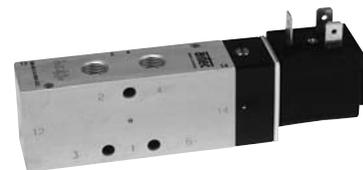


Electrically operated valves

Series KM-09, 5/2- and 5/3-way

G1/8 • 680 to 950 NI/min (0.691 to 0.966 Cv)



Order code

KM-09-510-HN-442

Coil options¹⁾

Series and function

Standard coils

HN at ports 2 + 4	HN at ports 1, 3 + 5
441 12 V DC, 4,2 W	411
442 24 V DC, 4,2 W	412
452 24 V AC, 7/4 VA	422
456 115 V AC, 7/4 VA	426
457 230 V AC, 7/4 VA	427
461 12 V DC, 2,2 W ²⁾	431
462 24 V DC, 2,2 W ²⁾	432

Without coil and plug socket

HN at ports 2 + 4	HN at ports 1, 3 + 5
570 Power consumption 4.2 W, 7/4 VA	500
560 Power consumption 2.2 W ²⁾	530

Coil with M12 connector and LED

HN at ports 2 + 4	HN at ports 1, 3 + 5
O42 24 V DC, 4,8 W	O12
O62 24 V DC, 2,5 W ²⁾	O32

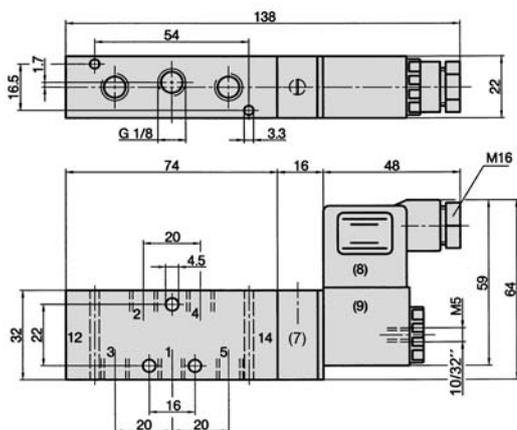
¹⁾ Manual override (HN) is on the side of ports 2 and 4 by default. It can be easily repositioned by 180° (side of ports 1, 3 and 5).
 Plug socket(s) not included in scope of delivery (see page 4.121).

Design, function and technical data

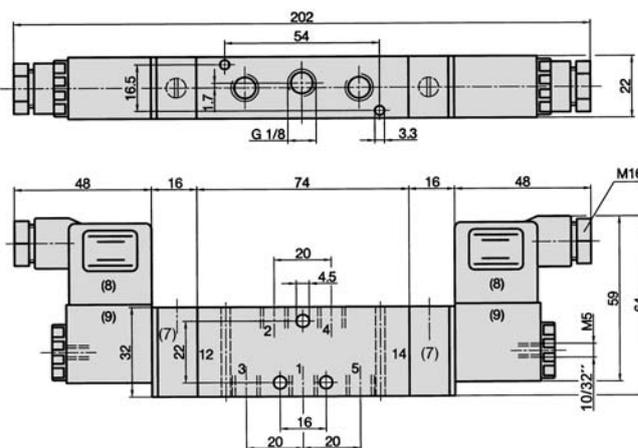
Spool valve actuated by an electrical signal. Please specify required control voltage when ordering.

Valves of this series are available in explosion proof design in accordance with 2014/34/EU (ATEX). Due to the bigger dimensions of the ATEX coils, ATEX specified valves cannot be mounted on standard manifolds. More details see chapter 13.

KM-09-510-HN, KM-09-511-HN



KM-09-520-HN, KM-09-530-HN, KM-09-533-HN, KM-09-534-HN



Note: Plug socket(s) not included in scope of delivery.

