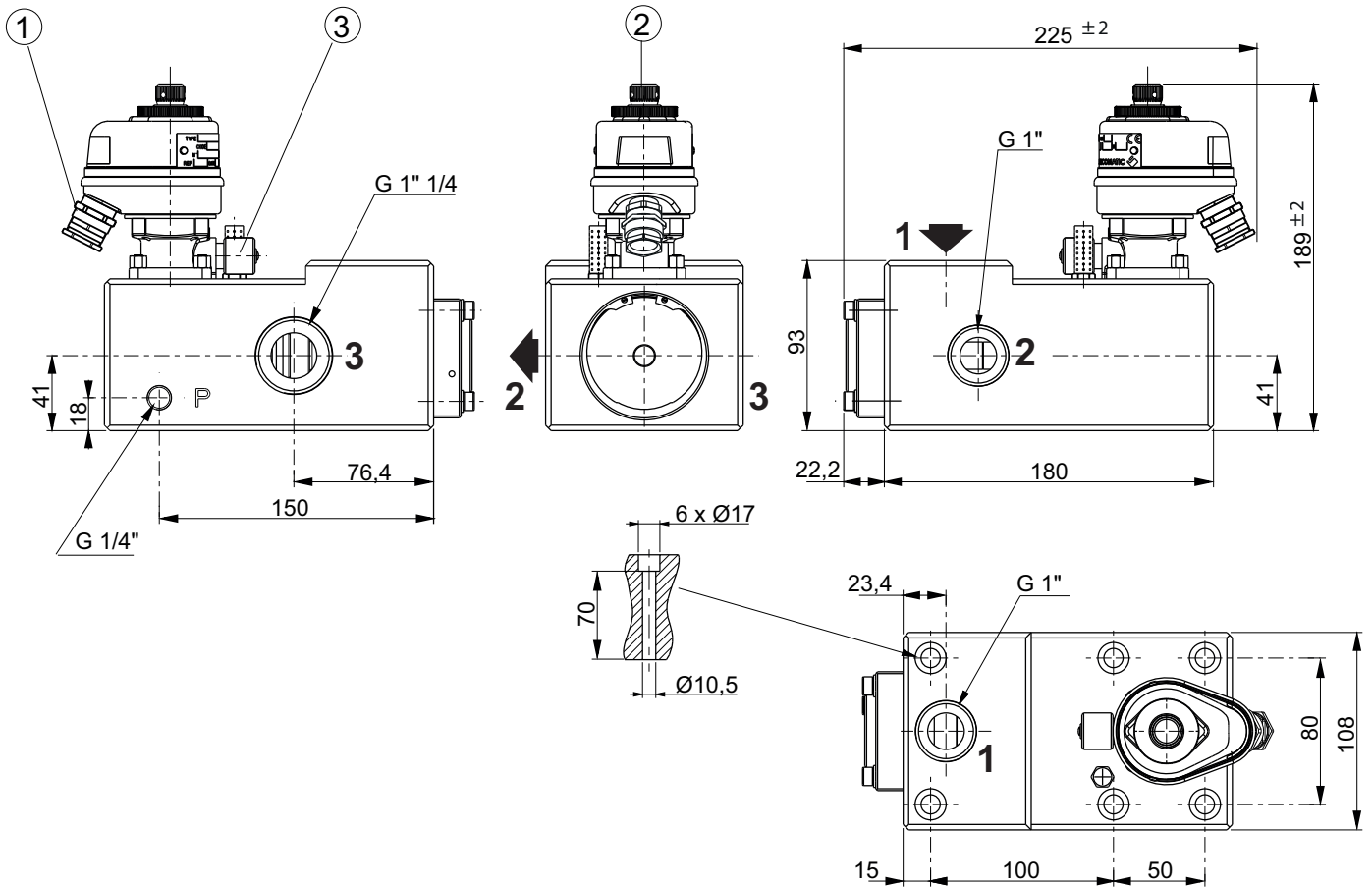
90216GB-2016/R01
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K3

INSTALLATION

- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg) 



weight
13,5

- ① Cable entry, CM12 (cable Ø 8,5-13 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location

QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:

Test requirements: RCC-E + HM-63/7282-5
 Test report: MB301 - HM-63/9667 + ASCO argut file 503316
 Quality assurance: NF EN ISO 9001 v2008
 RCC-E 2012 # A5000

- EMC: EMC test specification in accordance with RCC-E 2012
 Surge immunity test (according to EN61000-4-5)
 1kV Phase to Phase - 2kV Phase to Ground
 Damped sinusoidal wave (according to EN 61000-4-18):
 100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
 Functional +10°C to +50°C
 Extreme -25°C to +70°C
 Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic: Vibration aging 2 g from 10 Hz to 500 Hz during 2 hours on each axis
 RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Metal cover, black standard paint

MATERIALS IN CONTACT WITH FLUID

Body Brass
 Internal parts & springs Stainless steel
 Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
 Coil connection Screw terminals
 Coil protection Unidirectional diode
 Cable entry Cable gland, CM14 (cable Ø 15,5 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	11	13	H	IP54	+5 to +50

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SPECIFICATIONS

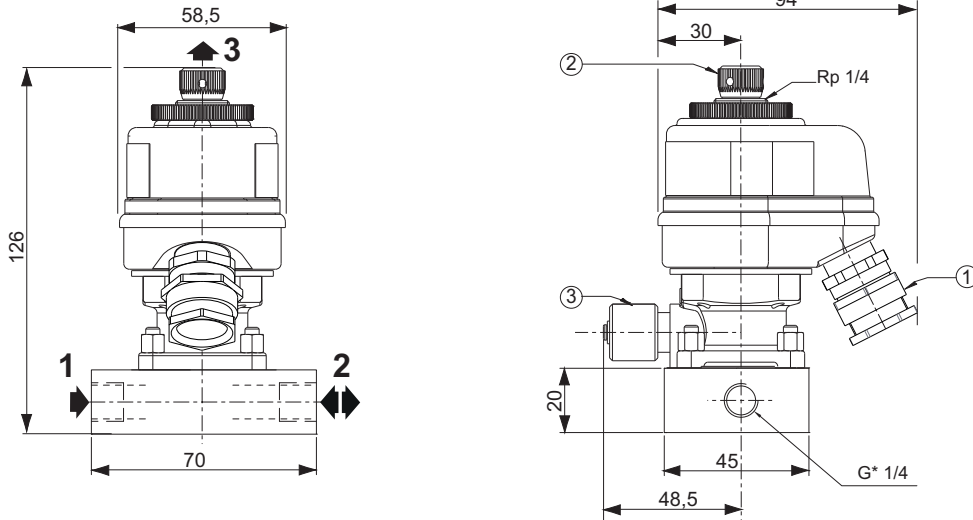
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G* ⁽¹⁾	(mm)			(ms)				
1/4	3	16	260	250	0	10	12102055.48/DC	MB301 O 3 - K3

⁽¹⁾ Port 3: G 1/4

INSTALLATION

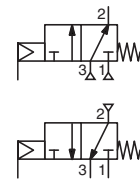
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- 1/4 pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1. Pipe connection (Rp) is standard thread according to ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



weight
1,75

- ① Cable entry, CM14 (cable Ø 15,5 mm)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location



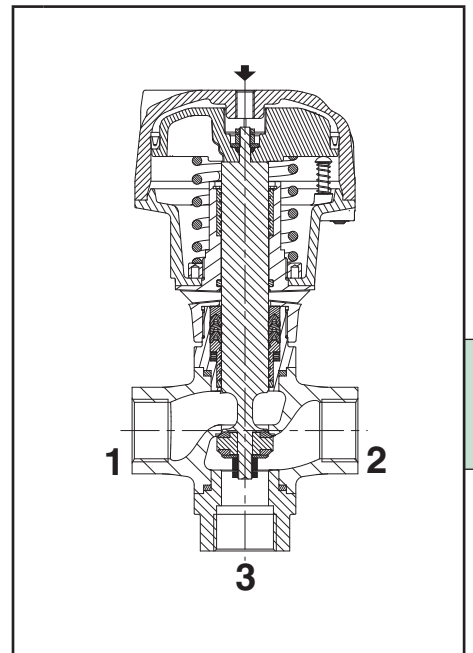
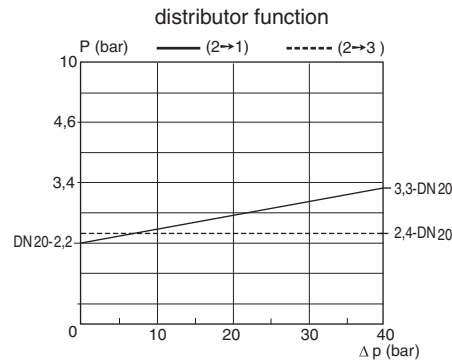
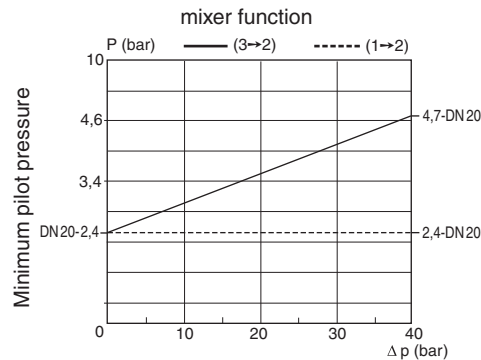
FEATURES

- Valve manufactured in accordance with the design which passed: Seismic test: 5DSD (Half Dimensioning Seism) and 1SDD (Dimensioning Seism) according to valve indirectly linked to civil engineering (20 g max.)
- Vibration test: 2 hours in each direction/10 to 500 Hz/1 g
- Used in fluid remote control and servo systems
- High-performance stuffing box resistant to thermal shock
- Mixer function (two pressure inlets at 1 or 3, one outlet at 2) or distributor function (one pressure inlet at 2, two outlets at 1 and 3)
- Vacuum operation up to 10^{-2} mbar
- Allowable backpressure: up to 40 bar
- Optical position indicator as standard
- The valves satisfy Pressure Equipment Directive 97/23/EC, article 3.3

GENERAL

Differential pressure	0 to 40 bar [1 bar =100 kPa]
Maximum allowable pressure (Ps)	40 bar (100°C)
Ambient temperature range	-25°C to +55°C
Maximum viscosity	5000 cSt (mm ² /s)
Pilot fluid	Air
Max. pilot pressure	12 bar
Min. pilot pressure	See below

fluids (*)	temperature range	disc seal (*)
air	-10°C to +250°C	bronze PTFE



MATERIALS IN CONTACT WITH FLUID

(*) Ensure that the compatibility of the fluids in contact with the materials is verified

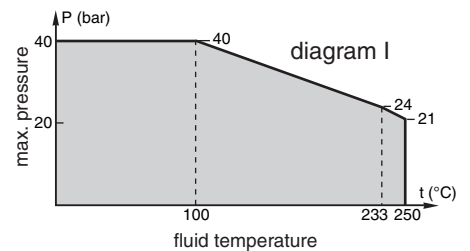
Valve body and plug	Stainless steel
Stuffing box housing	Stainless steel
Stem, disc	Stainless steel
Stuffing box packing	PTFE chevrons
Disc seal	Bronze PTFE
Valve body seal	Graphite

OTHER MATERIALS

Operator	Aluminium, nickel plated
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SPECIFICATIONS

piping (ISO 6708)		flow coefficient Kv								operator diameter		15-DIGIT PRODUCT CODE	
pipe size	DN	mixer				distributor				(mm)	catalogue number	reference	
		3→2	1→2	2→3	2→1								
NPTF		(m ³ /h)	(l/min)	(m ³ /h)	(l/min)	(m ³ /h)	(l/min)	(m ³ /h)	(l/min)				
U - Universal													
3/4	20	8,0	133	7,4	123	8,1	136	7,7	129	100	X39843469700100	398 DN20 3/2 PN40 T100	



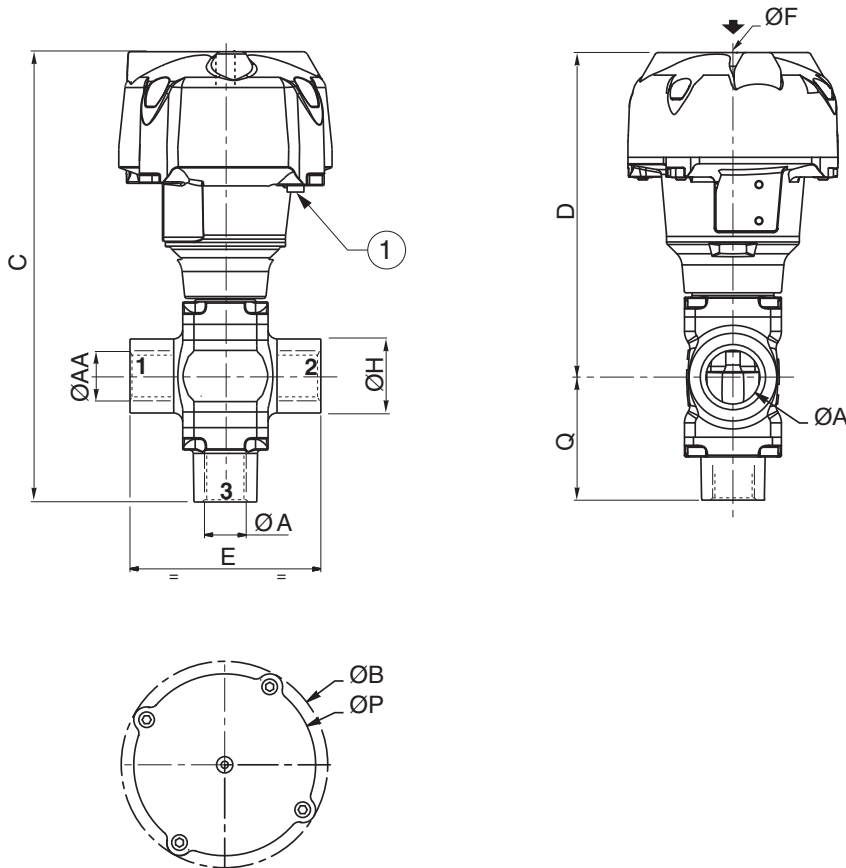
OPTIONS AND ACCESSORIES

- Other pipe connections are available on request

INSTALLATION

- The valves can be mounted in any position without affecting operation
- Compatible with ASTM 1, 2 and 3 oils
- Pipe connection (ØF) has standard thread according to ISO 228/1 and ISO 7/1

