

MDF SERIES

SOLENOID VALVE



MDF series solenoid valves are direct operated or pilot operated solenoid valves, mainly used in refrigerant control of various devices such as refrigerating and freezing systems, air conditioners and heat pumps. All the Solenoid Valves listed in this datasheet can be installed in system using flammable refrigerants HFO (categories A2* and A2L*), and Hydrocarbons HC (category A3*).

FEATURES

- COILS: LOW ENERGY CONSUMPTION, RELIABLE
- GREAT VALVE OPENING PERFORMANCE, HIGH MOPD
- COILS ARE DOUBLE SEALED, WATERTIGHT AND SAFE
- CERTIFIED ACCORDING PED CAT.II BY TUV RHEINLAND

GENERAL SPECIFICATIONS

- Applicable for all common HCFC, HFC and HFO refrigerants such as: R22, R134a, R404A, R407A/C/F, R410A, R507A, R448A, R449A, R450A, R452A, R513A, R32, R1234yf, R1234ze, R454A/B/C, R455A, R290, R1270, R600a
- Maximum Operating Pressure: 4,5 MPa (45 bar)
- Medium temperature TS min./max.: -30°C/105°C
- Ambient temperature min./max.: -30°C / +55°C
- Relative humidity: 0 to 95% RH
- Installation position:
 - Liquid, suction and discharge line
 - Preferably coil upwards and flow direction corresponds to the arrow
- Declaration according to LVD and PED

Note: *according ANSI-ASHRAE 34-2016 and EN-378-1 ANNE EN 378-1:2016 Annex E

MDF SERIES

SOLENOID VALVE



TECHNICAL PARAMETERS OF VALVE BODY

Valve Body	Normal position	Actuation	Kv [m ³ /h]	MOP [Mpa]	Max. OPD [MPa]	Min. OPD ⁴⁾ [Mpa]
Solder						
MDF-A03-2H	NC ¹⁾	Direct	0,16	4,5	3,1 ³⁾	0,00
MDF-A03-3H			0,23			
MDF-A03-6H		Pilot ²⁾	0,8			0,005
MDF-A03-10H			1,9			
MDF-A03-15H			2,3			
MDF-A03-20H			5,0			
MDF-A03-22H		5,9	0,007			

- Note:**
- 1) NC means: Normally closed valve
 - 2) Membrane operated
 - 3) Max. OPD at 85% Ue. Other coils on request
 - 4) Min. OPD: values referred to 60% of nominal flow

DIMENSIONS

Valve Body - Inch Solder Connection, Models with MOP 45 bar

Model Valve Body	Part Number ¹⁾²⁾	Solder Connection ODF	Kv	PED Category Fluid Group I	Dimensions [mm]			
		[inch]	[m ³ /h]		L	B	D	H
MDF-A03-2H 001	10125011202	1/4	0,16	4.3	102	30	53	82
MDF-A03-3H 001	10125011302	1/4	0,23	4.3	102	30	53	82
MDF-A03-3H 003	10125003602	3/8	0,23	4.3	102	30	53	82
MDF-A03-6H 001	10125011402	3/8	0,8	4.3	111	36	53	88
MDF-A03-6H 003	10125004202	1/2	0,8	4.3	127	36	53	88
MDF-A03-10H 001	10125011502	1/2	1,9	4.3	127	42	53	95
MDF-A03-10H 003	10125006302	5/8	1,9	4.3	160	42	53	95
MDF-A03-15H 005	10125003702	5/8	2,3	4.3	176	52	53	100
MDF-A03-15H 003	10125005002	7/8	2,3	4.3	176	52	53	100
MDF-A03-20H 001	10125011702	7/8	5	4.3	191	52	53	117
MDF-A03-22H 001	10125011802	7/8	5,9	4.3	281	60	53	117
MDF-A03-20H 003	10125005602	1-1/8	5	4.3	214	52	53	117
MDF-A03-22H 009	10125006202	1-1/8	5,9	4.3	281	60	53	117

- Note:**
- 1) Extent of delivery: valve body without coil
 - 2) Available also as industrial package. Contact Sanhua for more details.