- 1 = pressure inlet
- 2, 4 = outlets
- 3, 5 = exhausts
- (7) = manual override (detent) can be repositioned by 180°
- (8) = plug socket can be repositioned by 180°
- (9) = solenoid coil can be repositioned by 4 x 90°

Order number	KM-09-510-HN	KM-09-511-HN	KM-09-520-HN	KM-09-530-HN	KM-09-533-HN	KM-09-534-HN
Please complete according to order code.						
Function	5/2-way single solenoid air spring return	5/2-way single solenoid spring return	5/2-way double solenoid	5/3-way center position closed	5/3-way center position exhausted	5/3-way center position pressurized
Connection	G1/8					
Nominal size	6 mm					
Flow rate	950 NI/min (0.966 Cv)	810 NI/min (0.823 Cv)	950 NI/min (0.966 Cv)	680 NI/min (0.691 Cv)		
Pressure range	3 ... 10 bar ²⁾ (43 ... 145 psi)					
Response time at 6 bar	on 15 ms off 16 ms	on 13 ms off 28 ms	15 ms	on 14 ms off 16 ms		
Temperature range	- 10 °C ... + 70 °C (+ 14 °F ... + 158 °F)					
Materials	Body: Al (anodized), Seals: NBR, Inner parts: Al, stainless steel and brass					
Medium	Compressed air in accordance with ISO 8573-1: 2010, Class 7:2:4 – and free of aggressive additives.					
Degree of protection	IP 65 according to EN 60529					
Weight	0,230 kg (0.507 lb.)	0,231 kg (0.509 lb.)	0,330 kg (0.727 lb.)			

²⁾ max. 8 bar (max. 116 psi) at 2.2 W and 2.5 W.

Electrically operated valves

Accessories and manifolds for series KM-09 and KM-10



Solenoid coils, actuators

Solenoid coils	23-SP-011-...	Standard coil	page 4.280
	23-SP-012-...	Coil with 2,2 W power consumption	page 4.280
	23-SP-011-5-O12	Coil with M12 plug connection, 4,8 W, LED and circuit protection	page 4.282
	23-SP-012-5-O32	Coil with M12 plug connection, 2,5 W, LED and circuit protection	page 4.282
	⊕ explosion proof	Valves with explosion proof actuator see chapter 13	
Actuators	23-R-011	Standard actuator	
	23-R-012	Low power actuator	
Plug sockets	28-ST-01	Standard plug socket	page 4.283
	28-ST-04-...	Plug socket with LED	page 4.283
	28-ST-06-...	Plug socket with LED and circuit protection	page 4.283
	28-ST-06-K3-...	Plug socket with LED, circuit protection and cable	page 4.283

User information

Low power consumption coils (2.2 W or 2.5 W) are for pressures up to 8 bar (116 psi) only. Valve actuator 23-R-012 is required. The actuator 23-R-012 is nickel plated. Make sure that the coils with the right power consumption are used.

For outdoor applications or in areas with high humidity use coil 23-SP-011-1-... or 23-SP-012-1-... (see page 4.280).

The following types are available on request

Coils and sockets with contacts according to DIN EN 175301-803 type B (U-form).

Plug sockets with molded cable.

Manifolds for KM-09 and KM-10



Manifold will be delivered completely assembled with valves if requested.



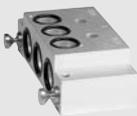
Manifold G1/8 with "n" stations.
RF-09/n
page 4.124



Manifold G1/4 with "n" stations.
RF-10/n
page 4.124



End plate for size G1/8 and G1/4.
RF-19-E
page 4.124



End plate with one valve station G1/8.
RF-09-E1
page 4.124



End plate with one valve station G1/4.
RF-10-E1
page 4.124



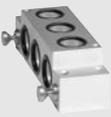
End plate with two valve stations G1/8.
RF-09-E2
page 4.124



End plate with two valve stations G1/4.
RF-10-E2
page 4.124



One station element G1/8.
RF-09-Z1
page 4.124



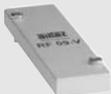
One station element G1/4.
RF-10-Z1
page 4.124



Four station element G1/8.
RF-09-Z4
page 4.124



Four station element G1/4.
RF-10-Z4
page 4.124



Blind plate for blank valve station G1/8.
RF-09-V



Blind plate for blank valve station G1/4.
RF-10-V



Seal plate (two different pressures).
RF-19-01



Pressure separator.
RE-19-DT

Further single elements: **RF-19-02** Assembly kit, 2 grub screws, O-rings, studs.
RF-19-03 3 x O-rings for valve assembly G1/8 and G1/4.

