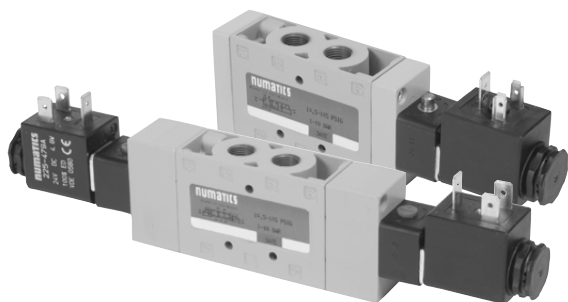


SOLENOID ACTUATED VALVES SERIES L1/L2 WITH EXCHANGEABLE COIL








The most common solenoid pilot actuated valve, which offers high flow capacity although it's small dimensions. coil can be turned so that it will serve the purpose. Various coil types are available for this valve. Valves can be used as standalone or they can be mounted on manifolds. Valves can be delivered in stainless steel version on request as well as with NAMUR interface.

Valves series L1/L2 contains spool and sleeve assembly, which guarantee long lifetime of valve.


Series	L1		L2	
	L11	L12	L22	L23
Ports	G1/8"	G1/4"	G1/4"	G3/8"
Connection of external pressure supply port	M5	M5	G1/8"	G1/8"
Flow capacity [Nl/min]	1000	1000	1700	1700
Working pressure [MPa]	0,1 to 1,0 (vacuum to 2,1 MPa when external pilot supply is used)			
Pilot pressure range [MPa]	0,1 to 1,0			
Power input [W, VA]	4,8W for DC voltage, 10VA inrush and 7VA hold for AC voltage			
Response time for DC voltage [ms]	10 energize, 35 de-energize			
Response time for AC voltage [ms]	7 energize, 35 de-energize			
Temperature range [°C]	medium temperature max. 50, ambient temperature -20 to +80			


Order codes

NL22 BA4 52 B Q 000 61

Size		Function		Coil type		Options		Voltage	
NL11	series L1 thread G1/8"	BA4		0	standard, typ 22 for AC voltage	000	standard with push/locking manual override, 0,1 to 1,0 MPa	61	24 V DC ± 10%
NL12	series L1 thread G1/4"	BB4		B	standard, typ 22 for DC voltage	14A	with external pilot supply with push/ locking manual override, vacuum to 2,1 MPa	40	230 V AC ± 10% 50-60 Hz
NL22	series L2 thread G1/4"	BB5		A	DIN 43650, form B	17P	with non-locking manual override, 0,1 to 1,0 MPa	30	110 V AC ± 10% 50-60 Hz
NL23	series L2 thread G3/8"	BB6		T	ISO 20401 with M12 connector and LED for 24V DC	17G	low wattage coil 1,42W (only for DC voltage, max. pressure 0,8 MPa)	20	24 V AC ± 10% 50-60 Hz
		BB7		7	DESINA with M12 connector and LED for 24V DC				
				C	standard type 22 with UL and CSA approval				
				2	DIN 43650, form A, type 30 for AC voltage				
				4	DIN 43650, form A, type 30 for DC voltage				

Other options are available - please contact our technical dept.

 For dimensions see page 5-12.

 For connectors for valves see pages 5-44 and 5-45.








Popular series of solenoid pilot actuated valve, which offers high flow capacity and long lifetime due to robust coil. Valves can be used as stand-alone or they can be mounted on manifolds. Valve can be delivered with position sensing switch on request.

Valves series L1/L2 contains spool and sleeve assembly, which guarantee long lifetime of valve.


Series	L1		L2	
	L11	L12	L22	L23
Ports	G1/8"	G1/4"	G1/4"	G3/8"
Connection of external pressure supply port	M5	M5	G1/8"	G1/8"
Flow capacity [Nl/min]	1000	1000	1700	1700
Working pressure [MPa]	0,1 to 1,0 (vacuum to 2,1 MPa when external pilot supply is used)			
Pilot pressure range [MPa]	0,1 to 1,0			
Power input [W, VA]	3,35W for DC voltage, 10VA inrush and 7VA hold for AC voltage			
Response time for DC voltage [ms]	10 energize, 35 de-energize			
Response time for AC voltage [ms]	7 energize, 35 de-energize			
Temperature range [°C]	medium temperature max. 50, ambient temperature -20 to +80			


