System 13

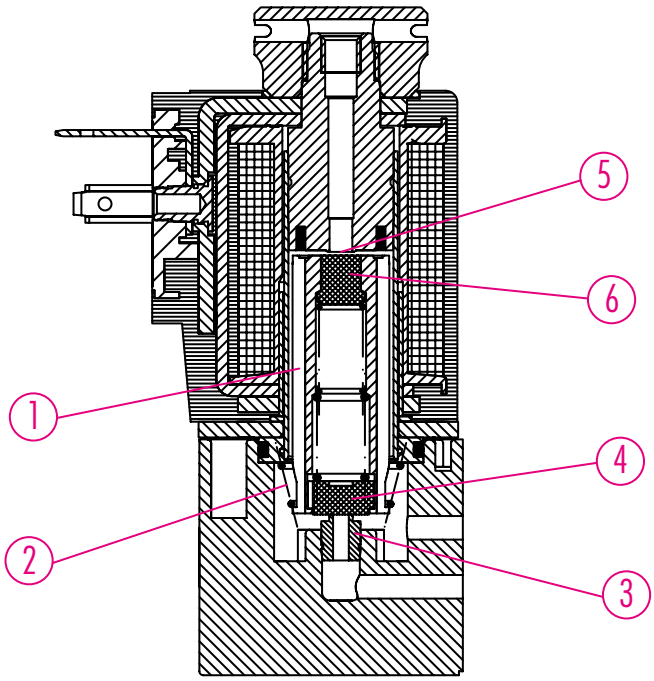
Solenoid Coils
Armature Assemblies
Valve Systems

...perfectly switched!

Nass Controls LP Nass Magnet GmbH Precision Controls Kft.

System 13

Introduction
Application of System 13 Valves
Function



Introduction

The short name "System 13" identifies a modular system of solenoid operators and solenoid valves. All valves have got a plunger diameter of 13 mm. Many years of investigation have shown that this armature assembly diameter represents the optimal value for pneumatic applications. The plunger diameter is an essential influencing factor; its optimal selection is of great technical importance. After thorough studies and testing, "System 13" has been proven perfect for pneumatic applications.

Application of System 13 Valves

The solenoid operators / solenoid valves are especially used for the actuation of 2/2 or 3/2 way seat valves in the pneumatics. The switching functions "normally closed" and "normally open" are available.
In case of 2/2 way valves nominal orifices of up to 5.5 mm at 4 bar can be reached.
For 3/2 way valves nominal orifices of up to 3.0 mm at 10 bar can be realized.
Solenoid valves / solenoid coils are also used for controlling liquid or other media.

Function of the 3/2 Way Valve, Normally Closed

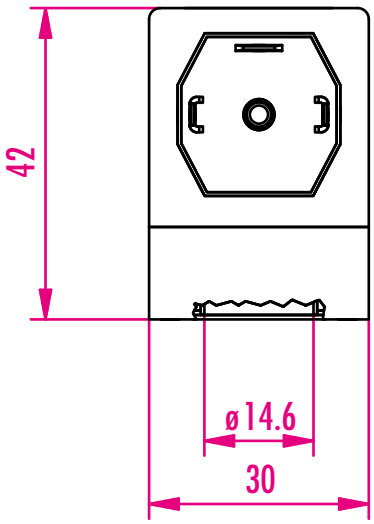
When the solenoid operator/solenoid pilot valve is in its normal, de-energized state, the reset spring (2) forces the plunger (1) down onto the valve seat (3), which is closed by the sealing element (4), and the upper valve seat (5) is open to atmosphere.

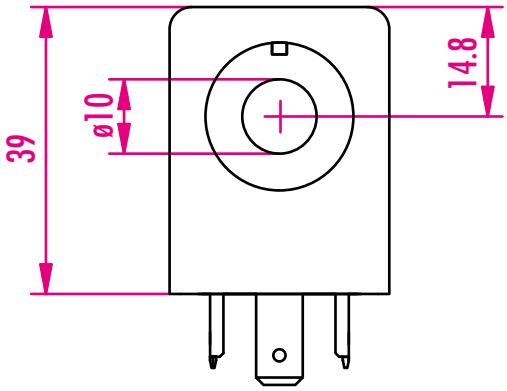
When the solenoid operator/solenoid pilot valve is energized, the plunger (1) is pulled up by the magnetic force, closing the upper valve seat (5) by the sealing element (6), and the lower valve seat (3) is open.

The function of solenoid operators and solenoid valves are identical. However, the customer would assemble a solenoid operator with a valve body and valve seat to a solenoid valve.
2/2 way valves do not possess an upper valve seat.
The function of the magnet is identical.

Solenoid Coil

Width: 30 mm
Connection Type acc. to: DIN EN 175301803-A
Moulding Material: Thermoset Resin





General Data

Voltage Tolerance	-10% ... +10%
Ambient Temperature	-20°C ... +50°C
Relative duty cycle	100%
Insulation class of insulating materials according to DIN VDE 0580	F
Degree of protection according to EN 60529 or IEC 529	IP 65
Imprint (customer imprint - special version)	Nass Magnet