DIMENSIONS (mm), WEIGHT (kg)



① Optical position indicator

DN	operator diameter	ØA	ØAA	ØB	C	D	E	ØF	ØH	ØP	Q	weight
20	100	20	3/4 NPTF	132,5	229,2	170,9	110	1/8 NPT	40	117	58,3	3,52

DESCRIPTION

- Solenoid valves with explosionproof operator MB type for use in potentially explosive atmospheres according to ATEX Directive 2014/34/EU
EC type examination certificate no.: **LCIE 03 ATEX 6059 X**
IECEX Certificate of Conformity no.: **IECEX LCI 09.0001X**
- Compliance with EU
- Fluid: Dry air or filtered air

SOLENOID OPERATOR CONSTRUCTION

Solenoid operator housing Aluminium

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals FPM

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Electrical connection Cable gland ATEX (cable Ø8,5 to Ø16 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)	safety code
	hot	cold				
48 VDC	11	13	H	IP65	-10 to +50	Ex d IIC T5 Gb Ex tb IIIC T100°C Db IP65
125 VDC	14	16				

SPECIFICATIONS

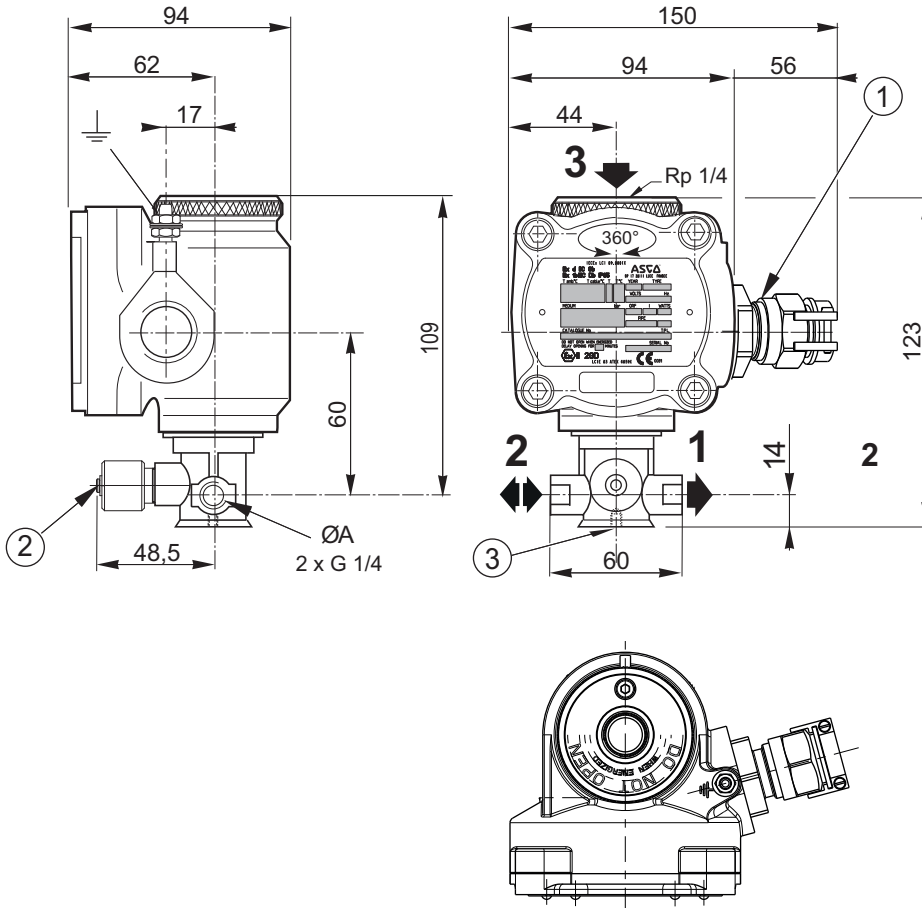
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G	(mm)							
1/4	3	16	260	250	0	8	12102026.48/DC 12102026.125/DC	MB301 F 3 - ATEX



INSTALLATION

- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- 1/4 pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1. Pipe connection (G) is standard thread according to ISO 228/1
- No spare parts available

DIMENSIONS (mm), WEIGHT (kg)



weight
1,5

- ① Explosionproof cable gland, unarmoured cable, to IECEx-ATEX with clamp (catalogue number: 88200007)
- ② Manual operator location
- ③ Mounting hole M5, depth 7 mm

DESCRIPTION

- Solenoid valves with explosionproof operator MB type for use in potentially explosive atmospheres according to ATEX Directive 2014/34/EU
EC type examination certificate no.: **LCIE 03 ATEX 6059 X**
IECEX Certificate of Conformity no.: **IECEX LCI 09.0001X**
- Compliance with EU
- Fluid: Dry air or filtered air

SOLENOID OPERATOR CONSTRUCTION

Solenoid operator housing Aluminium

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals FPM

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Electrical connection Cable gland ATEX (cable Ø8,5 to Ø16 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)	safety code
	hot	cold				
48 VDC	11	13	H	IP65	-10 to +50	Ex d IIC T5 Gb Ex tb IIIC T100°C Db IP65
125 VDC	14	16				

SPECIFICATIONS

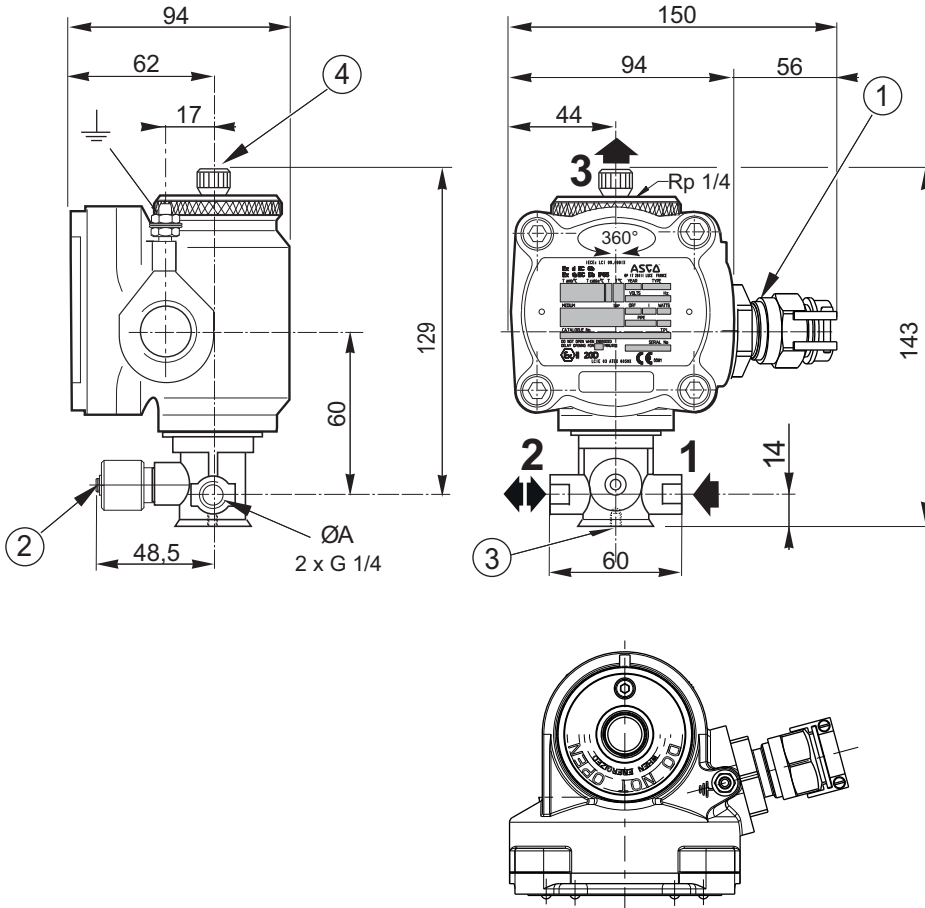
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G	(mm)			(ms)				
1/4	3	16	260	250	0	10	12102025.48/DC 12102025.125/DC	MB301 O 3 - ATEX



INSTALLATION

- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- 1/4 pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1. Pipe connection (G) is standard thread according to ISO 228/1
- No spare parts available

DIMENSIONS (mm), WEIGHT (kg)



weight
1,5

- ① Explosionproof cable gland, unarmoured cable, to IECEx-ATEX with clamp (catalogue number: 88200007)
- ② Manual operator location
- ③ Mounting hole M5, depth 7 mm
- ④ 3/2 NC: exhaust protector

QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: RCC-E + HM-63/7282-5
 - Test report: V301 - HM-63/9699
 - Quality assurance: NF EN ISO 9001 v2008
RCC-E 2012 # A5000
- EMC: EMC test specification in accordance with RCC-E 2012
 - Surge immunity test (according to EN61000-4-5)
1kV Phase to Phase - 2kV Phase to Ground
Damped sinusoidal wave (according to EN 61000-4-18):
100 KHz, 1 MHz, 3 MHz, 10 MHz; 0,5kV Phase to Phase, 1kV Phase to Ground
- Ambient temperature: Aging 40 years at 23°C
Functional +10°C to +50°C
Extreme -25°C to +70°C
Damp head 2 cycles of 24 hours (according to EN60068-2-30 variant 2)
- Functional: 20 000 cycles 0,1 Hz ON-OFF at +50°C
- Seismic: Vibration aging 2g from 10 Hz to 500 Hz during 2 hours on each axis
RCC-E Seismic component level response spectrum (up to 30g from 1 Hz to 100 Hz at 5%) ZPA: 6 g
- Fluid: Dry air or filtered air
- ATEX Directive 2014/34/EU: EC type examination certificate no.: LCIE 02 ATEX 6253 X
IECEX Certificate of Conformity no.: IECEX LCI 09.0004X



K2

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, black standard paint
Threaded base, cover & screw Cast iron, aluminium, steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Electrical connection Cable gland ATEX (cable Ø8,5 to Ø16 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)	safety code
	hot	cold				
48 VDC	32	36	H	IP65	+5 to +50	Ex d IIC T5 Gb Ex tb IIIC T100°C Db IP65
125 VDC	39	44				