Order codes

NL22 BA4 52 B G 000 61

Size		Function		Coil type		Options		Voltage	
NL11	series L1 thread G1/8"	BA4		0	standard, typ 22 for AC voltage	000	standard with turning manual override	61	24 V DC ± 10%
NL12	series L1 thread G1/4"	BB4		B	standard, typ 22 for DC voltage	17P	with non-locking manual override	40	230 V AC ± 10% 50-60 Hz
NL22	series L2 thread G1/4"	BB5		A	DIN 43650, form B	14A	with external pilot supply	30	110 V AC ± 10% 50-60 Hz
NL23	series L2 thread G3/8"	BB6				15Z	solenoid rotated by 180°	20	24 V AC ± 10% 50-60 Hz
		BB7				17G	low wattage coil 1,42W (only for DC voltage, max. pressure 0,8 MPa)		

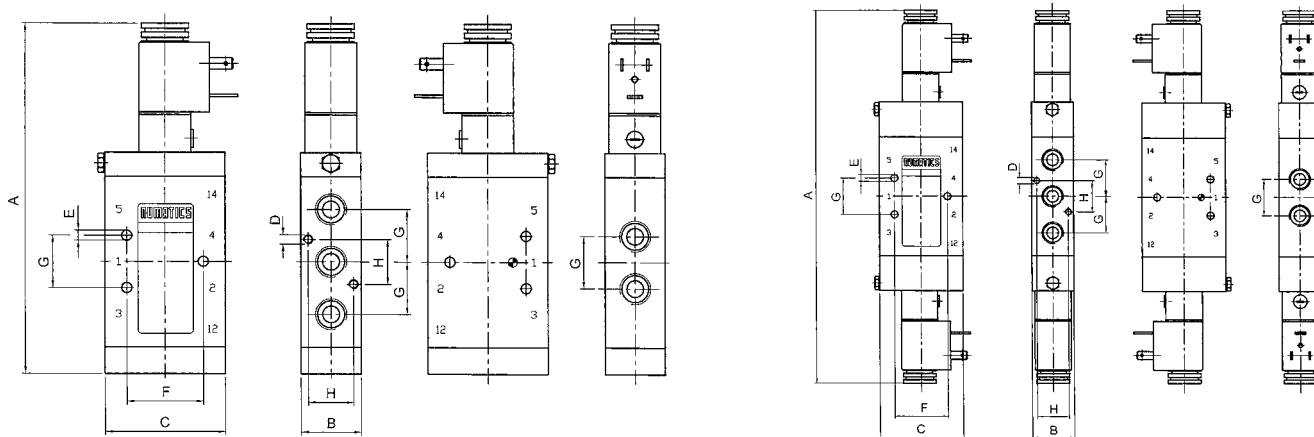
Other options are available - please contact our technical dept.

 For dimensions see page 5-12.

 For connectors for valves see pages 5-44 and 5-45.

SOLENOID ACTUATED VALVES SERIES L1/L2 WITH AND WITHOUT EXCHANGEABLE COIL

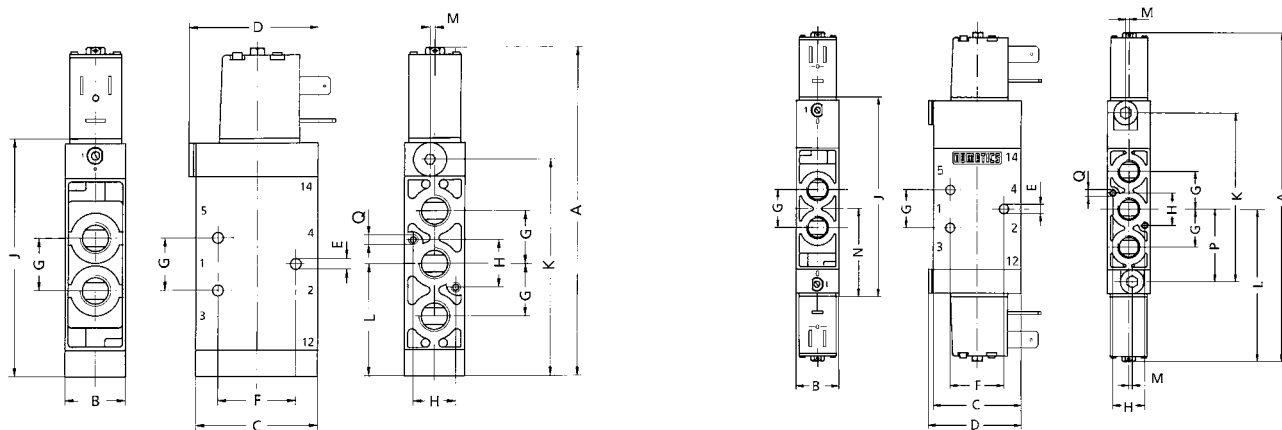
Dimensions of valve series L1/L2 with exchangeable coil