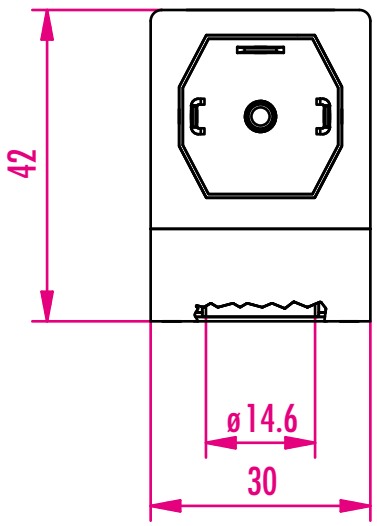
Technical Data / Standard Versions

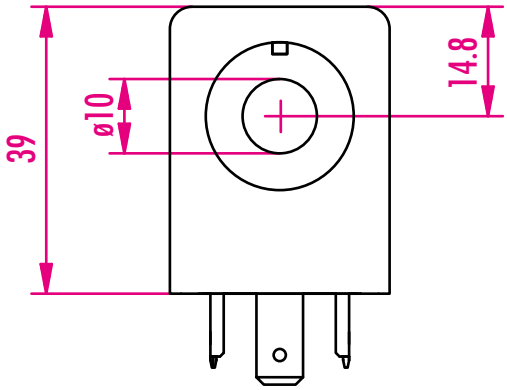
Drawing No.	Part No.	Voltage [V]	Frequency [Hz]	Output [VA] [W]	Power Level	$\Delta\vartheta_{32}$ [K]
0543 00.1-00/5780	250 3155	24 DC	-	2.0		20
0543 00.1-00/7174	251 0114	110 AC	50	7.8		45
0543 00.1-00/7174	251 0114	110 AC	60	6.7	1	45
0543 00.1-00/6755	251 0115	230 AC	50	6.5		38
0543 00.1-00/6755	251 0115	230 AC	60	5.6		38
0543 00.1-00/5751	250 2560	24 DC	-	6.1		44
0543 00.1-00/5764	250 4083	110 AC	50	11.1		59
0543 00.1-00/5764	250 4083	110 AC	60	9.8	2	59
0543 00.1-00/6535	250 5078	230 AC	50	10.6		57
0543 00.1-00/6535	250 5078	230 AC	60	9.4		57
0543 00.1-00/5752	250 2561	24 DC	-	11.0		72
0543 00.1-00/5765	250 2864	110 AC	50	17.6		88
0543 00.1-00/5765	250 2864	110 AC	60	15.4	3	88
0543 00.1-00/6486	250 4932	230 AC	50	17.7		89
0543 00.1-00/6486	250 4932	230 AC	60	15.5		89
0543 00.1-00/5753	250 3154	24 DC	-	15.0		95
0543 00.1-00/6869	250 6444	110 AC	50	21.7		107
0543 00.1-00/6869	250 6444	110 AC	60	19.2	4	107
0543 00.1-00/6884	250 7209	230 AC	50	21.4		106
0543 00.1-00/6884	250 7209	230 AC	60	19.0		106

$\Delta\vartheta_{32}$ = steady-state over-temperature according to VDE 0580

Solenoid Coil

Width: 30 mm
Connection Type acc. to: DIN EN 175301-803-A
Moulding Material: Thermoplastic





General Data

Voltage Tolerance	-10% ... +10%
Ambient Temperature	-20°C ... +50°C
Relative duty cycle	100%
Insulation class of insulating materials according to DIN VDE 0580	F
Degree of protection according to EN 60529 or IEC 529	IP 65
Imprint (customer imprint - special version)	Nass Magnet

Technical Data / Standard Versions

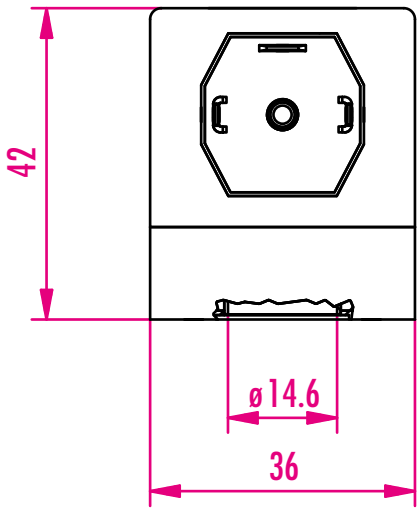
Drawing No.	Part No.	Voltage [V]	Frequency [Hz]	Output [VA] [W]	Power Level	$\Delta\vartheta_{32}$ [K]
0562 00.1-00/5780	251 0116	24 DC	-	1.9		23
0562 00.1-00/7174	251 0117	110 AC	50	7.8		48
0562 00.1-00/7174	251 0117	110 AC	60	6.7	1	48
0562 00.1-00/6755	251 0118	230 AC	50	6.5		41
0562 00.1-00/6755	251 0118	230 AC	60	5.6		41
0562 00.1-00/5751	251 0119	24 DC	-	6.1		50
0562 00.1-00/5764	251 0120	110 AC	50	11.1		64
0562 00.1-00/5764	251 0120	110 AC	60	9.8	2	64
0562 00.1-00/5758	251 0121	230 AC	50	10.7		62
0562 00.1-00/5758	251 0121	230 AC	60	9.4		62
0562 00.1-00/5752	250 9798	24 DC	-	11.0		80
0562 00.1-00/5765	250 9795	110 AC	50	17.6		95
0562 00.1-00/5765	250 9795	110 AC	60	15.4	3	95
0562 00.1-00/6486	251 0255	230 AC	50	17.7		96
0562 00.1-00/6486	251 0255	230 AC	60	15.5		96
0562 00.1-00/5753	250 9797	24 DC	-	15.0		102
0562 00.1-00/6869	250 9803	110 AC	50	21.7		119
0562 00.1-00/6869	250 9803	110 AC	60	19.2	4*	119
0562 00.1-00/6884	251 0123	230 AC	50	21.4		118
0562 00.1-00/6884	251 0123	230 AC	60	19.0		118

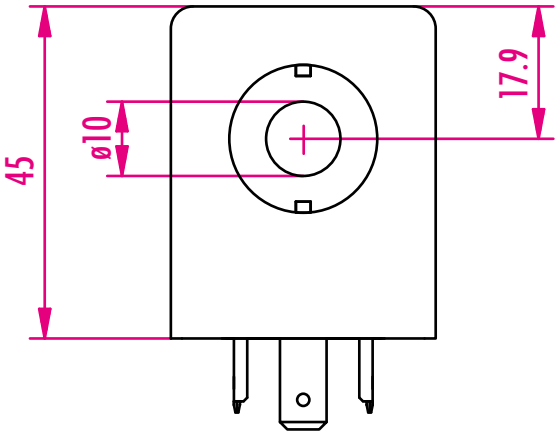
$\Delta\vartheta_{32}$ = steady-state over-temperature according to VDE 0580