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SPECIFICATIONS

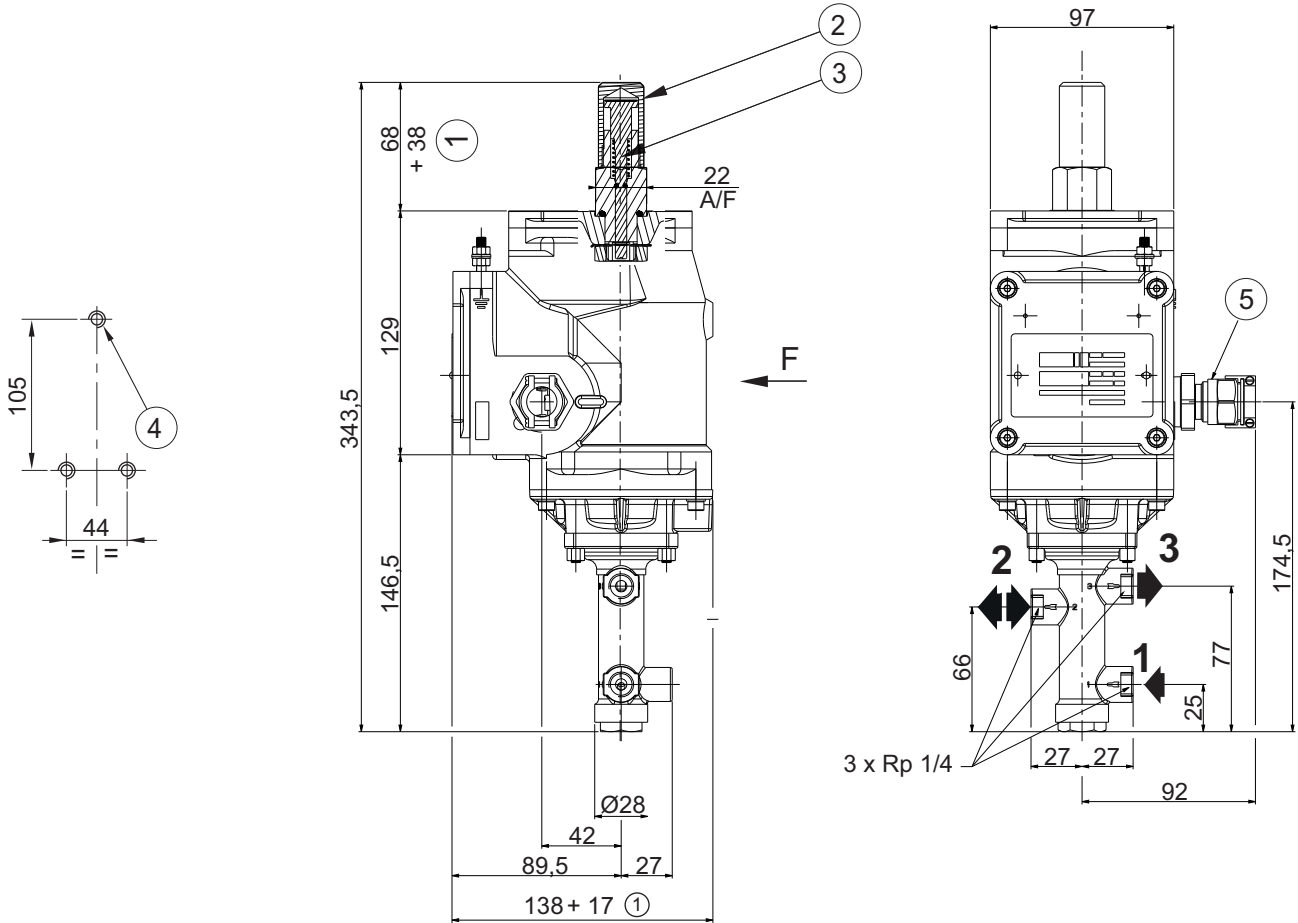
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)	(m³/h)	(l/min)	(ms)	min.	max.		
1/4	5	27,4	450	500	0	10	X131508749001H9	V301 O 5 48/DC - K2 ATEX
							X131508749002J1	V301 O 5 125/DC - K2 ATEX

ATEX

INSTALLATION

- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1
- No spare parts available

DIMENSIONS (mm), WEIGHT (kg)



weight
7,9

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ Explosionproof cable gland, unarmoured cable, to IECEx-ATEX with clamp (catalogue number: 88200007)

DESCRIPTION

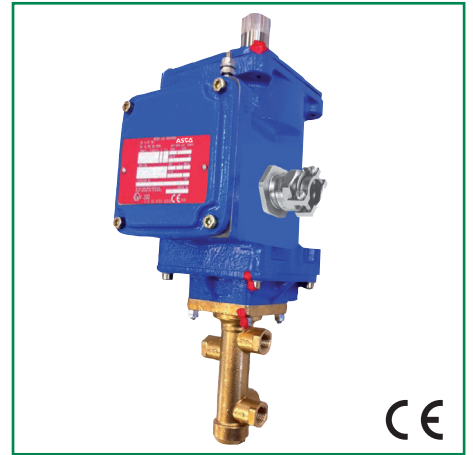
- Solenoid valve with flameproof operator type V for use in potentially explosive atmospheres, EC type examination according to ATEX Directive 2014/34/EU
EC type examination certificate no.: **LCIE 02 ATEX 6253 X**
IECEX Certificate of Conformity no.: **IECEX LCI 09.0004X**
- Compliance with EU
- Fluid: Dry air or filtered air

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, blue decontaminable paint
Threaded base, cover & screw Cast iron, aluminium, steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®



ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Electrical connection Cable gland ATEX (cable Ø 13,5 to 21 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)	safety code
	hot	cold				
48 VDC	32	36	H	IP65	-10 to +50	Ex d IIC T5 Gb Ex tb IIIC T100°C Db IP65
125 VDC	39	44				

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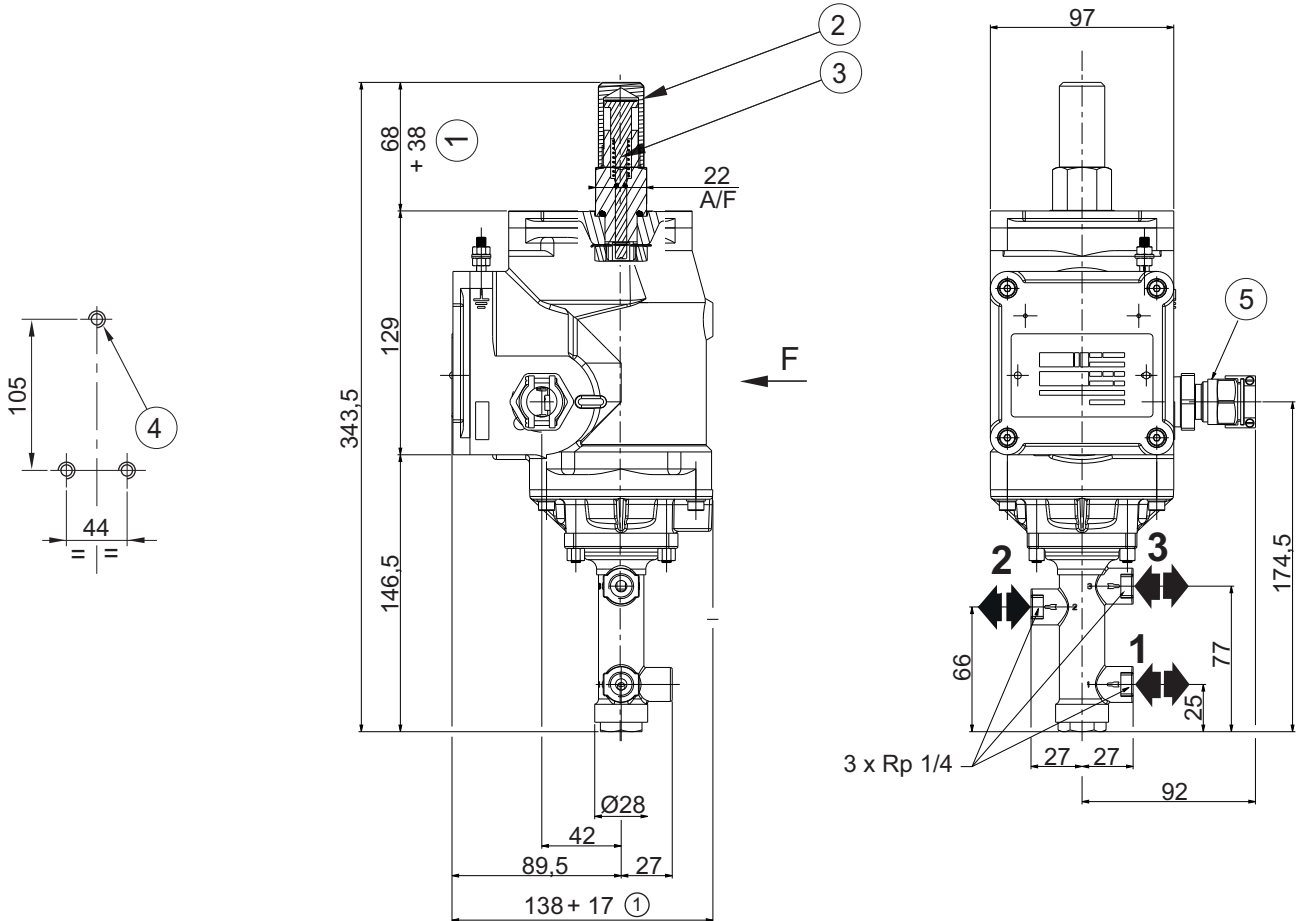
SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)							
1/4	4	19,2	320	500	0	10	13102121.48/DC	V301 U 5 48/DC - ATEX
							13102121.125DC	V301 U 5 125/DC - ATEX

INSTALLATION

- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1
- No spare parts available

DIMENSIONS (mm), WEIGHT (kg)



weight
7,9

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ Explosionproof cable gland, unarmoured cable, to IECEx-ATEX with clamp

DESCRIPTION

- Solenoid valve with flameproof operator type V for use in potentially explosive atmospheres, EC type examination according to ATEX Directive 2014/34/EU
EC type examination certificate no.: **LCIE 02 ATEX 6253 X**
IECEX Certificate of Conformity no.: **IECEX LCI 09.0004X**
- Compliance with UE
- Fluid: Dry air or filtered air

SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, black standard paint
Threaded base, cover & screw Cast iron, aluminium, steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals NBR

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil connection Screw terminals
Coil protection Unidirectional diode
Electrical connection Cable gland ATEX (cable Ø8,5 to Ø16 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)	safety code
	hot	cold				
48 VDC	32	36	H	IP65	-10 to +50	Ex d IIC T5 Gb Ex t IIIC T100°C Db IP65
125 VDC	39	44				

VAMAC® is a registered trademark of Dupont Performance Elastomers

SPECIFICATIONS

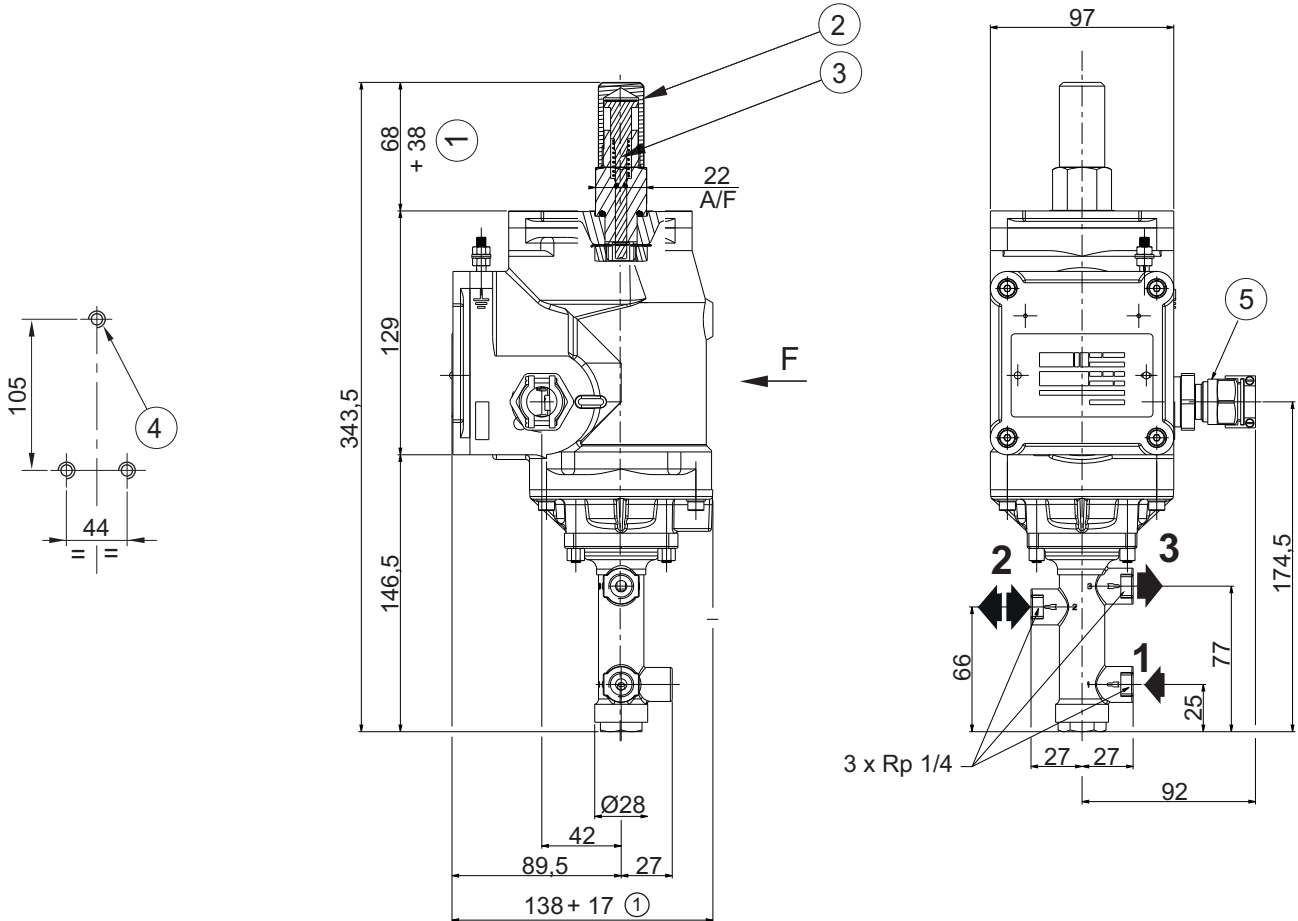
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
Rp	(mm)							
1/4	5	27,4	450	500	0	10	13102116.48/DC	V301 O 5 48/DC - ATEX
							13102116.125DC	V301 O 5 125/DC - ATEX



INSTALLATION

- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Do not power on unless the metal cover is properly in place
- Solenoid valves have 3 mounting holes in body
- Pipe connection (Rp) is standard thread according to ISO 7/1
- No spare parts available