Series	Function	A	B	C	D	E	F	G	H	Weight [kg]
L1	BA4	133	22,2	41,1	M3, depth 12	3,3	24,4	18	18	0,27
L1	BB4	197,5	22,2	41,1	M3, depth 12	3,3	24,4	18	18	0,42
L1	BB5/6/7	208	22,2	41,1	M3, depth 12	3,3	24,4	18	18	0,44
L2	BA4	148	25,4	50,8	M4, depth 8	4,3	32,3	22,2	19	0,39
L2	BB4	214	25,4	50,8	M4, depth 8	4,3	32,3	22,2	19	0,55
L2	BB5/6/7	225,5	25,4	50,8	M4, depth 8	4,3	32,3	22,2	19	0,60

Notice: use fittings only to max. 14 mm wrench size with series L1, and only to max. 19 mm wrench size with series L2.

Dimensions of valve series L1/L2



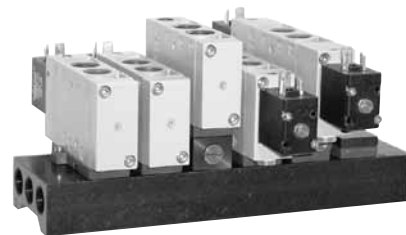
Series	Function	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	Weight [kg]
L1	BA4	123,2	22,2	41,1	41,1	3,3	24,4	18	15,8	84,5	73,6	38	0	—	—	M3, depth 12	0,27
L1	BB4	179,4	22,2	41,1	41,1	3,3	24,4	18	15,8	103,6	81,7	85	0	46	36	M3, depth 12	0,42
L1	BB5/6/7	190	22,2	41,1	41,1	3,3	24,4	18	15,8	114	92,2	95	0	57	46	M3, depth 12	0,44
L2	BA4	136,6	25,4	50,8	54,5	4,3	32,3	22,2	19	99	89,7	47	2,1	—	—	M4, depth 7	0,39
L2	BB4	193,5	25,4	50,8	54,5	4,3	32,3	22,2	19	117,5	99	90,2	2,1	52,2	42,9	M4, depth 7	0,55
L2	BB5/6/7	206,6	25,4	50,8	54,5	4,3	32,3	22,2	19	130,6	111,9	103,3	2,1	65,3	56	M4, depth 7	0,60

Notice: use fittings only to max. 14 mm wrench size with series L1, and only to max. 19 mm wrench size with series L2.

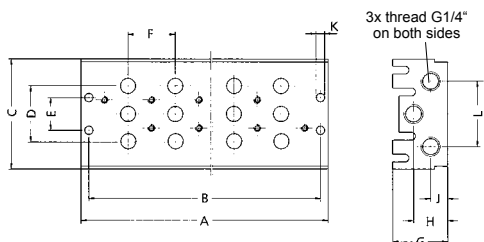
Series L1 / L2 valves manifold assembly

It is possible to mount series L valves on manifold with predefined number of position. It isn't possible to add another position to created assembly - it could be necessary to replace manifold or create another manifold. If there is possibility that more valves will be needed in future, we recommend to use manifold with more positions and use blank station plate for unused positions.

Any valve series L1/L2 may be used for manifold assembly (it doesn't matter if valve is single or double solenoid actuated or air actuated). But it is necessary to use adaptor, which must be mounted between valve and manifold (there is different adaptor for valve series L1 and L2). Valves mounted on manifold could be unmounted separately by unscrew of 2 bolts, which are accessible from top side (side with ports 2 and 4 of valves).