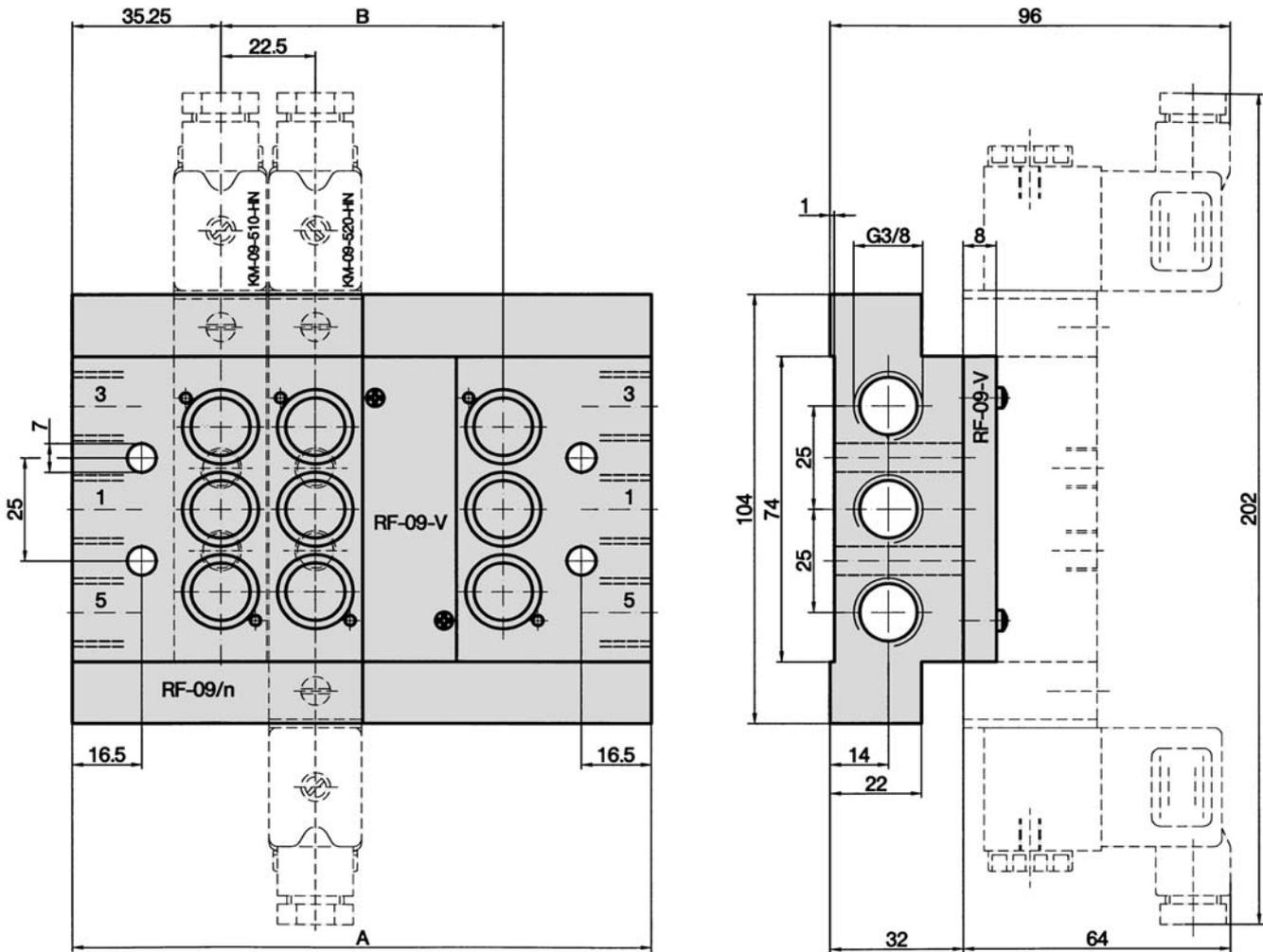
User information

Modular manifold system suitable for combined mounting of G1/8 (6 mm) and G1/4 (9 mm) valves. Any number of stations is possible if proper supply and exhaust of air is guaranteed. Adding or removing stations is possible at any time.