DIMENSIONS (mm), WEIGHT (kg)



weight
7,9

- ① Dimension to be added to allow for removal
- ② Cover for manual operator
- ③ Manual operator location
- ④ 3 mounting holes M6, depth 9 mm
- ⑤ Explosionproof cable gland, unarmoured cable, to IECEx-ATEX with clamp (catalogue number: 88200007)

DESCRIPTION

- Solenoid valves with explosionproof operator MB type for use in potentially explosive atmospheres according to ATEX Directive 2014/34/EU
EC type examination certificate no.: **LCIE 03 ATEX 6059 X**
IECEX Certificate of Conformity no.: **IECEX LCI 09.0001X**
- Compliance with EU
- Fluid: Dry air or filtered air

SOLENOID OPERATOR CONSTRUCTION

Solenoid operator housing Aluminium
Threaded base, cover & screw Aluminium, steel

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals NBR, FPM, VMQ

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Coil protection Unidirectional diode
Electrical connection Cable gland ATEX (cable Ø8,5 to Ø16 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)	safety code
	hot	cold				
48 VDC	32	36	H	IP65	-10 to +50	Ex d IIC T5 Gb Ex tb IIIC T100°C Db IP65
125 VDC	39	44				

SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.)	operating pressure differential (bar)		catalogue number	reference
		1 → 2		2 → 3			min.	max.		
G	(mm)	(m³/h)	(l/min)	(m³/h)	(l/min)	(ms)				
3/8	9	80,6	1345	76	1270	500	3	10	23100261.48/DC	MT302 D ⁽¹⁾ .48/DC - ATEX
									23100261.125/DC	MT302 D ⁽¹⁾ .125/DC - ATEX

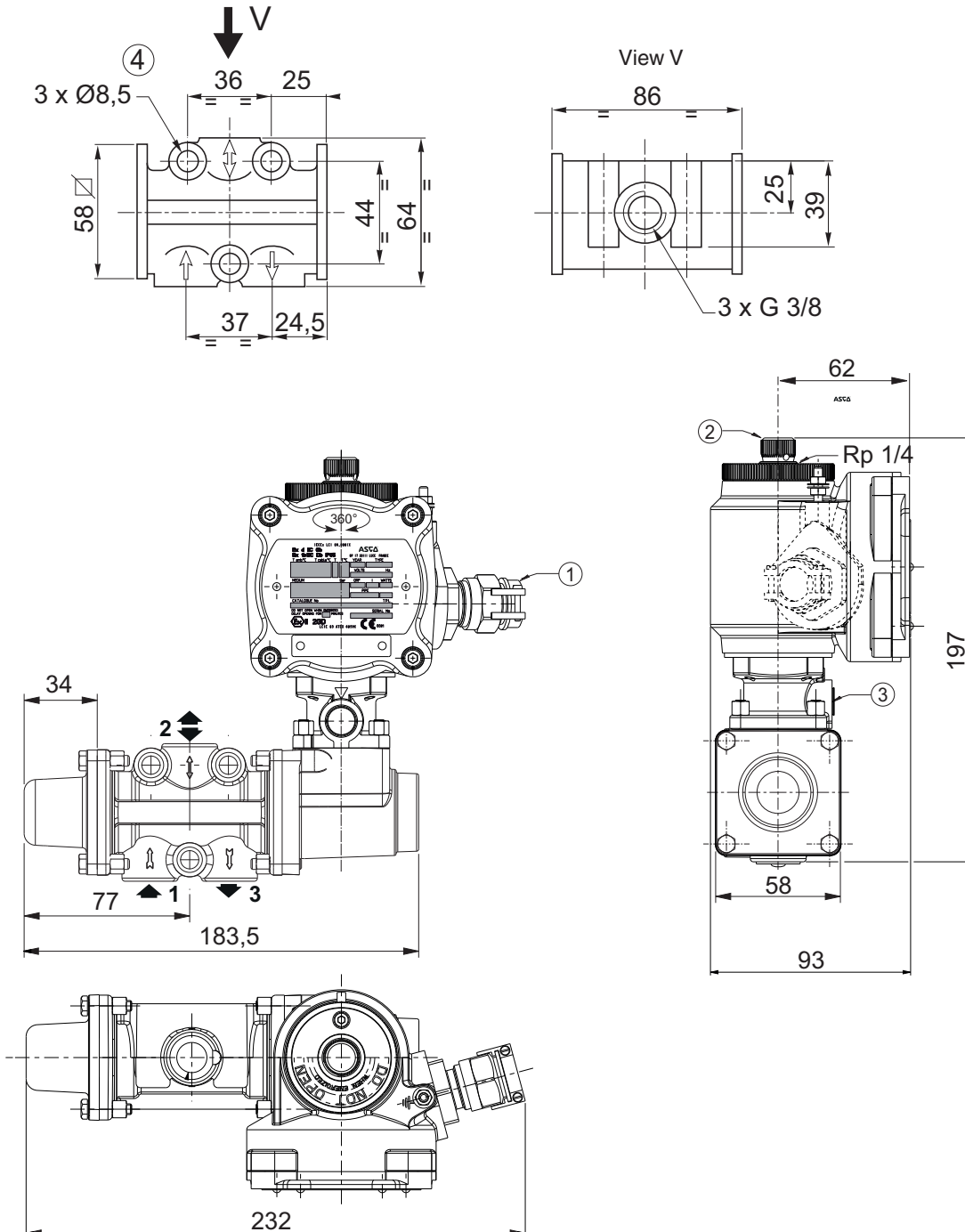
⁽¹⁾ D = Direct supply.



INSTALLATION

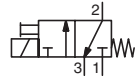
- The valve must be installed with the spool in horizontal position
- Do not power on unless the metal cover is properly in place
- Pipe connection (G) is standard thread according to ISO 228/1. Pipe connection (Rp) is standard thread according to ISO 7/1
- No spare parts available

DIMENSIONS (mm), WEIGHT (kg)



weight
2,7

- ① Explosionproof cable gland, unarmoured cable, to IECEx-ATEX with clamp (catalogue number: 88200007)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: I-EEE 323 (1974), 344 (1975), 382 (1972) A28921/N0
 - Test report: 1EA: DMA.AV.ja no. 2.418.8/1845 RSQ 31.01
 - Quality assurance: 10CFR50 appendix B NF EN ISO 9001-2008 RCC-E 2012 # A5000
- Ambient temperature: Aging 15 years at 50°C
- Functional: 10 000 cycles ON-OFF
- Radiation: Aging 50 Mrad Accident 150 Mrad
- Seismic: Vibration aging 1 g from 10 Hz to 500 Hz, 1 hour on each axis
Seismic and aircraft crash: up to 6g from 1 Hz to 100 Hz
- LOCA - Accident: 2 peaks at 10 bar, 180°C
Post-accident aging: 100°C during 274h
- Fluid: Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, orange painting

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings		coil insulation class	type of protection	temperature range (C°)
	(W)				
	hot	cold			
110 VDC	14	16	H	IP65	-10 to +50

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SPECIFICATIONS

pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)		response time (max.)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
G ⁽¹⁾ 1/4	(mm) 3	16	260	250	0	10	12102054.110/DC	MB301 O 3 - 1EA

⁽¹⁾ Port 3: G 1/4

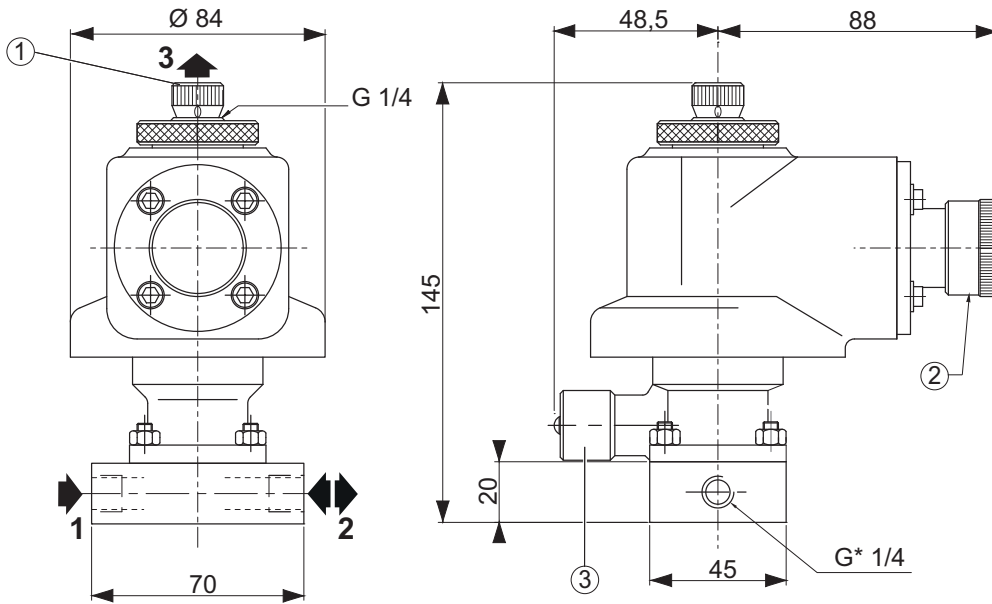
SUBBASE (BRASS)

pipe size	designation	composition	catalogue number
G* 1/4	laterally-connected joinable subbase		36100001

INSTALLATION

- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Solenoid valves have 4 mounting holes in body
- 1/4 pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1. Pipe connection (G) is standard thread according to ISO 228/1

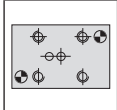
DIMENSIONS (mm), WEIGHT (kg)



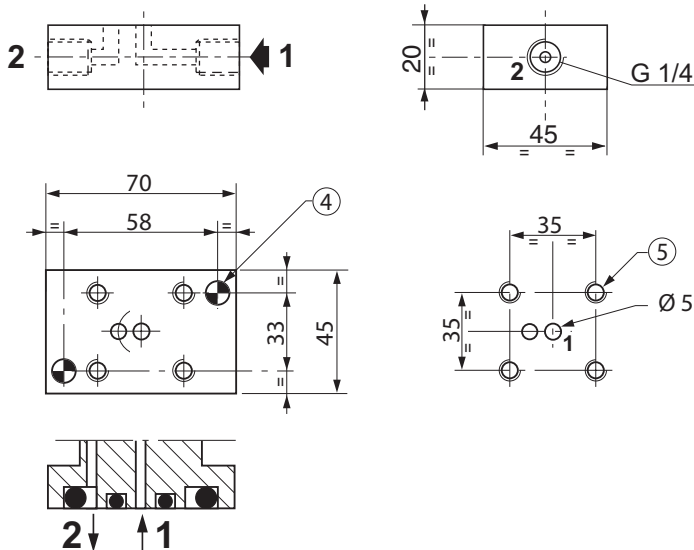
- ① 3/2 NC: exhaust protector
- ② QDC: Quick Disconnect Connector, 8NA 4G 12 12
- ③ Manual operator location
- ④ 2 mounting hole 5,5 mm dia.
- ⑤ 4 mounting hole M5, depth 12 mm

SUBBASE MOUNTING PATTERN

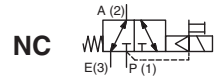
Brass
2 x G* 1/4
(0,47 kg)



36100001

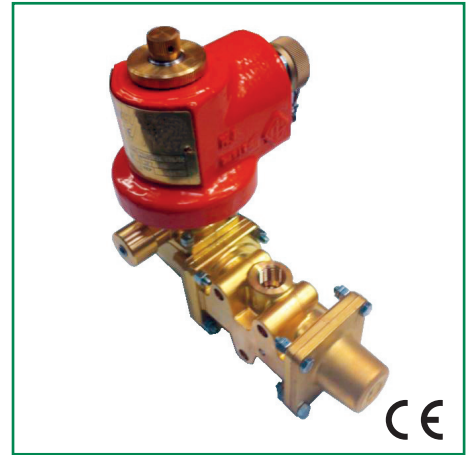


weight
3



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: I-EEE 323 (1974), 344 (1975), 382 (1972) A28921/N0
 - Test report: 1EA: DMA.AV.ja no. 2.418.8/1845 RSQ 31.01
 - Quality assurance: 10CFR50 appendix B NF EN ISO 9001-2008 RCC-E 2012 # A5000
- Ambient temperature: Aging 15 years at 50°C
- Functional: 10 000 cycles ON-OFF
- Radiation: Aging 50 Mrad Accident 150 Mrad
- Seismic: Vibration aging 1 g from 10 Hz to 500 Hz, 1 hour on each axis
Seismic and aircraft crash: up to 6g from 1 Hz to 100 Hz
- LOCA - Accident: 2 peaks at 10 bar, 180°C
Post-accident aging: 100°C during 274h
- Fluid: Dry air or filtered air



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Cast iron, orange painting

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Cable entry Quick Disconnect Connector (QDC)

voltage (-20% +10%)	power ratings		coil insulation class	type of protection	temperature range (C°)
	(W)				
	hot	cold			
110 VDC	14	16	H	IP65	-10 to +50