MDF SERIES SOLENOID VALVE

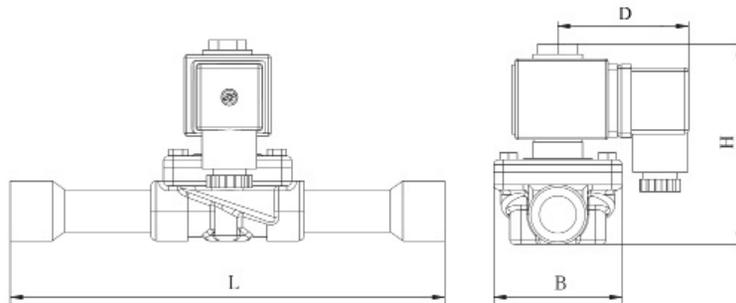


DIMENSIONS

Valve Body - Metrical Solder Connection, Models with MOP 45 bar

Model Valve Body	Part Number ¹⁾²⁾	Solder Connection ODF	Kv	PED Category Fluid Group I	Dimensions [mm]			
		[mm]	[m ³ /h]		L	B	D	H
MDF-A03-2H 003	10125006502	6	0,16	4.3	102	30	53	82
MDF-A03-3H 005	10125003802	6	0,23	4.3	102	30	53	82
MDF-A03-3H 007	10125003402	10	0,23	4.3	117	30	53	82
MDF-A03-6H 005	10125004102	10	0,8	4.3	111	36	53	88
MDF-A03-6H 007	10125006702	12	0,8	4.3	127	36	53	88
MDF-A03-10H 005	10125003502	12	1,9	4.3	127	42	53	95
MDF-A03-10H 003	10125006302	16	1,9	4.3	160	42	53	95
MDF-A03-15H 005	10125003702	16	2,3	4.3	176	52	53	100
MDF-A03-15H 003	10125005002	22	2,3	4.3	176	52	53	100
MDF-A03-20H 001	10125011702	22	5	4.3	191	52	53	117
MDF-A03-22H 001	10125011802	22	5,9	4.3	281	60	53	117
MDF-A03-20H 007	10125005702	28	5	4.3	214	52	53	117
MDF-A03-22H 011	10125000302	28	5,9	4.3	281	60	53	117

Note: 1) Extent of delivery: valve body without coil
2) Available also as industrial package. Contact Sanhua for more details.



MDF SERIES SOLENOID VALVE



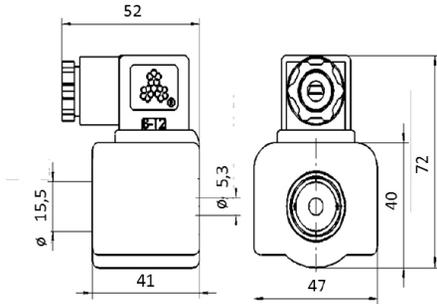
TECHNICAL PARAMETERS OF COIL

Model Coil	Part Number ¹⁾	Plug type	Supply	Rated Voltage [V]	Power [W]	Voltage Tolerance	Insulation Class	Protection Class (w/plug)	UL Approval
MQ-A0322G-000001 ²⁾	10820010002	DIN	AC	220 to 240	12 (50Hz) 10 (60Hz)	-15% +10%	F	IP67	NO

- Note:** 1) Extent of delivery: coil body, fastening screw for the coil body, plug for electrical connection incl. Gaskets and fastening screws
 2) Coil MQ-A0322G-000001 is third party certified for usage with flammable refrigerants (A2L, A3). Usage of the other coils with flammable refrigerants – please contact Sanhua.