The necessary seals, mounting screws, grub screws and studs are included when ordering plates. The manifold system is delivered pre-assembled and function-tested. If not specified with the order, valve configuration is as follows: The valves are mounted according to their order number, starting with high numbers on the left, ending with low numbers on the right, followed by blind plates (if ordered).

See page 4.124 for elements of the manifolds.

Dimensions for manifolds RF-09



1 = pressure inlet 3, 5 = exhausts

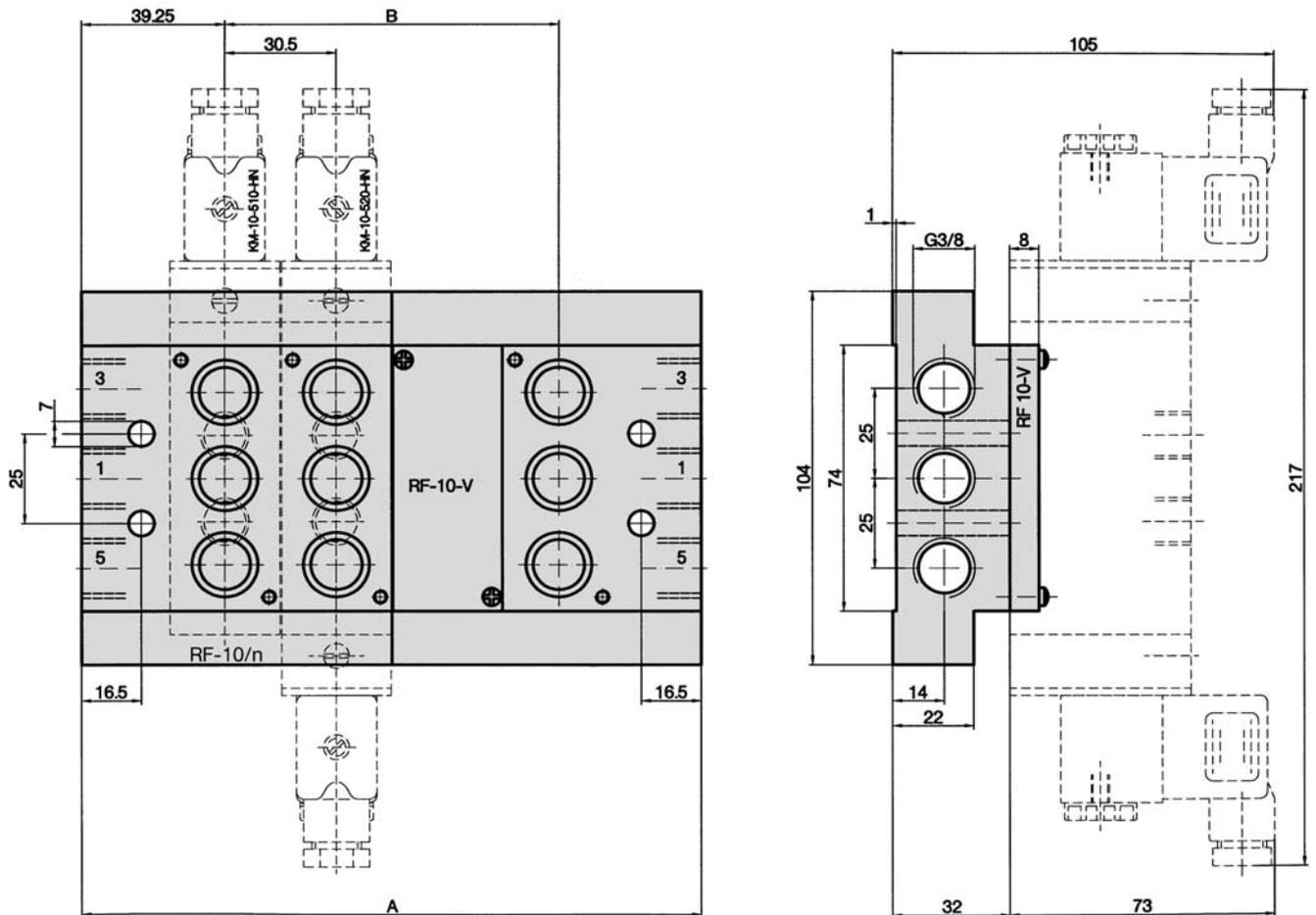
Material: Al (anodized), Studs and grub screws: Stainless steel, Screws: Steel (nickel-plated), O-rings: NBR.