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SPECIFICATIONS

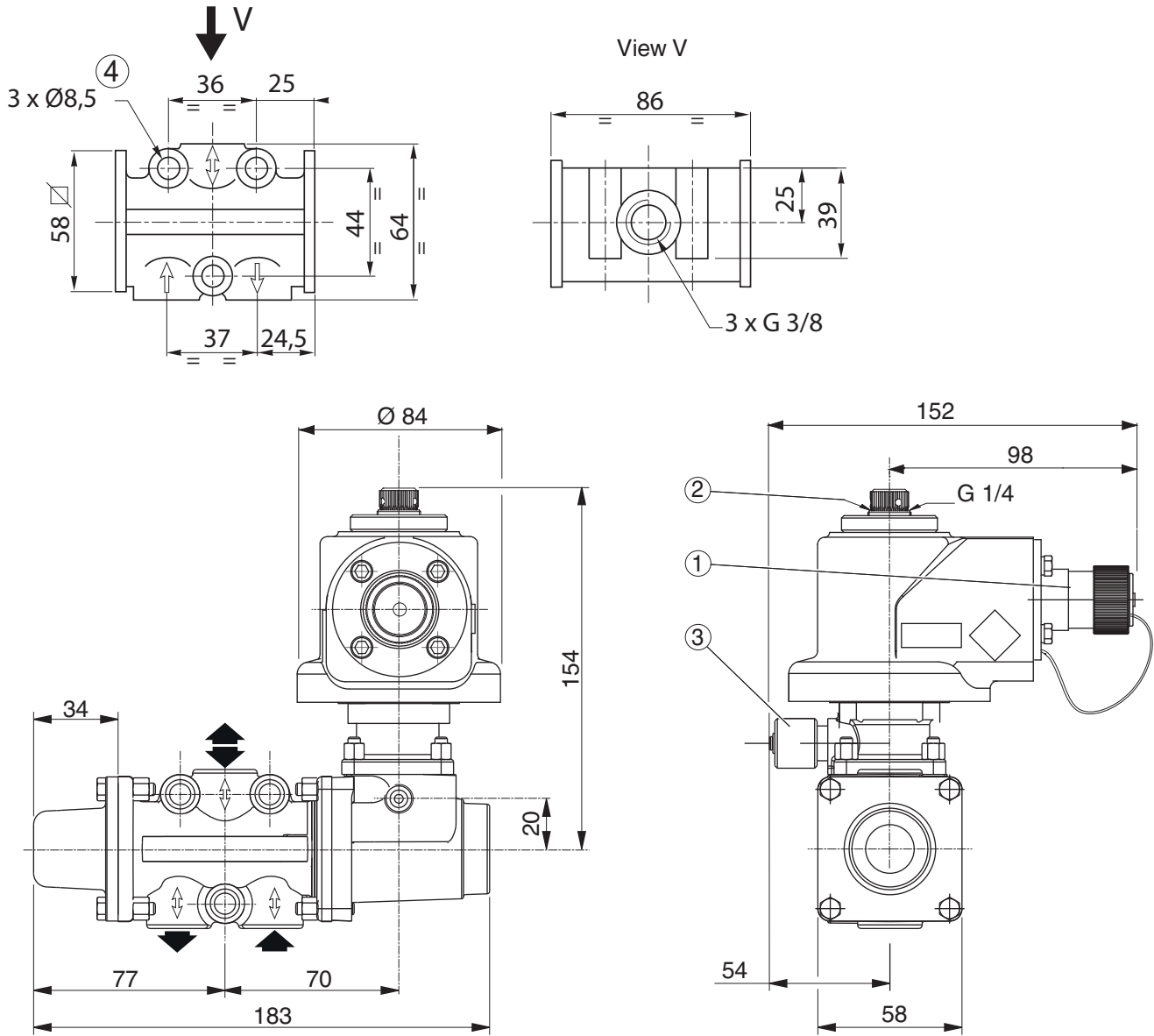
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.)	operating pressure differential (bar)		catalogue number	reference
		1 → 2		2 → 3			min.	max.		
		(m³/h)	(l/min)	(m³/h)	(l/min)					
G	(mm)	80,6	1345	76	1270	500	3	10	23102049.110/DC	MT302 D ⁽¹⁾ - 1EA

(1) Port 3: G 1/4

INSTALLATION

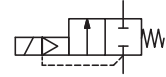
- The valve must be installed with the spool in horizontal position.
- Pipe connection (G) is standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)



weight
5

- ① QDC: Quick Disconnect Connector (DEUTSCH DCIHN)
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 8,5 mm dia.



QUALIFICATION DESCRIPTION

- Solenoid valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: I-EEE 323 (2003), 344 (2004), 382 (2006) 504943
 - Test report: 511171
 - Quality assurance: 10CFR50 appendix B
NF EN ISO 9001-2008
SGAQ DIN/DPN/DNC no. 2013-03 EDF
- Ambient temperature: Aging > 30 years at 25°C
- Functional: 1500 cycles ON-OFF
- Seismic: Seismic and aircraft crash: up to 4g from 1 Hz to 100 Hz
Response spectrum (2%) ZPA ≈ 1 g
- Fluid: Fuel



SOLENOID OPERATOR CONSTRUCTION

Solenoid housing Stainless steel

MATERIALS IN CONTACT WITH FLUID

Body Brass, stainless steel
Internal parts & springs Stainless steel
Diaphragm & Seals FPM

ELECTRICAL CHARACTERISTICS

Electrical safety IEC 335
Electrical connection Cable gland (cable Ø7 - 12 mm)

voltage (-20% +10%)	power ratings (W)		coil insulation class	type of protection	temperature range (C°)
	hot	cold			
48 VDC	13,2	9,8	H	IP65	+10 to +45

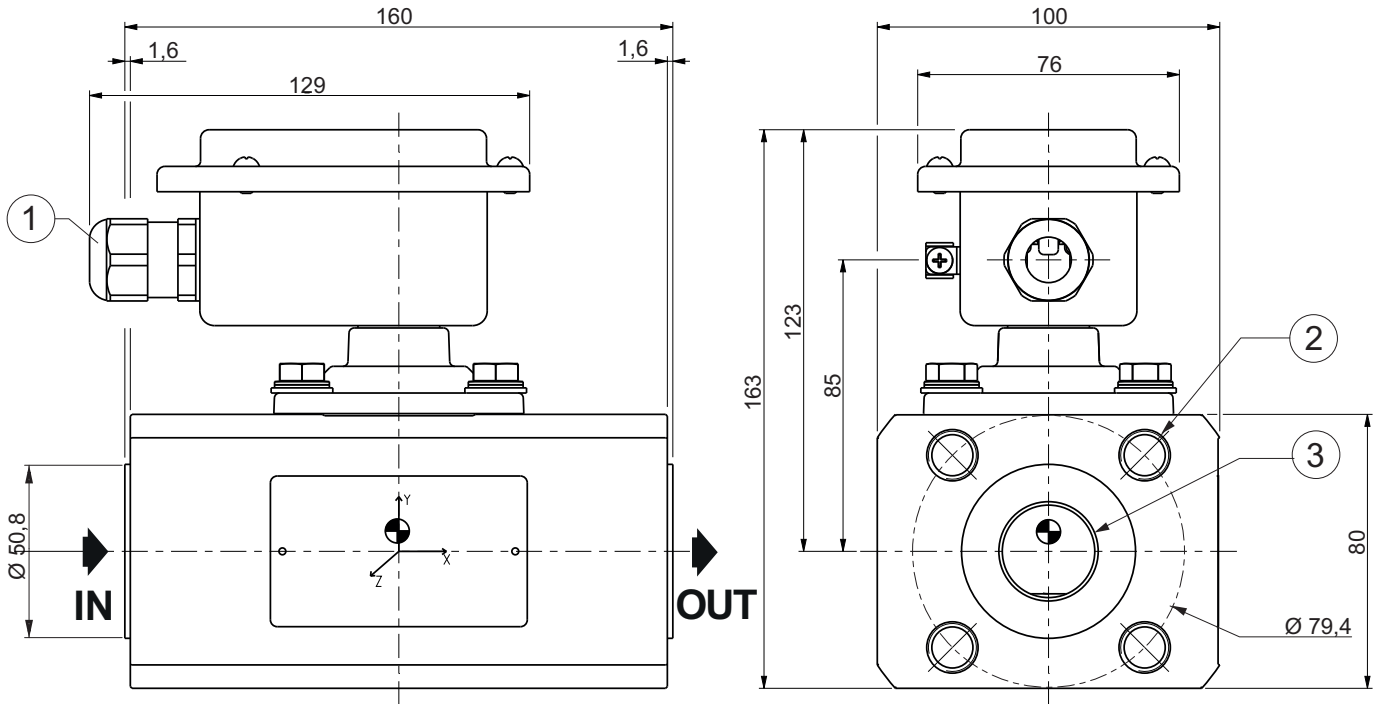
SPECIFICATIONS

pipe size	orifice size (mm)	rated flow (5 bar) 1 → 2		response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		(m³/h)	(l/min)		min.	max.		
		flanges	25		9,96	166		

INSTALLATION

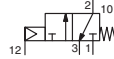
- The solenoid valve must always be installed with body vertical and solenoid operator upward
- Spare parts kits available: Contact us

DIMENSIONS (mm), WEIGHT (kg)



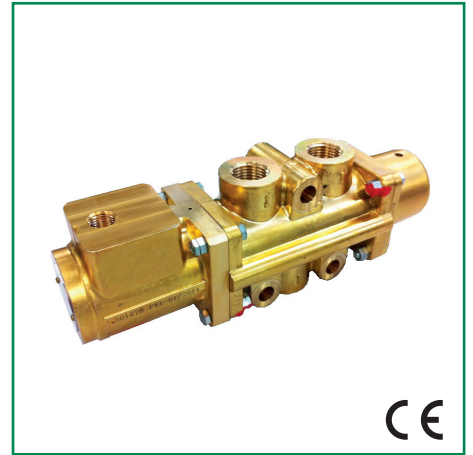
weight
9.3

- ① Cable gland (cable Ø7 - 12 mm)
- ② 2 x 4 holes, thread M14, deep 20 mm
- ③ 2 x 27 mm diam.



QUALIFICATION DESCRIPTION

- Valve that meets the nuclear power station requirements and qualified according to:
 - Test requirements: I-EEE 323 (2003), 344 (2004), 382 (2006)
 - Test report: 1EA: DMA.AV.ja no. 2.418.8/1845 503166
 - Quality assurance: 10CFR50 appendix B
NF EN ISO 9001-2008
RCC-E 2012 # A5000
- Ambient temperature: Aging 15 years at 50°C
- Functional: 10 000 cycles ON-OFF
- Radiation: Aging 50 Mrad
Accident 150 Mrad
- Seismic: Vibration aging 1 g from 10 Hz to 500 Hz, 1 hour on each axis
Seismic and aircraft crash: up to 6g from 1 Hz to 100 Hz
- LOCA - Accident: 2 peaks at 10 bar, 180°C
Post-accident aging: 100°C during 274h
- Fluid: Dry air or filtered air



GENERAL

Differential pressure 0 to 10 bar [1bar = 100 kPa]
Pilot pressure 3 to 10 bar

MATERIALS IN CONTACT WITH FLUID

Body Brass
Internal parts & springs Stainless steel
Seals VAMAC®

SPECIFICATIONS

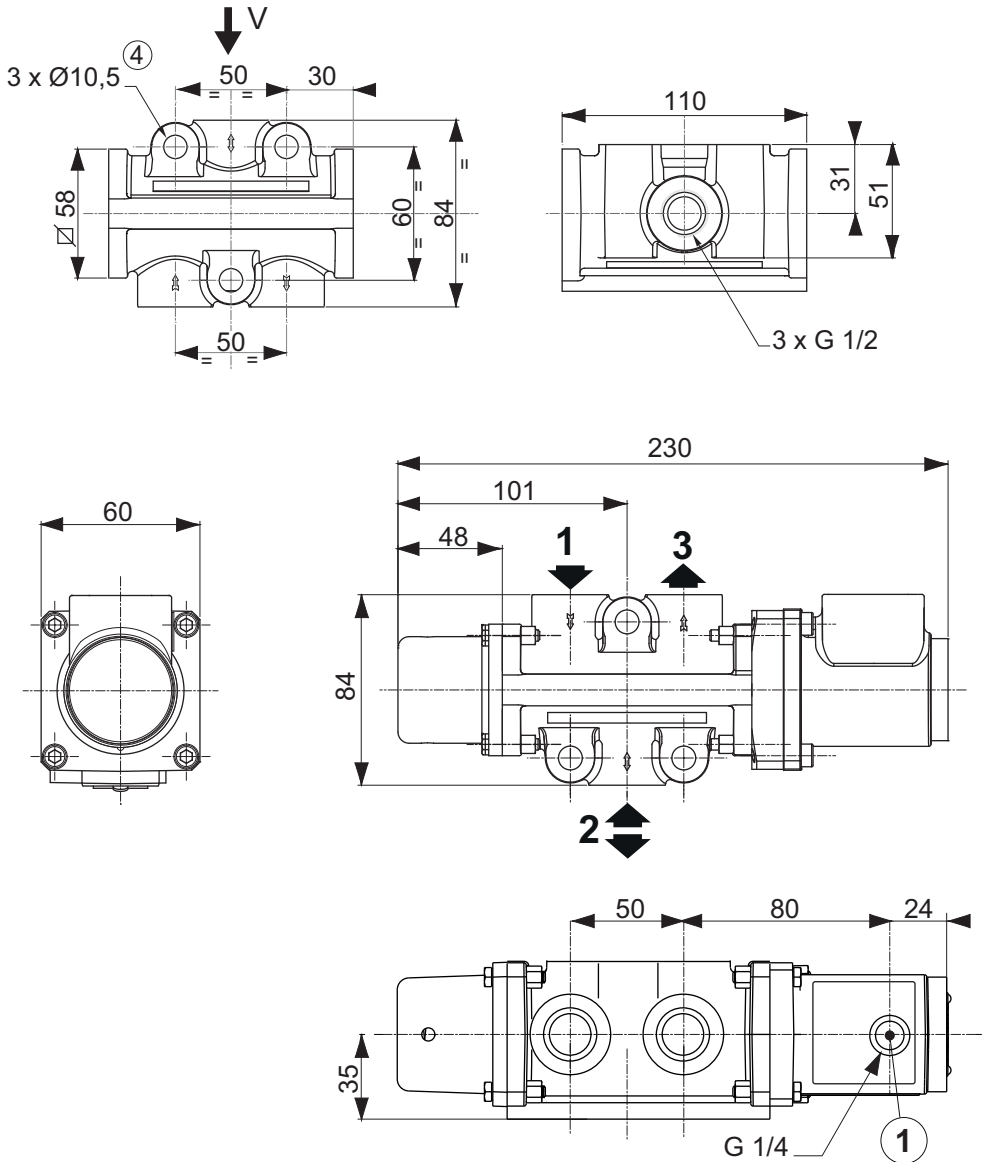
pipe size	orifice size	rated flow (ΔP 1 bar at 6,3 bar)				response time (max.) (ms)	operating pressure differential (bar)		catalogue number	reference
		1 → 2		2 → 3			min.	max.		
G	(mm)	(m ³ /h)	(l/min)	(m ³ /h)	(l/min)					
1/2	15	-	4500	-	4000	500	0	10	X23150173200100	T303 RH 1EA