DIMENSIONS - COILS

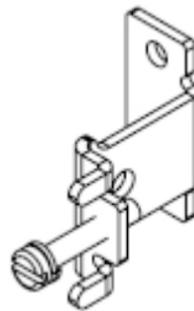
MQ-A03 (Coil with DIN Plug):



ACCESSORIES

Bracket

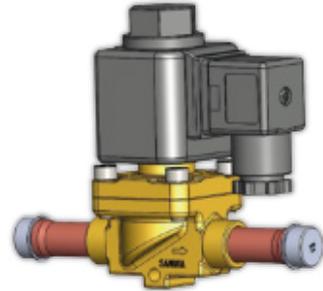
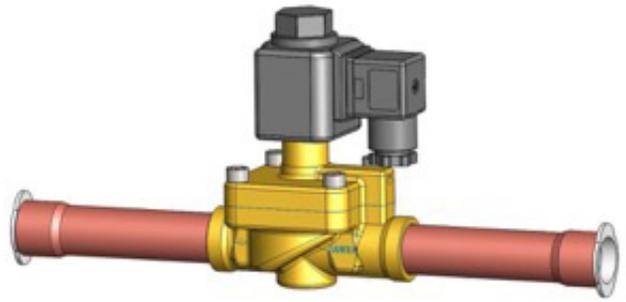
Model ¹⁾	Part Number	Applicable Valve Models
		Solder
MDF-A03-033001	20125000902	MDF-A03-2H
		MDF-A03-3H
		MDF-A03-6H
		MDF-A03-10H
		MDF-A03-15H



- Note:** 1) Extent of delivery: bracket and screw

MDF-A02 (NO) SERIES

SOLENOID VALVE



(Standard range: for fluids GROUP 2 according to Directive 2014/68/EU or GROUP A1 according to ANSI-ASHRAE 34-2016).

MDF-A02 series solenoid valves are normally open (NO) pilot operated solenoid valves, mainly used in refrigerant control of various devices such as refrigerating and freezing systems, air conditioners and heat pumps.

FEATURES

- COILS: LOW ENERGY CONSUMPTION, RELIABLE
- GREAT VALVE OPENING PERFORMANCE, HIGH MOPD
- COILS ARE DOUBLE SEALED, WATERTIGHT AND SAFE

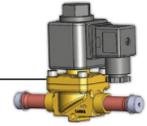
GENERAL SPECIFICATIONS¹⁾

- Applicable for all common HFC, HFO refrigerants such as: R134a, R404A, R407A/F, R407C, R410A, R448A, R449A, R450A, R452A, R513A, R507A
- Medium temperature: -30°C ~ +105°C
- Ambient temperature: -30°C ~ +55°C
- Relative humidity: 0 to 95%RH
- Installation position:
 - liquid, suction and discharge line
 - preferably coil upwards and flow direction corresponds to the arrow
- Declaration according to LVD and PED

1) Please contact Sanhua to get models for oil-free application.

MDF-A02 (NO) SERIES

SOLENOID VALVE



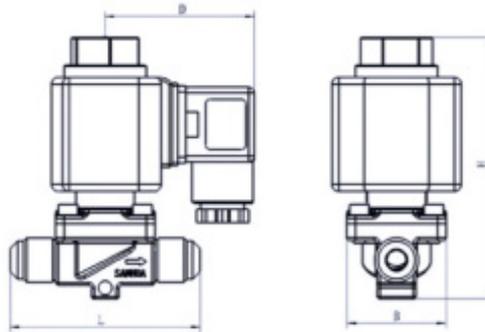
TECHNICAL PARAMETERS OF VALVE BODY

Valve Body		Usable Coils	Normal position	Actuation	Kv [m ³ /h]	MOP [Mpa]	Max. OPD [Mpa]	Min. OPD ⁴⁾ [Mpa]
Solder	Flare							
MDF-A02-6H	MDF-A02-6L	AC/DC	NC ¹⁾	Pilot ²⁾	0,8	4,5	2,8 ³⁾	0,02
MDF-A02-10H	MDF-A02-10L				1,9			
MDF-A02-15H	MDF-A02-15L				2,3			
MDF-A02-20H					5			
MDF-A02-22H					6			