**the maximum ambient temperature may amount to 40° C for AC versions of power level 4*

Solenoid Coil

Width: 36 mm
Connection Type acc. to: DIN EN 175301-803-A
Moulding Material: Thermoset Resin





General Data

Voltage Tolerance	-10% ... +10%
Ambient Temperature	-20°C ... +50°C
Relative duty cycle	100%
Insulation class of insulating materials according to DIN VDE 0580	F
Degree of protection according to EN 60529 or IEC 529	IP 65
Imprint (customer imprint - special version)	Nass Magnet

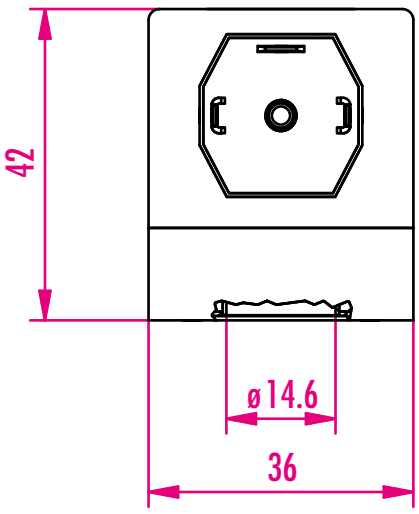
Technical Data / Standard Versions

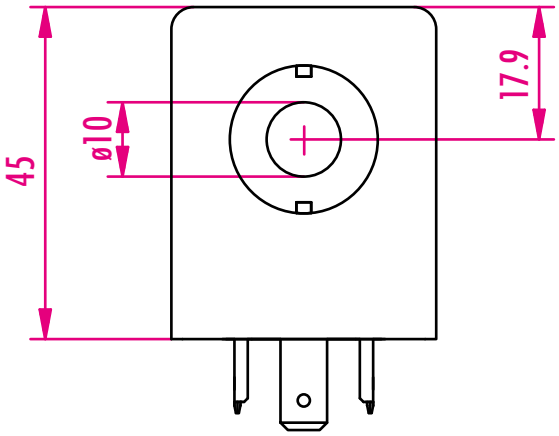
Drawing No.	Part No.	Voltage [V]	Frequency [Hz]	Output [VA] [W]	Power Level	$\Delta\vartheta_{32}$ [K]
0545 00.1-00/5803	250 3187	24 DC	-	4.1		31
0545 00.1-00/5806	251 0124	110 AC	50	9.0		43
0545 00.1-00/5806	251 0124	110 AC	60	7.8	2	43
0545 00.1-00/6754	250 8578	230 AC	50	8.8		42
0545 00.1-00/6754	250 8578	230 AC	60	7.6		42
0545 00.1-00/5804	250 3188	24 DC	-	7.9		50
0545 00.1-00/5807	251 0125	110 AC	50	13.9		60
0545 00.1-00/5807	251 0125	110 AC	60	12.2	3	60
0545 00.1-00/6752	251 0126	230 AC	50	13.8		59
0545 00.1-00/6752	251 0126	230 AC	60	12.1		59
0545 00.1-00/5805	250 3189	24 DC	-	11.9		69
0545 00.1-00/5808	250 4729	110 AC	50	21.5		86
0545 00.1-00/5808	250 4729	110 AC	60	18.5	4	86
0545 00.1-00/6753	250 7283	230 AC	50	22.0		87
0545 00.1-00/6753	250 7283	230 AC	60	19.0		87
0545 00.1-00/6216	250 4228	24 DC	-	18.5		104
0545 00.1-00/6435	250 4518	110 AC	50	27.5		110
0545 00.1-00/6435	250 4518	110 AC	60	22.5	5	98
0545 00.1-00/7175	250 4227	230 AC	50	24.9		106
0545 00.1-00/7176	250 4589	230 AC	60	25.7		110

$\Delta\vartheta_{32}$ = steady-state over-temperature according to VDE 0580

Solenoid Coil

Width: 36 mm
Connection Type acc. to: DIN EN 175301-803-A
Moulding Material: Thermoplastic





General Data

Voltage Tolerance	-10% ... +10%
Ambient Temperature	-20°C ... +50°C
Relative duty cycle	100%
Insulation class of insulating materials according to DIN VDE 0580	F
Degree of protection according to EN 60529 or IEC 529	IP 65
Imprint (customer imprint - special version)	Nass Magnet

Technical Data / Standard Versions

Drawing No.	Part No.	Voltage [V]	Frequency [Hz]	Output [VA] [W]	Power Level	$\Delta\vartheta_{32}$ [K]
0546 00.1-00/5803	251 0129	24 DC	-	4.1		36
0546 00.1-00/5806	251 0130	110 AC	50	9.0		49
0546 00.1-00/5806	251 0130	110 AC	60	7.8	2	49
0546 00.1-00/6754	251 0131	230 AC	50	8.8		48
0546 00.1-00/6754	251 0131	230 AC	60	7.6		48
0546 00.1-00/5804	250 9944	24 DC	-	7.9		57
0546 00.1-00/5807	251 0132	110 AC	50	13.9		69
0546 00.1-00/5807	251 0132	110 AC	60	12.2	3	69
0546 00.1-00/6752	250 9946	230 AC	50	13.8		68
0546 00.1-00/6752	250 9946	230 AC	60	12.1		68
0546 00.1-00/5805	250 9945	24 DC	-	11.9		80
0546 00.1-00/5808	251 0133	110 AC	50	21.4		98
0546 00.1-00/5808	251 0133	110 AC	60	18.5	4	98
0546 00.1-00/6753	250 9947	230 AC	50	21.8		100
0546 00.1-00/6753	250 9947	230 AC	60	18.8		100
0546 00.1-00/6216	251 0134	24 DC	-	18.5	5*	120

$\Delta\vartheta_{32}$ = steady-state over-temperature according to VDE 0580

**the maximum ambient temperature may amount to 40° C for DC versions of power level 5. In this power level, AC versions are not possible.*