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INSTALLATION

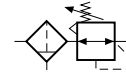
- The valve must be installed with the spool in horizontal position.
- Pipe connection (G) is standard thread according to ISO 228/1

DIMENSIONS (mm), WEIGHT (kg)



weight
4,2

- ① QDC: Quick Disconnect Connector
- ② 3/2 NC: exhaust protector
- ③ Manual operator location
- ④ 3 mounting holes 10,5 mm dia.



FEATURES

- Stainless Steel Filter, Regulator and Filter Regulator intended for corrosive environment and suitable for use in potentially explosive atmosphere caused by gases, vapours, mists and / or dust according to new **ATEX directive 2014/34/EU**.
- SAFETY CODE:**
II 2GD IIC T100°C (T5), with 90°C ambient temperature
II 2GD IIC T85°C (T6), with 75°C ambient temperature
(ZONE 1-21) Explosion group IIC
- CU-TR certified for potentially explosive atmospheres
- Functional Safety: IEC 61508, SIL certified
- Comply with the European Essential Health and Safety Requirements **(EN13643-1)**
- All internal metal parts made of 316 / 316L stainless steel
- Built-in overpressure relieving function, non-relieving option available
- 316L Stainless Steel body, bonnet and bowl
- Internal springs made of INCONEL® to suit sour gas environment complying to NACE MR0175 / ISO 15156 ⁽¹⁾

⁽¹⁾ Only available for High Flow SSFR as an option
INCONEL® is trademark of the Special Metals Corporation group of companies

BENEFITS

- Precise tuning and regulation - using dual spring design ⁽²⁾
- Improved regulation accuracy - with pitot tube feedback ⁽²⁾
- Effective moisture removal - using fin diverters to create centrifugal action ⁽²⁾
- Long lasting product labeling - laser etched marking on stainless steel bowl ⁽³⁾

⁽²⁾ Only available for High Flow SSFR

⁽³⁾ Only available for Compact SSFR

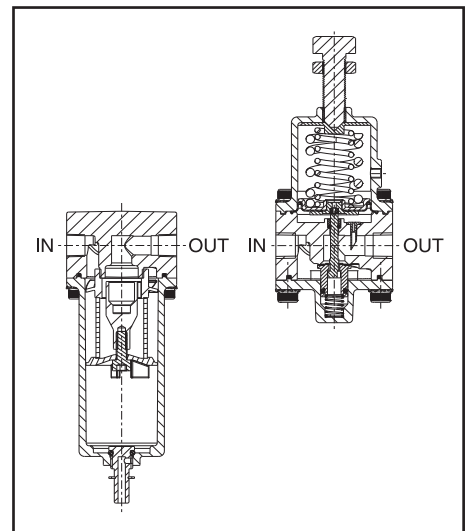
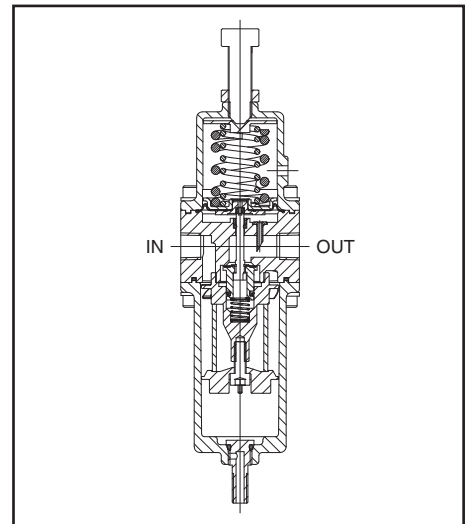
CHARACTERISTICS

	Compact	High Flow
Fluids	Compressed air, neutral gas, natural gas	Compressed air, neutral gas, natural gas & sour naturalgas
Compliance to NACE for sour Gas environment	No	Yes (as an option)
Ports	1/4	1/4 & 1/2
Threads	NPT G as an option	
Pressure range (inlet)	0 - 20 bar (Manual Drain) 2,5 - 11 bar (Auto Drain)	
Regulating pressure (outlet)	0,5 - 10 bar	
Regulation	By hexagonal head screw with locking nut	
Hysteresis	< 0,32 bar	< 0,2 bar
Filtering capacity	25 µm & 5 µm	
Operating temperature ⁽⁴⁾	-40°C to +90°C	
Low temperature option	-50°C	-60°C
Condensate Drain	Manual & Automatic	

⁽⁴⁾ Operating temperature for Automatic Drain: +0°C to +60°C

CONSTRUCTION

	Compact	High Flow
Body, bonnet & bowl	AISI 316L SS	
	Bowl capacity = 25 cm ³	Bowl capacity = 75 cm ³
Filtering element	AISI 316 SS	
Diaphragm	LT FPM	LT FPM / HNBR
Elastomers	FPM	



PRODUCT CODE

342 A 8 0 0 1 AD

Product series
342

Revision letter
A = Initial release

F/R/FR type
8 = SS Filter Regulator (FR)
9 = Filter (F) ⁽¹⁾
A = Regulator (R) ⁽¹⁾

Pressure relief / vent hole
0 = Non relief diaphragm type ⁽²⁾
2 = Ø M5 thread
4 = Ø 1/8 NPT

Certifications & approvals
0 = ATEX 1/21
1 = ATEX 1/21 + CUTR
2 = ATEX 1/21 + NACE ⁽¹⁾
3 = ATEX 1/21 + NACE + CUTR ⁽¹⁾

⁽¹⁾ Not available for Compact version
⁽²⁾ Bonnet with Ø 1/8 NPT thread

Options

AD = Automatic Drain
AN = Automatic Drain with 1/8 NPT connection
D = Right-to-left flow sense
G = 316 SS pressure gauge
LT = Low Temperature ⁽³⁾
MB = 316L SS Mounting Brackets ⁽⁴⁾

⁽³⁾ A special low temperature 316 SS pressure gauge will be delivered.
⁽⁴⁾ Not mounted onto the product

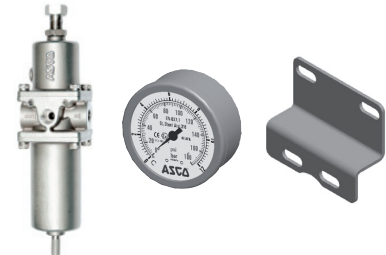
Filtration/port size

1 = High Flow 1/4 NPT 25 µm or Regulator only
2 = High Flow 1/4 G 25 µm or Regulator only
3 = High Flow 1/2 NPT 25 µm or Regulator only
4 = High Flow 1/2 G 25 µm or Regulator only
5 = High Flow 1/4 NPT 5 µm
6 = High Flow 1/4 G 5 µm
7 = High Flow 1/2 NPT 5 µm
8 = High Flow 1/2 G 5 µm
9 = Compact 1/4 NPT 25 µm
A = Compact 1/4 G 25 µm
B = Compact 1/4 NPT 5 µm
C = Compact 1/4 G 5 µm

NOTE: Please refer to our online configurator for option combinations availability


ORDERING EXAMPLE


- High-Flow stainless steel Filter Regulator (1/4" NPT, 25 µm filtration) with auto drain, pressure gauge & mounting bracket
• Product Code: 342A8201ADGMB
- Compact low temperature stainless steel Filter Regulator (1/4" NPT, 25 µm filtration) with low temperature pressure gauge & mounting bracket
• Product Code: 342A8209GLTMB




MAXIMUM FLOW VALUES

Construction Type	Maximum Flow Values Following ISO Standards 5782, 6358 and 6953	Compact		High Flow			
		l/min (ANR)					
		1/4		1/4		1/2	
		5 µm	25 µm	5 µm	25 µm	5 µm	25 µm
Filter	Inlet pressure = 6.3 bar and ΔP = 1 bar	-	-	1780	2600	1800	3300
Regulator	Inlet pressure = 10 bar, setpoint = 6.3 bar and ΔP = 1 bar	-	-	3120		7800	
Filter Regulator	Inlet pressure = 10 bar, setpoint = 6.3 bar and ΔP = 1 bar	1280	1400	2380	2450	3920	4430

AUTO DRAIN	
	
	HIGH FLOW & COMPACT SSFR
Maximum inlet pressure	11 bar
Operating pressure	2.5 - 10 bar
Operating temperature	0°C to +60°C
Metal parts	316L SS
Elastomers	FPM
Float material	Thermoplastic polymer
Adaptor (316 SS) for 1/8 NPT conversion "AN" as option	

PRESSURE GAUGE		
		
	HIGH FLOW SSFR	COMPACT SSFR
Pressure	0 - 12 bar	0 - 10 bar
Diameter	Ø 63 mm	Ø 50 mm
Gauge port size	1/4" NPT	1/8" NPT
Material	316 Stainless Steel	
Protection	IP65; Safety glass; Fixed crimped case to avoid accidental dismounting	
Part number	C325316	C325937
Part number Low Temp. option	C325667	C325938

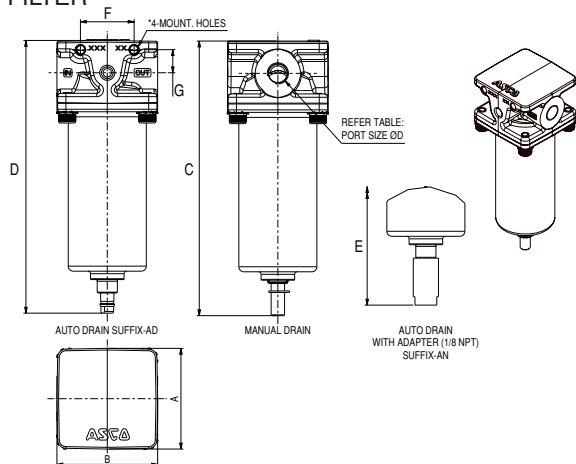
MOUNTING BRACKET		
		
	HIGH FLOW SSFR	COMPACT SSFR
Material	316L Stainless Steel	
Part number	C117813	C117877

INSTALLATION

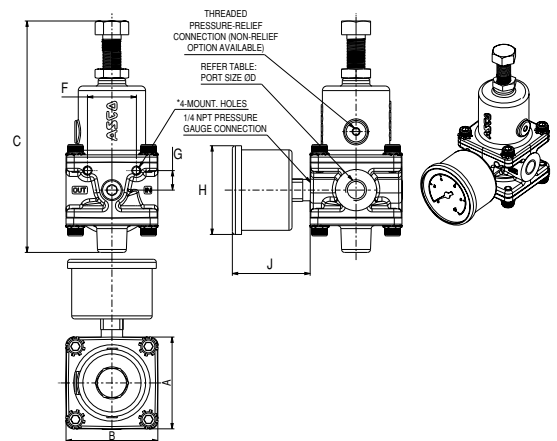
- Installation / Maintenance instructions are included with each Filter/Regulator
- Air flow direction indicated by IN/OUT as well as inlet & outlet indicators
- Pipe connection has standard thread according to NPT (ANSI 1.20.3)

DIMENSIONS(mm), WEIGHT(kg)