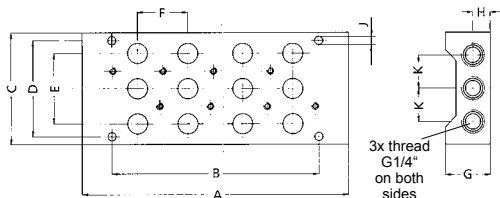
Manifolds for valves series L1



Order codes	Application
N239-311	Adaptor plate (1 plate per station)
N239-288	Blank station plate

Order codes	Number of positions	A	B	C	D	E	F	G	H	J	K	L	Weight [kg]
N106-540	2	88,5	78,5	70,6	36	21	30,5	35,5	22	11	5,3	42	0,41
N106-541	3	119	109	70,6	36	21	30,5	35,5	22	11	5,3	42	0,55
N106-542	4	149,5	139,5	70,6	36	21	30,5	35,5	22	11	5,3	42	0,69
N106-543	5	180	170	70,6	36	21	30,5	35,5	22	11	5,3	42	0,83
N106-544	6	210,5	200,5	70,6	36	21	30,5	35,5	22	11	5,3	42	0,97
N106-545	7	241	231	70,6	36	21	30,5	35,5	22	11	5,3	42	1,12
N106-546	8	271,5	261,5	70,6	36	21	30,5	35,5	22	11	5,3	42	1,26
N106-547	9	302	292	70,6	36	21	30,5	35,5	22	11	5,3	42	1,40
N106-548	10	332,5	322,5	70,6	36	21	30,5	35,5	22	11	5,3	42	1,54
N106-549	11	363	353	70,6	36	21	30,5	35,5	22	11	5,3	42	1,68
N106-550	12	393,5	383,5	70,6	36	21	30,5	35,5	22	11	5,3	42	1,82

Manifolds for valves series L2



Order codes	Application
N239-312	Adaptor plate (1 plate per station)
N239-471	Blank station plate
N10.6445	Valve isolating plate to lock port 1
N239-209	Sandwich speed control

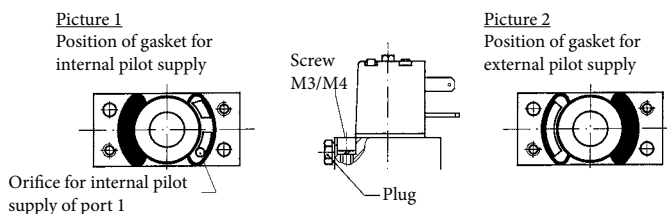
Order codes	Number of positions	A	B	C	D	E	F	G	H	J	K	Weight [kg]
N106-715	2	105,4	67	70,5	63,4	44,4	32	30,6	12,4	4,1	22,2	0,41
N106-716	3	137,4	99,4	70,5	63,4	44,4	32	30,6	12,4	4,1	22,2	0,54
N106-717	4	169,4	131,4	70,5	63,4	44,4	32	30,6	12,4	4,1	22,2	0,67
N106-718	5	201,4	163,4	70,5	63,4	44,4	32	30,6	12,4	4,1	22,2	0,80
N106-719	6	233,4	195,4	70,5	63,4	44,4	32	30,6	12,4	4,1	22,2	0,94
N106-720	7	265,4	255,4	70,5	63,4	44,4	32	30,6	12,4	4,1	22,2	1,06
N106-721	8	297,4	259,4	70,5	63,4	44,4	32	30,6	12,4	4,1	22,2	1,19
N106-722	9	329,4	291,4	70,5	63,4	44,4	32	30,6	12,4	4,1	22,2	1,32
N106-723	10	361,4	323,4	70,5	63,4	44,4	32	30,6	12,4	4,1	22,2	1,45
N106-724	11	393,4	355,4	70,5	63,4	44,4	32	30,6	12,4	4,1	22,2	1,58
N106-725	12	425,4	387,4	70,5	63,4	44,4	32	30,6	12,4	4,1	22,2	1,71

Conversion of internal to external air pilot supply of valve series L1 / L2

External air pilot supply is used, when air supply pressure is lower than 0,18 MPa (1,8 bar) as well as for vacuum and or if another medium than compressed air is used. It is necessary to order valve which is already prepared for this feature or change standard setting (when air pilot supply is drawn from valve supply port 1) in that cases.