Solenoid Coil

Special Remarks

Width: 30 mm
Connection Type acc. to: DIN EN 175301-803-A
Moulding Material: Thermoset Resin / Thermoplastic

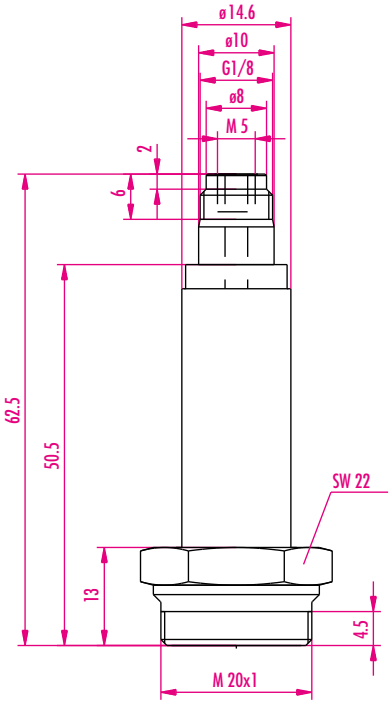
Width: 36 mm
Connection Type acc. to: DIN EN 175301-803-A
Moulding Material: Thermoset Resin / Thermoplastic

Special Remarks

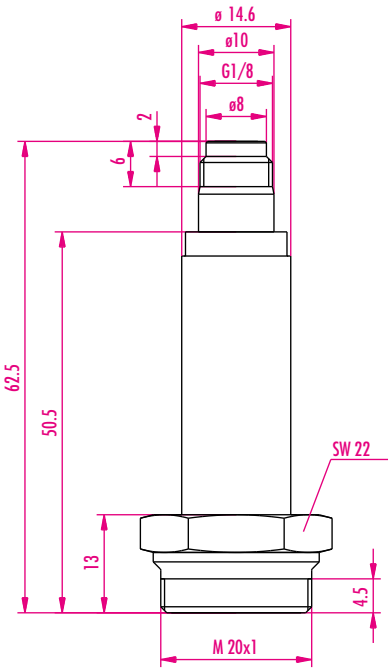
The perfect function of these solenoid coils and the respective components shown in this catalogue will be guaranteed for a winding at operating temperature (max. ambient temperature and max. voltage tolerance). The steady-state over-temperature is reached with lower parts of the valve in plastic and coils moulded with thermoplastic. All valves are made in compliance with DIN VDE 0580. The alignment of the valves on manifolds is possible, but this leads to an increase in temperature by up to 20K and may lead to a restricted function. A general lifetime of the products cannot be specified, as it is decisively influenced by ambient conditions, the single application and the combination with other components. The function can only be fulfilled in case of exclusive use of Nass Magnet products. Should there be deviating or additional operating conditions compared to the above-mentioned conditions, special testing is necessary in order to verify the usability of the Nass Magnet products. Nass Magnet or one of its subsidiaries will be glad to offer assistance.

Armature Assembly

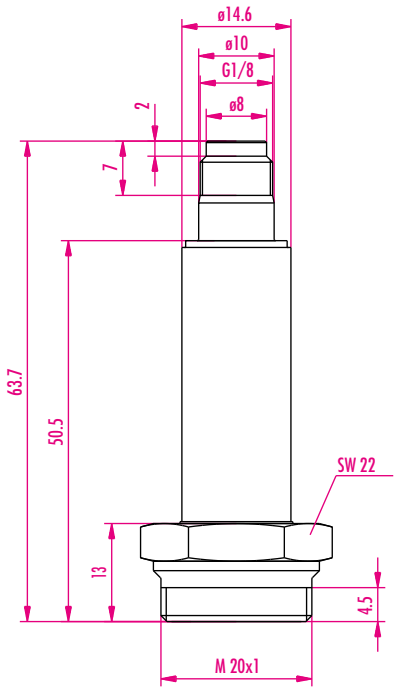
2/2 and 3/2 Way
Normally Closed (NC) / Open (NO)
Connection Type: Thread M 20 x 1
for AC and DC Applications



Normally Closed (NC)
3/2 Way



Normally Closed (NC)
2/2 Way



Normally Open (NO)
2/2 Way

General Data

Quality of medium according to ISO 8573-1 when using FKM sealing elements	Compressed air class 4, 3, 4
Mounting position (preferably plunger in vertical direction)	Any

Technical Data / Standard Versions

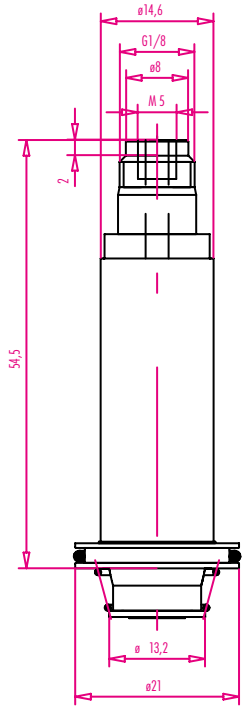
Drawing No.	Part No.	Function		Power Level	Nominal Orifice Inlet / Exhaust [mm]	Pressure [bar]	Thread M 20 x 1		Armature Guide		Sealing Material
							Metal Sealing	O-Ring Sealing	Brass	Stainless Steel	FPM**
0543 32.6-00	260 7246	2/2 Way	NC	2, 3, 4	see page 20 - 21			x		x	x
0543 62.6-00	260 3526	2/2 Way	NC	2, 3, 4	see page 20 - 21		x			x	x
0543 30.6-00	260 7512	2/2 Way	NC	2, 3, 4	see page 20 - 21		x	x	x		x
0543 95.6-00	260 6960	2/2 Way	NO*	3	see page 20 - 21		x			x	x
0543 83.6-00	260 6562	2/2 Way	NO*	5	see page 20 - 21		x			x	x
0543 52.6-00	260 3117	3/2 Way	NC	1	1.3/ 1.5	10	x			x	x
0543 50.6-00	260 2980	3/2 Way	NC	2	2.0/ 2.5	10	x			x	x
0543 51.6-00	260 2914	3/2 Way	NC	3	2.5/ 3.0	10	x			x	x
0543 33.6-00	260 7243	3/2 Way	NC	3	2.5/ 3.0	10		x		x	x
0543 58.6-00	260 3120	3/2 Way	NC	4	3.0/ 3.5	10	x			x	x
0543 03.6-00	260 7631	3/2 Way	NC	4	3.0/ 3.5	10		x		x	x