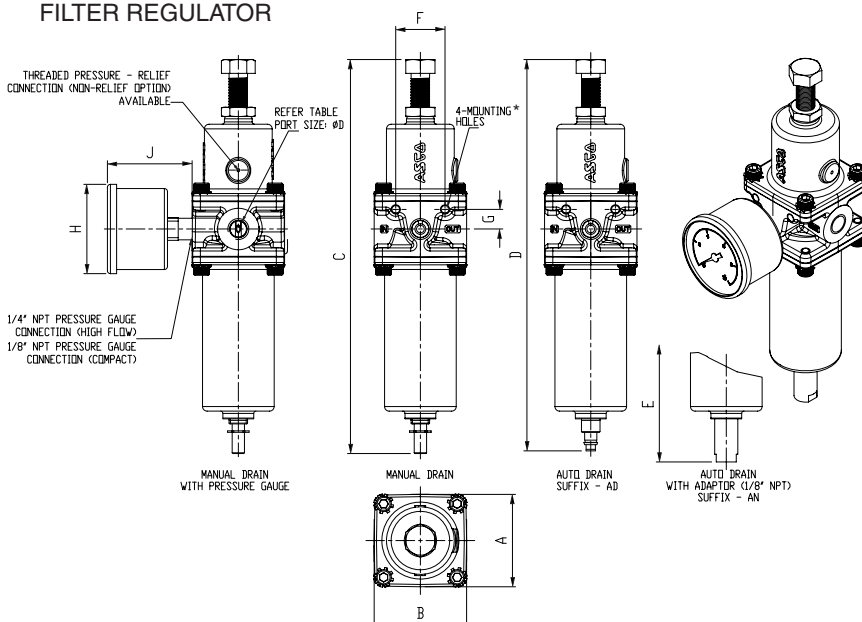
FILTER



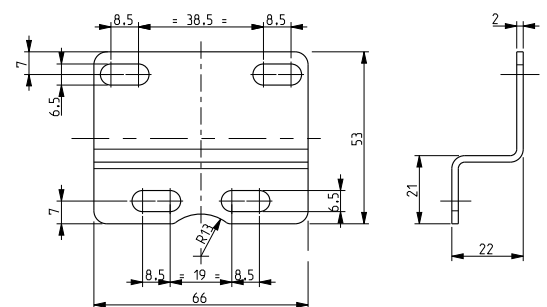
REGULATOR



FILTER REGULATOR



MOUNTING BRACKET



*Note: Mounting hole size M6 for Hi-Flow SSFR and mounting hole size M5 for Compact SSFR

All leaflets are available on: www.asco.com

DIMENSIONS(mm), WEIGHT(kg)

	Type	ØD	Weight (kg)	A	B	C	D	E	F	G	H	J
		NPT										
HIGH FLOW	Filter	1/4	0,730	60	60	163,6	162,5	170,5	32	13,75	Ø67	51
		1/2			65							
	Regulator	1/4	1,232		60	151,3	-	-	32	12,75	Ø67	51
		1/2			65							
	Filter Regulator	1/4	1,980		60	256	254	261	32	12,75	Ø67	51
		1/2			65							
COMPACT	Filter Regulator	1/4	1,0	45	45	195	223	233	20	10	Ø53,5	48

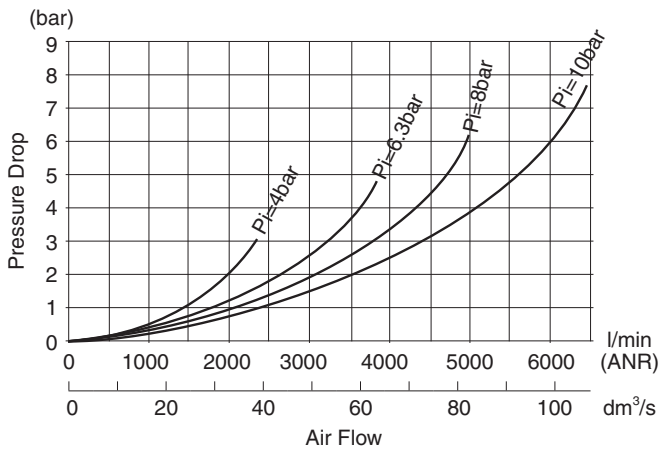
SPARE PARTS KITS

	Type	Filtering Capacity	Spare Parts Kit Number	
			Standard	Low Temp
HIGH FLOW	Filter	25 µm	C325309	
		5 µm	C325310	
	Regulator	-	C325311	C325993
		Filter Regulator	25 µm	C325305
5 µm	C325307		C325995	
COMPACT	Filter Regulator	25 µm	C325921	C325996
		5 µm	C325922	C325997

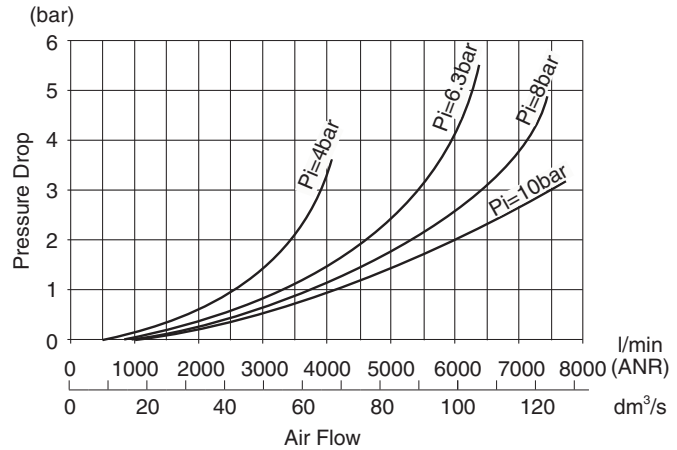
Option	Weight (kg)
Auto Drain	0,015
Adapter for Auto Drain	0,020
Pressure Gauge	0,164
Mounting Bracket	0,079

PRESSURE DROP vs. AIR FLOW CURVES

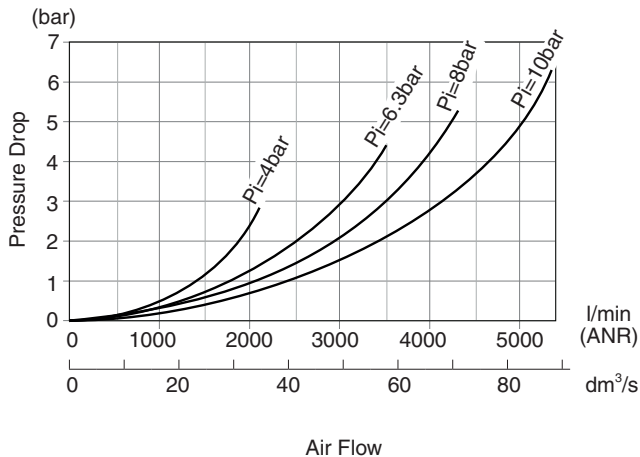
St. steel Filter 1/2 NPT Ref. : 342A9007
Filtration 5 µm with P inlet 4 - 6,3 - 8 - 10 bar



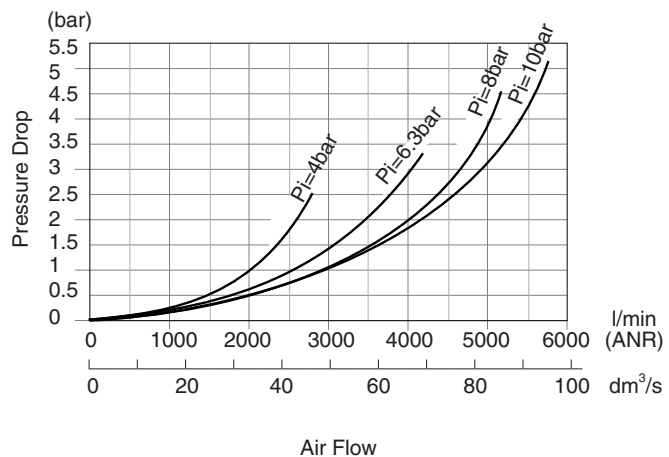
St. steel Filter 1/2 NPT Ref. : 342A9003
Filtration 25 µm with P inlet 4 - 6,3 - 8 - 10 bar



St. steel Filter 1/4 NPT Ref. : 342A9005
Filtration 5 µm with P inlet 4 - 6,3 - 8 - 10 bar

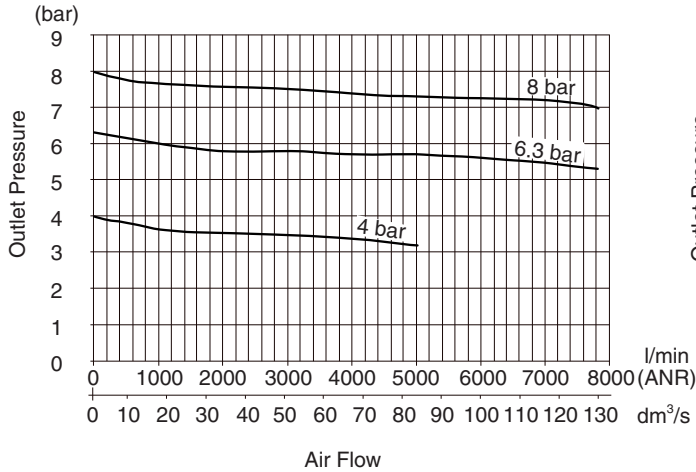


St. steel Filter 1/4 NPT Ref. : 342A9001
Filtration 25 µm with P inlet 4 - 6,3 - 8 - 10 bar

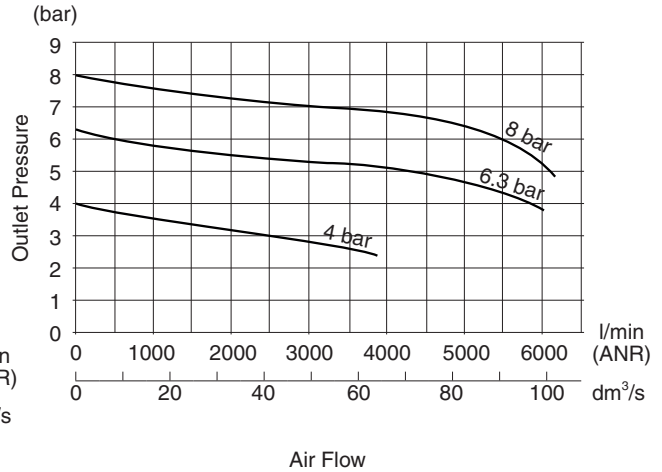


PRESSURE DROP vs. AIR FLOW CURVES

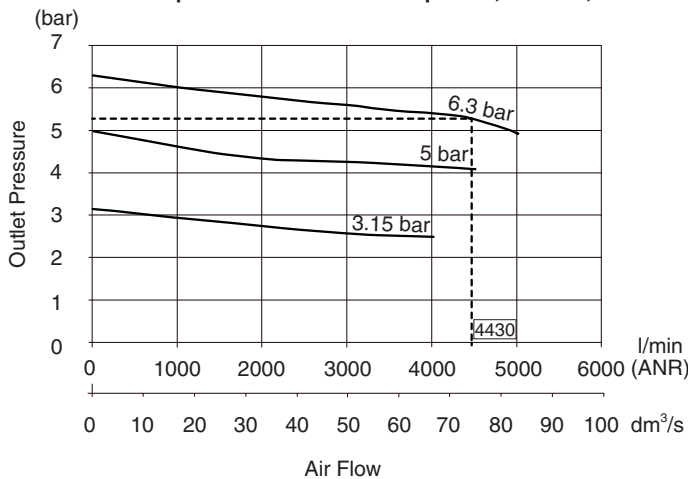
St. steel Regulator 1/2 NPT Ref. : 342AA403
P inlet 10 b - setpoint 4 - 6,3 - 8 bar



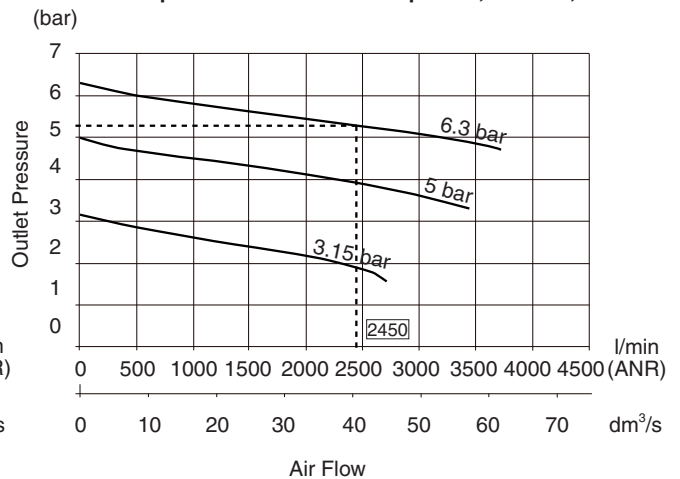
St. steel Regulator 1/4 NPT Ref. : 342AA401
P inlet 10 b - setpoint 4 - 6,3 - 8 bar



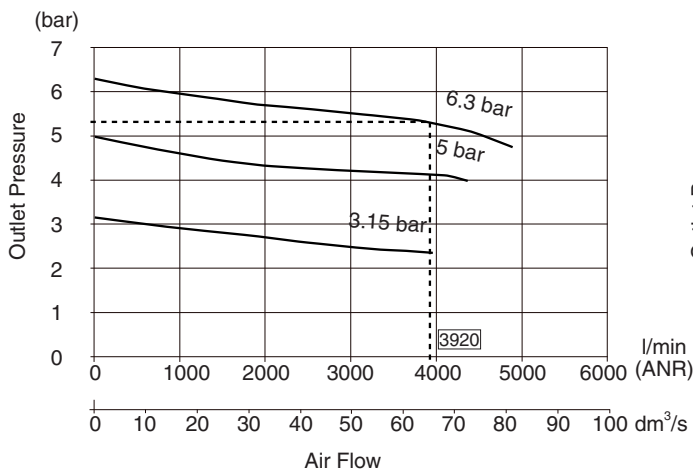
St. steel Filter Regulator 1/2 NPT Ref : 342A8203
Filtration 25 µm with P inlet 10 b - setpoint 3,15 - 5 - 6,3 bar