Completely assembled manifolds for valve series KM-09 (G1/8) will be supplied with order number RF-09/n. The letter "n" indicates the number of stations. The single elements can be used for any configuration. For combined mounting of valve series KM-09 (G1/8) and series KM-10 (G1/4), the system has to be built up from single elements (see page 4.124).

Order number	A	B	Weight	Consist of single elements
RF-09/1	64.5	-	0.415 kg (0.915 lb.)	1 x RF-19-E, 1 x RF-09-E1
RF-09/2	87	22.5	0.550 kg (5.159 lbs.)	1 x RF-19-E, 1 x RF-09-E2
RF-09/3	109.5	45	0.680 kg (1.499 lbs.)	1 x RF-09-E2, 1 x RF-09-E1
RF-09/4	132	67.5	0.810 kg (1.786 lbs.)	2 x RF-09-E2
RF-09/5	154.5	90	0.990 kg (2.182 lbs.)	2 x RF-09-E2, 1 x RF-09-Z1
RF-09/6	177	112.5	1.060 kg (2.337 lbs.)	2 x RF-09-E1, 1 x RF-09-Z4
RF-09/7	199.5	135	1.190 kg (2.623 lbs.)	1 x RF-09-E2, 1 x RF-09-E1, 1 x RF-09-Z4
RF-09/8	222	157.5	1.320 kg (2.910 lbs.)	2 x RF-09-E2, 1 x RF-09-Z4
RF-09/9	244.5	180	1.500 kg (3.307 lbs.)	2 x RF-09-E2, 1 x RF-09-Z4, 1 x RF-09-Z1
RF-09/10	267	202.5	1.565 kg (3.450 lbs.)	1 x RF-09-E2, 2 x RF-09-Z4, 1 x RF-19-E
RF-09/11	289.5	225	1.700 kg (3.748 lbs.)	1 x RF-09-E2, 1 x RF-09-E1, 2 x RF-09-Z4
RF-09/12	312	247.5	1.830 kg (4.034 lbs.)	2 x RF-09-E2, 2 x RF-09-Z4
RF-09/13	334.5	270	2.010 kg (4.431 lbs.)	2 x RF-09-E2, 2 x RF-09-Z4, 1 x RF-09-Z1
RF-09/14	357	292.5	2.075 kg (4.574 lbs.)	1 x RF-19-E, 1 x RF-09-E2, 3 x RF-09-Z4
RF-09/15	379.5	315	2.210 kg (4.872 lbs.)	1 x RF-09-E2, 3 x RF-09-Z4, 1 x RF-09-E1
RF-09/16	402	337.5	2.340 kg (5.159 lbs.)	2 x RF-09-E2, 3 x RF-09-Z4

Additional numbers of stations are available.

Dimensions for manifolds RF-10



1 = pressure inlet 3, 5 = exhausts

Material: Al (anodized), Studs and grub screws: Stainless steel, Screws: Steel (nickel-plated), O-rings: NBR.

Completely assembled manifolds for valve series KM-10 (G1/4) will be supplied with order number RF-10/n. The letter "n" indicates the number of stations. The single elements can be used for any configuration. For combined mounting of valve series KM-09 (G1/8) and series KM-10 (G1/4), the system has to be built up from single elements (see page 4.124).