When converting from internal to external pilot supply, please proceed as follows:

- 1) Unmount connector
- 2) Unscrew two M3 (for L1 series) or M4 (for L2 series) bolts, unmount solenoid mounting plate and insert gasket as shown in picture 2
- 3) Check proper gasket setting, re-mount and fasten solenoid mounting plate (torque approx. 1,5 Nm for L1 series and 2,3 Nm for L2 series), put on connector and fix it
- 4) Unscrew plug on side of valve and connect modified compressed air with pressure 1 to 10 bar



SOLENOID ACTUATED VALVES SERIES L1/L2 WITH AND WITHOUT EXCHANGEABLE COIL

Coils for valve series L1/L2 with exchangeable coil

Standard coil type 22

Order codes	Voltage	Coil type*	Weight [kg]
N225-479	24V DC	B	0,054
N228-794	24V 50-60 Hz	0	0,054
N228-791	110V 50-60 Hz	0	0,054
N228-790	230V 50-60 Hz	0	0,054



*) See coil type in order code of valve on page 5-8

Coil DIN 43650, form B, type 22

Order codes	Voltage	Coil type*	Weight [kg]
N225-478	24V DC	A	0,054
N228-872	24V 50-60 Hz	A	0,054
N228-874	110V 50-60 Hz	A	0,054
N228-789	230V 50-60 Hz	A	0,054



*) See coil type in order code of valve on page 5-8

Standard coil type 22 with UL and CSA certificate

Order codes	Voltage	Coil type*	Weight [kg]
N225-506	24V DC, 48V 50-60 Hz	C	0,054
N228-793	110V 50-60 Hz, 60V DC	C	0,054



*) See coil type in order code of valve on page 5-8

Coil DIN 43650, form A, type 30

Order codes	Voltage	Coil type*	Weight [kg]
N225-354	24V DC	4	0,10
N228-772	24V 50-60 Hz	2	0,10
N228-773	110V 50-60 Hz, 60V DC	2	0,10
N228-774	230V 50-60 Hz, 110V DC	2	0,10
N225-355 ⁺	24V DC 48V 50-60 Hz	4	0,10
N228-775 ⁺	24V 50-60 Hz 12V DC	2	0,10
N228-776 ⁺	110V 50-60 Hz, 60V DC	2	0,10
N228-777 ⁺	230V 50-60 Hz, 110V DC	2	0,10



*) See coil type in order code of valve on page 5-8

⁺) These coils are for pressure up to 1,6 MPa when pilot pressure up to 1,6 MPa is used

Coils ISO 20401 / DESINA with M12 connector and LED

Order codes	Voltage	Coil type*	Weight [kg]
N225-477	24V DC (ISO 20401)	T	0,065
N225-482	24V DC (DESINA)	7	0,065



*) See coil type in order code of valve on page 5-8

Pilot valves for series L1/L2 with exchangeable coil

Order codes (up to 1,0 MPa)	Order codes (up to 1,6 MPa)	Coil type	Manual override	Weight [kg]
N219-468	N219-494	22	push/locking	0,030
N219-479	N219-495	22	push/non-locking	0,030
N219-467	N219-493	22	without	0,030
N219-218	N219-221	30	push/locking	0,065
N219-217	N219-220	30	push/non-locking	0,065
N219-216	N219-219	30	without	0,065



Spare exhaust protection nut

Order code	Weight [kg]
N125-1027	0,002



Coils for valve series L1/L2

Standard coil type 22

Order codes	Voltage	Coil type*	Weight [kg]
N226-749	24V DC	B	0,10
N237-568	24V 50-60 Hz	0	0,10
N237-569	110V 50-60 Hz	0	0,10
N237-570	230V 50-60 Hz	0	0,10



*) See coil type in order code of valve on page 5-9

Coil DIN 43650, form B, type 22

Order codes	Voltage	Coil type*	Weight [kg]
N226-891	24V DC	A	0,10
N237-696	24V 50-60 Hz	A	0,10
N237-697	110V 50-60 Hz	A	0,10
N237-698	230V 50-60 Hz	A	0,10



*) See coil type in order code of valve on page 5-9