**respect type of connection*

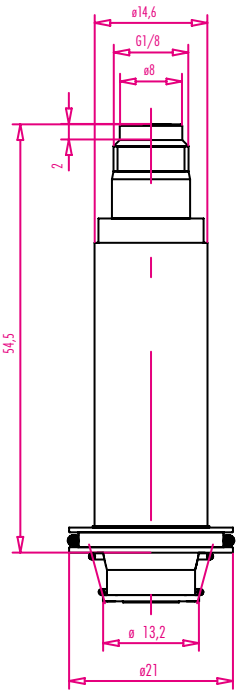
*** minimum permissible temperature -10°C (FPM), see summary of temperatures under „Useful Information", page 6*

Armature Assembly

2/2 and 3/2 Way
Normally Closed (NC)
Flange (with O-ring)
for AC and DC Applications



3/2 Way



2/2 Way

General Data

Quality of medium according too ISO 8573-1 when using FKM sealing elements	Compressed air class 4, 3, 4
Mounting position (preferably plunger in vertical direction)	Any

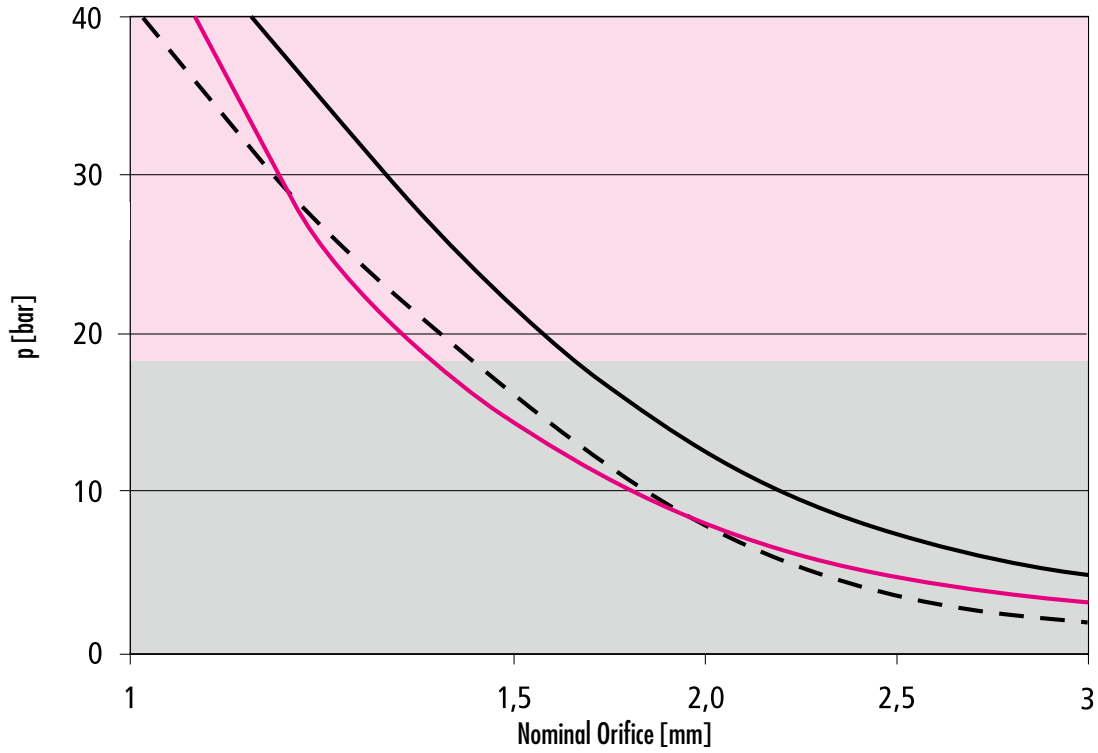
Technical Data / Standard Versions

Drawing No.	Part No.	Function		Power Level	Nominal Orifice Inlet / Exhaust [mm]	Pressure [bar]	Flange with O-ring	Armature Guide		Sealing Material
								Brass	Stainless Steel	FPM*
0543 62.6-50	260 3532	2/2 Way	NC	2, 3, 4	see page 20 - 21		x		x	x
0543 52.6-50	260 3139	3/2 Way	NC	1	1.3/ 1.5	10	x		x	x
0543 50.6-50	260 3136	3/2 Way	NC	2	2.0/ 2.5	10	x		x	x
0543 65.6-50	260 7979	3/2 Way	NC	2	2.0/ 2.5	10	x	x		x
0543 51.6-50	260 3138	3/2 Way	NC	3	2.5/ 3.0	10	x		x	x
0543 58.6-50	260 3141	3/2 Way	NC	4	3.0/ 3.5	10	x		x	x
0543 66.6-50	260 8047	3/2 Way	NC	4	3.0/ 3.5	10	x	x		x