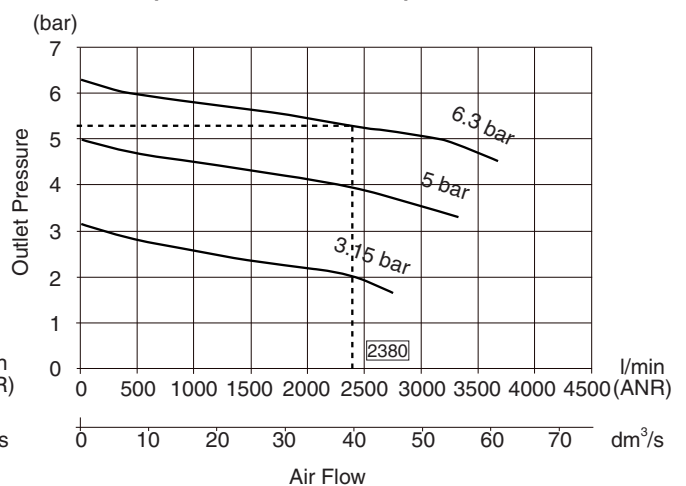
St. steel Filter Regulator 1/4 NPT Ref. : 342A8201
Filtration 25 µm with P inlet 10 b - setpoint 3,15 - 5 - 6,3 bar



St. steel Filter Regulator 1/2 NPT Ref : 342A8207
Filtration 5 µm with P inlet 10 b - setpoint 3,15 - 5 - 6,3 bar

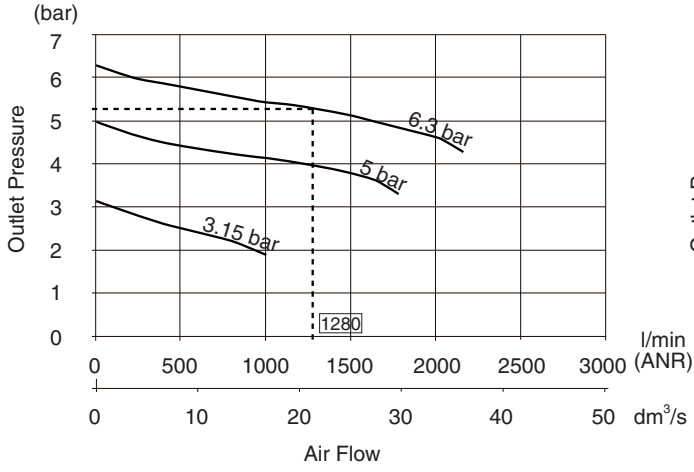


St. steel Filter Regulator 1/4 NPT Ref. : 342A8205
Filtration 5 µm with P inlet 10 b - setpoint 3,15 - 5 - 6,3 bar

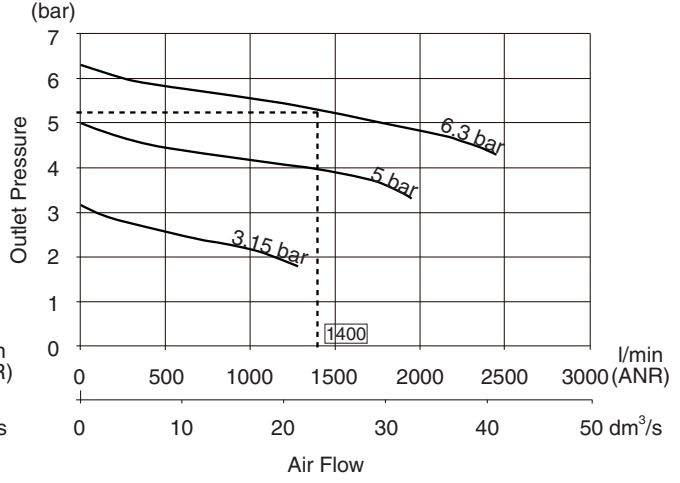


PRESSURE DROP vs. AIR FLOW CURVES

St. steel Filter Regulator 1/4 NPT Ref : 342A820B
 Filtration 5 µm with P inlet 10 b - setpoint 3.15 - 5 - 6.3 bar



St. steel Filter Regulator 1/4 NPT Ref : 342A8209
 Filtration 25 µm with P inlet 10 b - setpoint 3.15 - 5 - 6.3 bar





FEATURES

- To be mounted on the exhaust port of a solenoid valve to protect internal parts from the environment

GENERAL

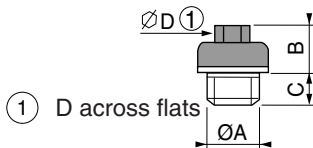
	Bronze	Stainless steel	Porous plastic
Differential pressure	0 to 10 bar	0 to 10 bar	0 to 10 bar
Fluid temperature range	-10°C to +70°C	-10°C to +70°C	-10°C to +70°C
Ambient temperature range	-10°C to +70°C	-10°C to +70°C	-10°C to +70°C
Load loss	Minimum	Minimum	Minimum
Differential pressure			
Body	Porous bronze	Sintered st. steel	Porous plastic
Connection piece	Brass	Nickel-plated brass	Plastic
Pipe size	G 1/8 or G 1/4	G-NPT 1/8 to 1/2, M5	G 1/8 to 1/2, M5



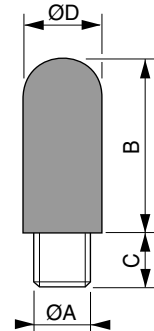
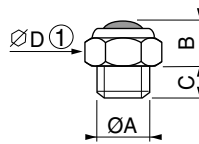
SPECIFICATIONS

pipe size	catalogue number		
	Bronze (set of 2)	Sintered st. steel	Porous plastic
G 1/8	97701875	34600418	34600406
G 1/4	97701876	34600419	34600407
G 3/8	-	34600478	34600408
G 1/2	-	34600479	34600409
M5	-	34600484	34600405
NPT 1/8	-	34600482	-
NPT 1/4	-	34600483	-
NPT 3/8	-	34600480	-
NPT 1/2	-	34600481	-

DIMENSIONS (mm), WEIGHT (kg)



① D across flats



Porous bronze (set of 2)					
catalogue number	Ø A	B	C	D	weight
97701875	1/8	7	5	7	0,004
97701876	1/4	10	6	9	0,010

Sintered st. steel					
catalogue number	Ø A	B	C	D	weight
34600418/482	1/8	10	6	13	0,006
34600419/483	1/4	11	8	16	0,010
34600478/480	3/8	11	9	19	0,014
34600479/481	1/2	14	9	24	0,023
34600484	M5	4,5	3,2	8	0,001

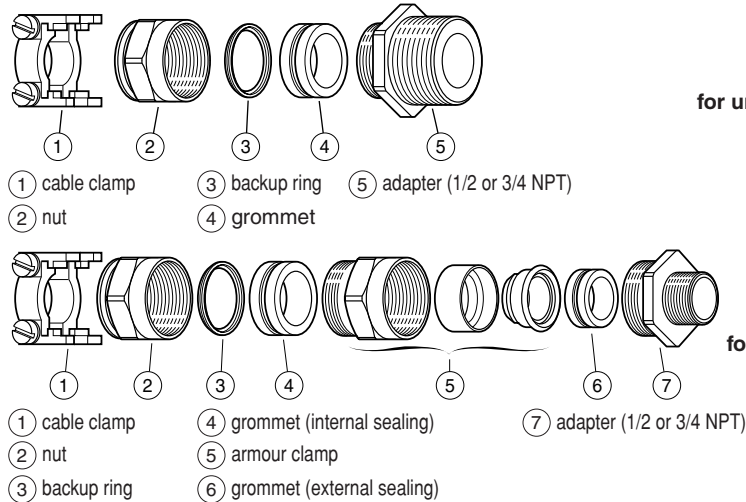
Porous plastic					
catalogue number	Ø A	B	C	D	weight
34600406	1/8	27	6	13	0,002
34600407	1/4	34	7	15	0,004
34600408	3/8	55	11	18	0,006
34600409	1/2	62	12	23	0,010
34600405	M5	16	5	7	0,0005

FEATURES

- Explosionproof material intended for use in potentially explosive atmospheres according to ATEX-Directive 2014/34/EU
 EC type examination certificate no.: **INERIS 12 ATEX 0032 X**
 IECEx Certificate of Conformity no.: **IECEx INE 12.0025 X**
- Compliance with the Essential Health and Safety Requirements has been assured by compliance with the International and European Standards EN-IEC 60079-0, EN-IEC 60079-1 and EN-IEC 60079-31
- Cable glands for armoured and unarmoured cables can be fitted to Ex d operators

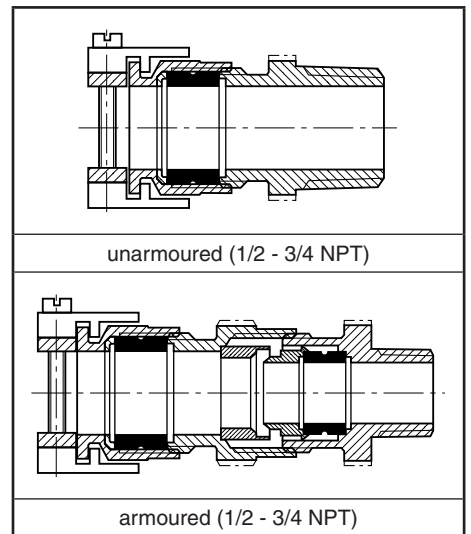
GENERAL

	1/2 NPT	3/4 NPT
Protection, unarmoured cable	IP68 (10 bar), on outer sheath	IP68 (10 bar), on outer sheath
Protection, armoured cable	IP68 (10 bar), on outer/inner sheath 0 to 1,25 mm armour O.D. 6 to 12 mm	IP68 (10 bar), on outer/inner sheath - O.D. 8,5 to 16 mm
Unarmoured cable	O.D. 6 to 12 mm	O.D. 8,5 to 16 mm
Armoured cable	O.D. 12 to 20,5 mm I.D. 6 to 12 mm	O.D. 12 to 21 mm I.D. 8,5 to 16 mm



1/2 - 3/4 NPT,
for unarmoured cable

1/2 - 3/4 NPT,
for armoured cable



CONSTRUCTION

Adapter	Nickel-plated brass
Grommet	NBR
Breaker piece	Stainless steel

SAFETY CODE

Ex II 2 G Ex d IIC
 II 2 D Ex tb IIIC

SPECIFICATIONS

pipe size	cable		type	catalogue number	
	outer diameter (mm)	inner diameter (mm)		unarmoured cable	armoured cable
1/2 NPT and 3/4 NPT versions					
1/2 NPT	-	6 to 12	01	88200011	-
	6 to 12	8,5 to 16	02	-	88200014
3/4 NPT	-	8,5 to 16	01	88200007	-
	12 to 21	12 to 20,5 8,5 to 16	01 02	88200010 -	- 88200013

ACCESSORIES

- 3/4 NPT to 1/2 NPT reducer, catalogue number: **88200012**
- Other cable glands on request

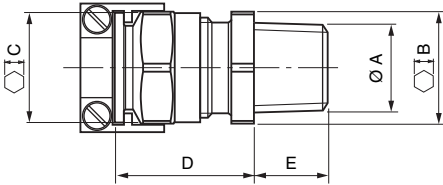
INSTALLATION

- The cable gland can be supplied pre-installed on Ex d enclosure

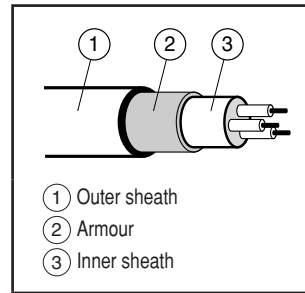
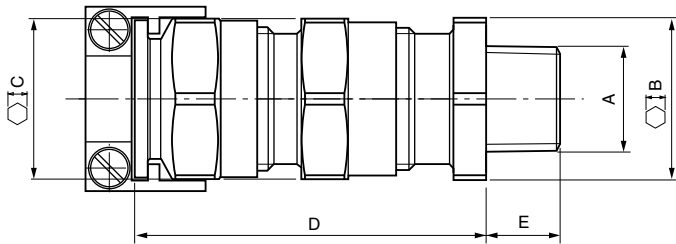
DIMENSIONS (mm), WEIGHT (kg)



TYPE 01
1/2 - 3/4 NPT
Unarmoured cable



TYPE 02
1/2 - 3/4 NPT
Armoured cable



type	Ø A	B	C	D	E	weight
01	1/2 NPT	24	19	30	16	0,04
	3/4 NPT ⁽¹⁾	30	24	33	16	0,055
	3/4 NPT ⁽²⁾	30	30	35	16	0,07
02	1/2 NPT	24	24	50	16	0,09
	3/4 NPT	30	30	54	16	0,17

⁽¹⁾ Catalogue number: 88200007

⁽²⁾ Catalogue number: 88200010

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