Order number	A	B	Weight	Consist of single elements
RF-10/1	78.5	-	0.470 kg (1.036 lbs.)	1 x RF-19-E, 1 x RF-10-E1
RF-10/2	109	30.5	0.660 kg (7.055 lbs.)	1 x RF-19-E, 1 x RF-10-E2
RF-10/3	139.5	61	0.850 kg (1.874 lbs.)	1 x RF-10-E2, 1 x RF-10-E1
RF-10/4	170	91.5	1.040 kg (2.293 lbs.)	2 x RF-10-E2
RF-10/5	200.5	122	1.250 kg (2.756 lbs.)	2 x RF-10-E2, 1 x RF-10-Z1
RF-10/6	231	152.5	1.380 kg (3.042 lbs.)	2 x RF-10-E1, 1 x RF-10-Z4
RF-10/7	261.5	183	1.570 kg (3.461 lbs.)	1 x RF-10-E2, 1 x RF-10-E1, 1 x RF-10-Z4
RF-10/8	292	213.5	1.760 kg (3.880 lbs.)	2 x RF-10-E2, 1 x RF-10-Z4
RF-10/9	322.5	244	1.970 kg (4.343 lbs.)	2 x RF-10-E2, 1 x RF-10-Z4, 1 x RF-10-Z1
RF-10/10	353	274.5	2.100 kg (4.630 lbs.)	1 x RF-10-E2, 2 x RF-10-Z4, 1 x RF-19-E
RF-10/11	383.5	305	2.290 kg (5.048 lbs.)	1 x RF-10-E2, 1 x RF-10-E1, 2 x RF-10-Z4
RF-10/12	414	335.5	2.480 kg (5.467 lbs.)	2 x RF-10-E2, 2 x RF-10-Z4
RF-10/13	444.5	366	2.690 kg (5.930 lbs.)	2 x RF-10-E2, 2 x RF-10-Z4, 1 x RF-10-Z1
RF-10/14	475	396.5	2.820 kg (6.217 lbs.)	1 x RF-19-E, 1 x RF-10-E2, 3 x RF-10-Z4
RF-10/15	505.5	427	3.010 kg (6.636 lbs.)	1 x RF-10-E2, 3 x RF-10-Z4, 1 x RF-10-E1
RF-10/16	536	457.5	3.200 kg (7.055 lbs.)	2 x RF-10-E2, 3 x RF-10-Z4

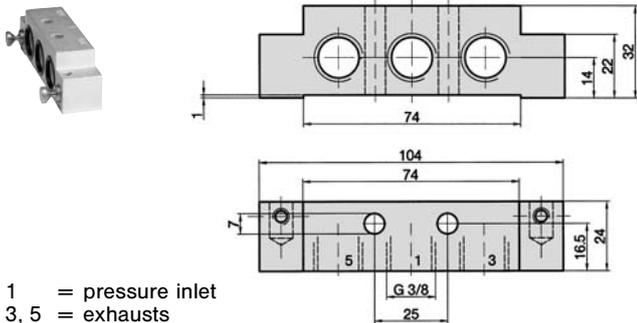
Additional number of stations are available.

Accessories for electrically operated valves

Manifolds for series KM-09 and KM-10



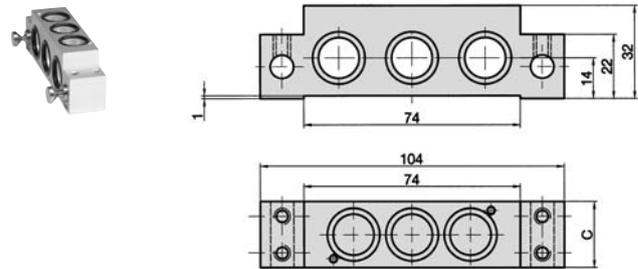
RF-19-E



1 = pressure inlet
3, 5 = exhausts

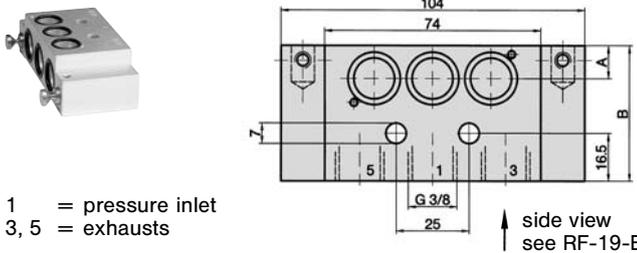
Material: Al (anodized),
Studs and grub screws: Stainless steel,
Screws: Steel (nickel-plated),
O-rings: NBR.