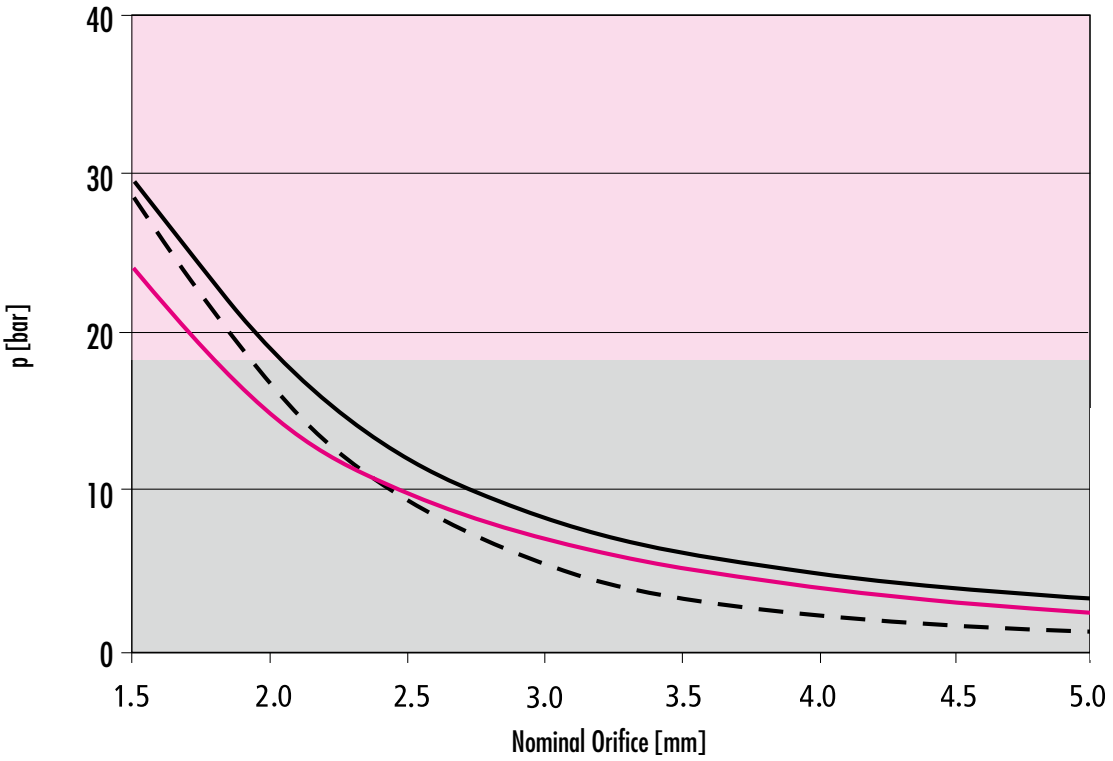
** minimum permissible temperature -10°C (FPM),*
see summary of temperatures under „Useful Information", page 6

Additional sealing materials: EPDM, NBR, HNBR

Power Level 1 for 2/2 Way Version



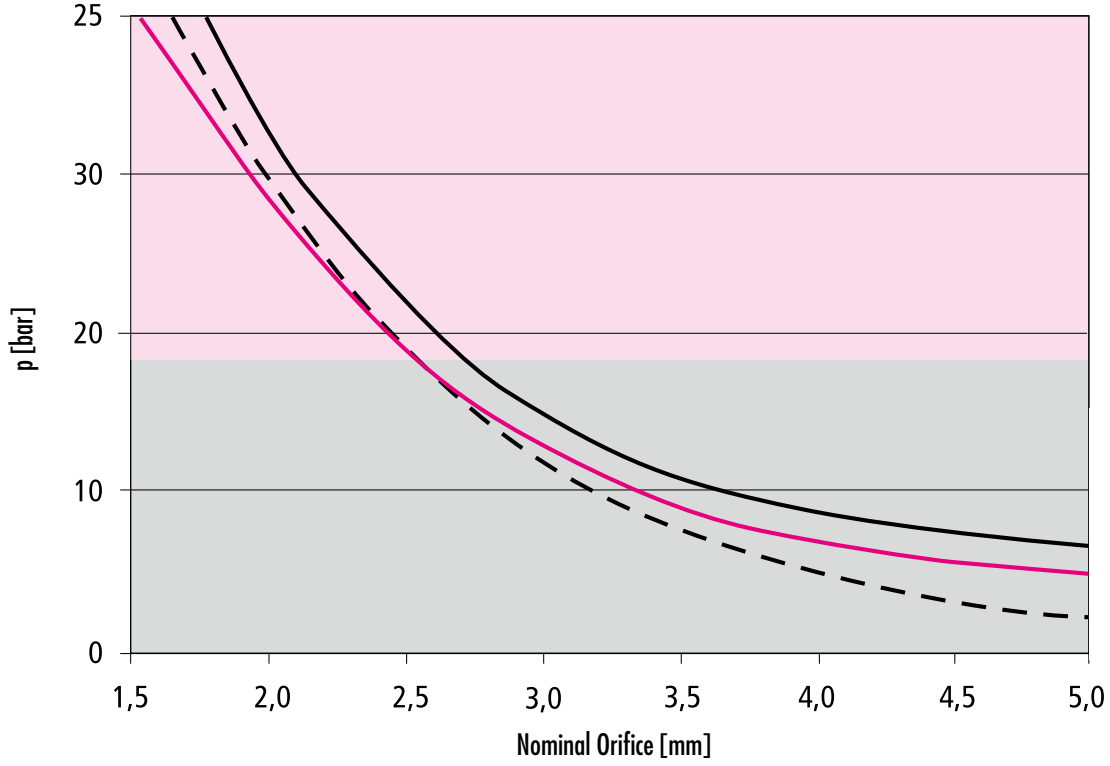
Power Level 2 for 2/2 Way Version



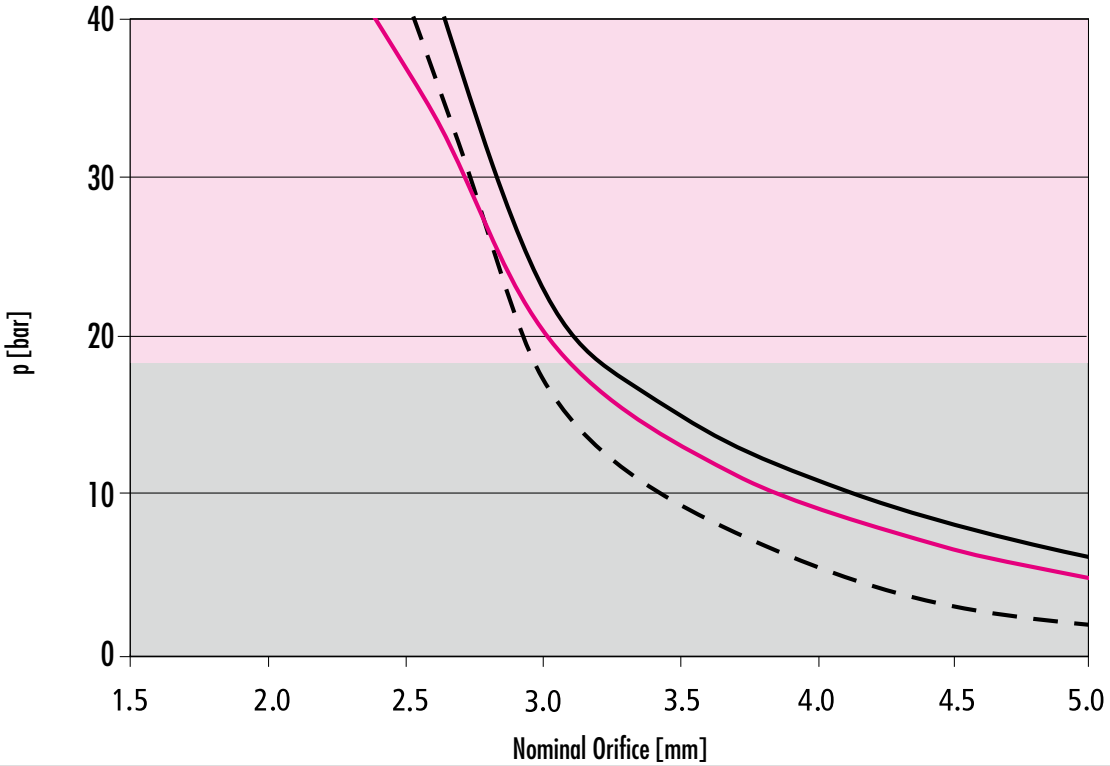
AC - 50 Hz AC - 60 Hz DC - 5% residual ripple

max. test pressure for standard products 18 bar, special versions on request

Power Level 3 for 2/2 Way Version



Power Level 4 for 2/2 Way Version

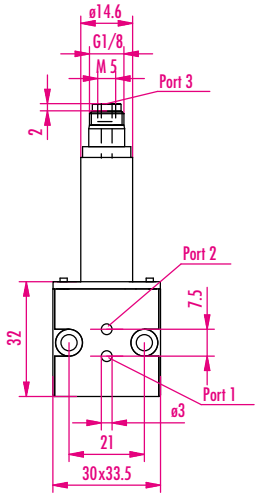


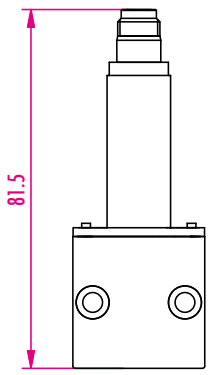
AC - 50 Hz AC - 60 Hz DC - 5% residual ripple

max. test pressure for standard products 18 bar, special versions on request

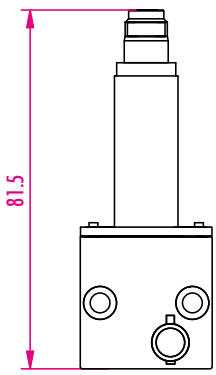
Valve System CNOMO

3/2 Way Valve System
Normally Closed (NC)
Valve Body: Zinc Die-Casted

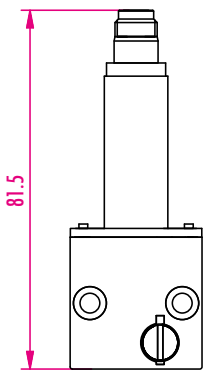




without manual override

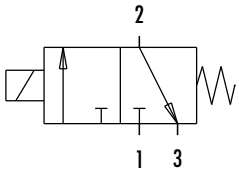


monostable manual override

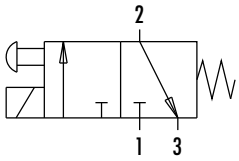


bistable manual override

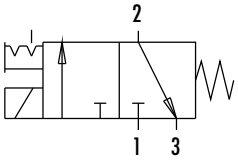
Pneumatic Diagram



without manual override



monostable manual override



bistable manual override

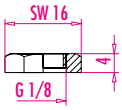
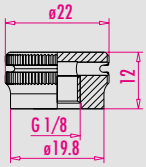
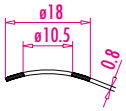
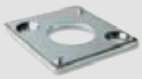
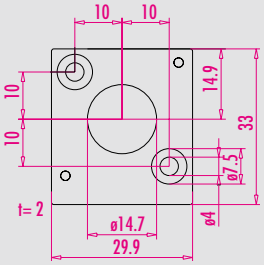
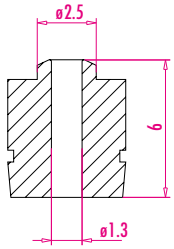
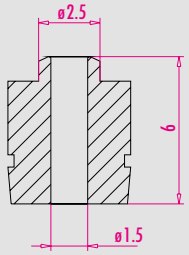
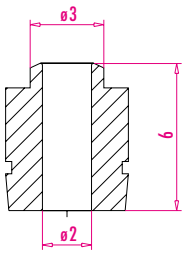
Technical Data / Standard Versions