RF-09-Z1, RF-10-Z1



Material: Al (anodized),
Studs and grub screws: Stainless steel,
Screws: Steel (nickel-plated),
O-rings: NBR

RF-09-E1, RF-10-E1

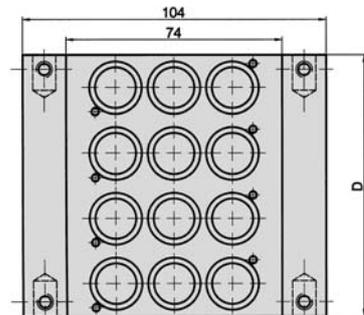
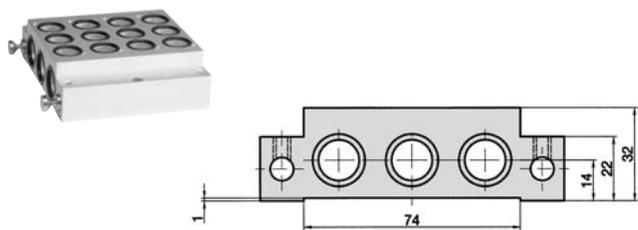


1 = pressure inlet
3, 5 = exhausts

Material: Al (anodized),
Studs and grub screws: Stainless steel,
Screws: Steel (nickel-plated),
O-rings: NBR

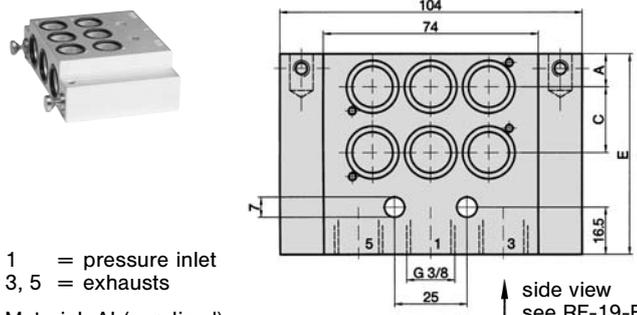
↑ side view
see RF-19-E

RF-09-Z4, RF-10-Z4



Material: Al (anodized),
Studs and grub screws: Stainless steel,
Screws: Steel (nickel-plated),
O-rings: NBR

RF-09-E2, RF-10-E2



1 = pressure inlet
3, 5 = exhausts

Material: Al (anodized),
Studs and grub screws: Stainless steel,
Screws: Steel (nickel-plated),
O-rings: NBR

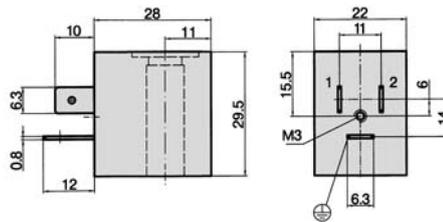
↑ side view
see RF-19-E

Studs, O-rings and grub screws are included when ordering plates.

Order number	A	B	C	D	E	Weight
RF-19-E	-	-	-	-	-	0.140 kg (0.308 lb.)
RF-09-E1	11.25	46.5	-	-	-	0.275 kg (0.606 lb.)
RF-09-E2	11.25	-	22.5	-	69	0.405 kg (0.893 lb.)
RF-09-Z1	-	-	22.5	-	-	0.180 kg (0.397 lb.)
RF-09-Z4	-	-	-	90	-	0.510 kg (1.124 lbs.)
RF-10-E1	15.25	54.5	-	-	-	0.330 kg (0.727 lb.)
RF-10-E2	15.25	-	30.5	-	85	0.520 kg (1.146 lbs.)
RF-10-Z1	-	-	30.5	-	-	0.210 kg (0.463 lb.)
RF-10-Z4	-	-	-	122	-	0.720 kg (1.587 lbs.)

Accessories for electrically operated valves

Solenoid coils



Solenoid coils with connection pattern pursuant to DIN EN 175301-803 Shape B

Order number	23-SP-011-411	23-SP-011-412	23-SP-011-422	23-SP-011-426	23-SP-011-427	23-SP-012-431	23-SP-012-432
Standard voltage	12 V DC	24 V DC	24 V AC	115 V AC	230 V AC	12 V DC	24 V DC
Power consumption DC	4.2 W	4.2 W				2.2 W	2.2 W
Power consumption 50 Hz			4 VA	4 VA	4 VA		
Degree of protection	IP 65 according to EN 60529 with connected plug socket						
Duty cycle	100 %						
Temperature range	- 20 °C ... + 50 °C (- 4 °F ... + 122 °F)						
Voltage tolerance	± 10 %						
Standard for series	MS-18, M-04, M-05, M-07, M-22, KM-09, KM-10, MF-05, MF-07, MN-06, KN-05, MI-01, MI-02, MI-03						

Other voltages on request.

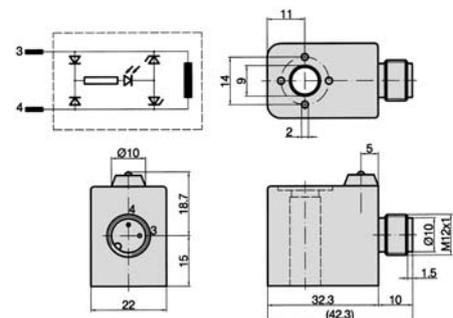
Solenoid coils with connection pattern pursuant to DIN EN 175301-803 Shape B

(with enhanced humidity resistance)

Order number	23-SP-011-1-711	23-SP-011-1-712	23-SP-011-1-712	23-SP-011-1-722	23-SP-011-1-725	23-SP-011-1-727	23-SP-012-1-732
Standard voltage	12 V DC/24 V AC	24 V DC	48 V AC	12 V DC/24 V AC	110 V AC	230 V AC	24 V DC
Power consumption DC	4.6 W	4.8 W	-	5.5 W	-	-	2.5 W
Power consumption 50 Hz	7.1 VA	-	7.7 VA	8.9 VA	8.5 VA	7.9 VA	
Degree of protection	IP 65 according to EN 60529 with connected plug socket *1						
Duty cycle	100 %						
Temperature range	- 20 °C ... + 50 °C (- 4 °F ... + 122 °F)						
Voltage tolerance	± 10 %						
Standard for series	KMX-09, KMX-10, ICK-09, ICK-10, KN-55, KNX-55, ICKN-55						

*1: IP67 pursuant to EN 60529 with plug socket and sealing set 20-SP-011/012-02

Solenoid coils with M12 connection, with LED and protective circuit.



Order number	23-SP-011-5-O12	23-SP-012-5-O32
Standard voltage	24 V DC	24 V DC
Power consumption	4.8 W	2.5 W
Degree of protection	IP 65 according to EN 60529 with connected cable	
Duty cycle	100 %	
Temperature range	- 20 °C ... + 50 °C	
Voltage tolerance	± 10 %	

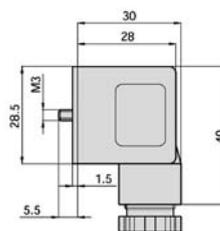
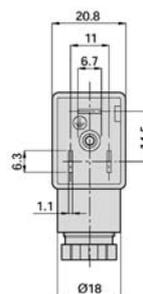
Accessories for electrically operated valves

Plug sockets for coil



Plug sockets pursuant to DIN EN 175301-803 Shape B

(2pol. + PE, 21 x 28 mm, Contact distance 11 mm)



Order number	28-ST-01	28-ST-04-112	28-ST-04-127	28-ST-06-112	28-ST-06-127	28-ST-06-K3-112	28-ST-06-K3-127
Standard voltage	all	24 V DC	230 V AC	24 V DC	230 V AC	24 V DC	230 V AC
Protective circuit	no	no	no	yes	yes	yes	yes
Status indicator	without	yes	yes	yes	yes	yes	yes
Degree of protection	IP 65 pursuant to EN 60529 requires a flat gasket						
Connecting cable	without					3 m	3m
Ø Connecting cable	6 – 8 mm					–	–
Max. wire cross section	1,5 mm ²					–	–
for coil	23-SP-011, 23-SP-011-1						