Drawing No.	Part No.	Power Level	Nominal Orifice Inlet / Exhaust [mm]	Pressure [bar]	Flow Data* [l/min]		Manual Override		Appropriate for		Armature Guide	Sealing Material	
					1 - 2	2 - 3	Bi-stable	Mono-stable	AC	DC	Stainless Steel	FPM **	HNBR
1407 42.6-00	260 8219	1	1.3/ 1.5	10	50	75			x	x	x	x	
1407 44.6-00	260 3914	1	1.3/ 1.5	10	50	75	x		x	x	x	x	
1407 47.6-00	260 8119	1	1.3/ 1.5	10	50	75		x	x	x	x	x	
1407 13.6-00	260 3339	2	2.0/ 2.5	10	100	175			x	x	x	x	
1407 12.6-00	260 3338	2	2.0/ 2.5	10	100	175	x		x	x	x	x	
1407 16.6-00	260 3342	2	2.0/ 2.5	10	100	175		x	x	x	x	x	
1407 11.6-00	260 7634	3	2.5/ 3.0	10	135	200			x	x	x	x	
1407 45.6-00	260 3598	3	2.5/ 3.0	10	135	200	x		x	x	x	x	
1407 10.6-00	260 3205	3	2.5/ 3.0	10	135	200		x	x	x	x	x	
1407 43.6-00	260 3933	4	3.0/ 3.5	10	165	210			x	x	x	x	
1407 36.6-00	260 3404	4	3.0/ 3.5	10	165	210	x		x	x	x	x	
1407 48.6-00	260 4009	4	3.0/ 3.5	10	165	210		x	x	x	x	x	

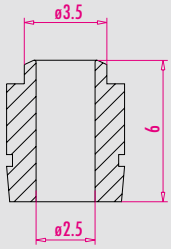
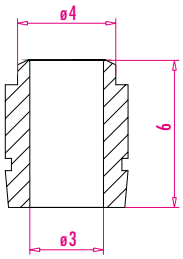
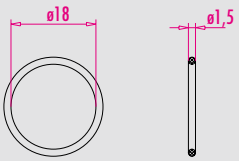
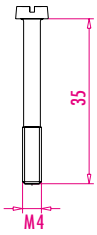
**qv Flow rate at an inlet pressure of 6 bar (ΔX = 1 bar) and 0°C*

*** minimum permissible temperature -10°C (FPM), see summary of temperatures under „Useful Information", page 6*

Accessories

Name / Type	Drawing No.	Part No.	Photo	Ill. with dimensions	Explanations
Hexagon nut	0557 00.0-03	260 0051			G 1/8, tightening torque max. 2 Nm
Exhaust protector	1407 04.0-01	260 3337			G 1/8, tightening torque max. 1.2 Nm
Spring washer	NN 3162 261	260 0052			-
Mounting plate	0543 00.0-01	260 3113			Only for armature assembly FL, p. 18/19
Valve seat Ms	1407 00.6-08	260 3264			- Orifice size 1.3
Valve seat Ms	1407 00.6-05	260 3041			- Orifice size 1.5
Valve seat Ms	1407 00.6-06	260 3042			- Orifice size 2.0

Accessories

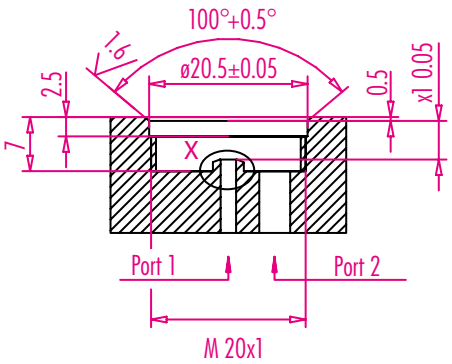
Name / Type	Drawing No.	Part No.	Photo	Ill. with dimensions	Explanations
Valve seat Ms	1407 00.6-07	260 3043			- Orifice size 2.5
Valve seat Ms	1407 00.6-11	260 3017			- Orifice size 3.0
O-Ring FKM	NN 3912 181	260 3155			18x1.5 mm, Only for armature assembly with thread, p. 16 / 17
Cheese-head screw*	NN 3001 072	260 3280			M 4x35 mm, with slots and cross slots Tightening torque max. 1.5 Nm. Only for valve system CNOMO, p. 22 / 23

**Two screws are required per valve system*

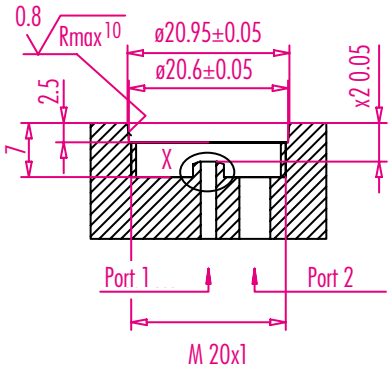
Interface / Geometry of Valve Seat

Diameter	Over-Allowance	Under-Allowance
21 H9	+0.052	0

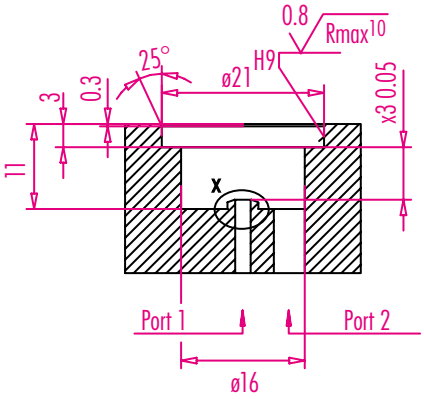
Picture 1
Thread version with metal sealing



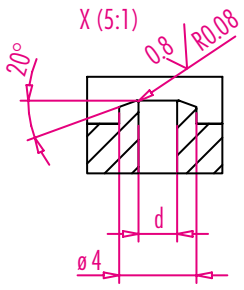
Picture 2
Thread version with O-ring sealing

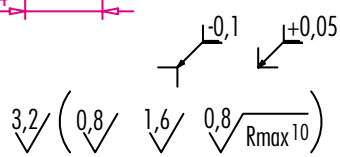


Picture 3
Flange version with O-ring sealing



d	x1		x2		x3	
	1 2	2 1 3	1 2	2 1 3	1 2	2 1 3
1.3	4.60	4.70	4.60	4.70	6.40	6.50
1.5	4.60	4.80	4.60	4.80	6.40	6.60
2.0	4.70	5.00	4.70	5.00	6.50	6.80
2.5	4.80	5.10	4.80	5.10	6.60	6.90
3.0	4.90	5.10	4.90	5.10	6.70	6.90
3.5	5.00	5.20	5.00	5.20	6.80	7.00
4.0	5.10	-	5.10	-	6.90	-
4.5	5.20	-	5.20	-	7.00	-





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