- Note:**
- 1) NO means: Normally open valve
 - 2) Membrane operated
 - 3) Max. OPD with liquid is 2,1 MPa, Max. OPD at 85% Ue
 - 4) Min. OPD: values referred to 100% of nominal flow

DIMENSIONS

Valve Body - Thread Connection

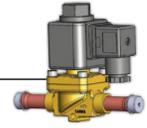


Model Valve Body	Part Number ¹⁾²⁾	SAE Flare Connection [inch]	Kv [m ³ /h]	PED Category Group 2	Dimensions [mm]			
					L	B	D	H
MDF-A02-6L 002	10125012502	3/8	0,8	4.3	69	36	53	95
MDF-A02-6L 004	10125012602	1/2	0,8	4.3	75	36	53	95
MDF-A02-10L 002	10125012902	5/8	1,9	4.3	92	42	53	102,5
MDF-A02-10L 004	10125013002	1/2	1,9	4.3	84	42	53	102,5
MDF-A02-15L 002	10125013302	5/8	2,3	4.3	104	52	53	107,5
MDF-A02-15L 004	10125013402	7/8	2,3	4.3	119	52	53	107,5

- Note:**
- 1) Extent of delivery: valve body without coil
 - 2) Available also as industrial package. Contact Sanhua for more details.

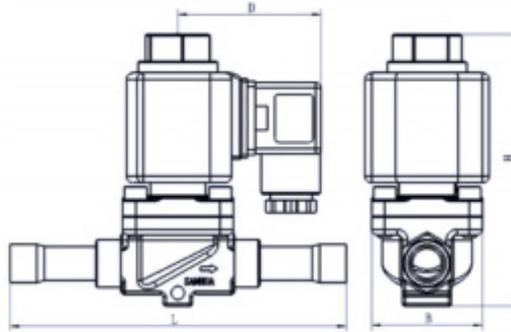
MDF-A02 (NO) SERIES

SOLENOID VALVE



DIMENSIONS

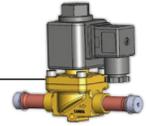
Valve Body - Solder Connection



Model Valve Body	Part Number ¹⁾²⁾	Solder Connection ODF		Kv [m ³ /h]	PED Category Fluid Group 2	Dimensions [mm]			
		[inch]	[mm]			L	B	D	H
MDF-A02-6H 002	10125001802	3/8		0,8	4.3	111	36	53	95
MDF-A02-6H 004	10125012302	1/2		0,8	4.3	127	36	53	95
MDF-A02-6H 006	10125009702		10	0,8	4.3	111	36	53	95
MDF-A02-6H 008	10125012402		12	0,8	4.3	127	36	53	95
MDF-A02-10H 002	10125012002	1/2		1,9	4.3	127	42	53	102,5
MDF-A02-10H 004	10125012702	5/8	16	1,9	4.3	160	42	53	102,5
MDF-A02-10H 006	10125012802		12	1,9	4.3	127	42	53	102,5
MDF-A02-15H 004	10125013102	7/8	22	2,3	4.3	176	52	53	107,5
MDF-A02-15H 006	10125013202	5/8	16	2,3	4.3	176	52	53	107,5
MDF-A02-20H 002	10125013502	7/8	22	5	4.3	191	60	53	124
MDF-A02-20H 004	10125013602	1-1/8		5	4.3	214	60	53	124
MDF-A02-20H 008	10125013702		28	5	4.3	214	60	53	124
MDF-A02-22H 002	10125013802	7/8	22	6	4.3	281	60	53	124
MDF-A02-22H 004	10125013902	1-3/8	35	6	I	281	60	53	124
MDF-A02-22H 008	10125014002	1-1/8		6	4.3	281	60	53	124
MDF-A02-22H 012	10125015202		28	6	4.3	281	60	53	124

Note: 1) Extent of delivery: valve body without coil
 2) Available also as industrial package. Contact Sanhua for more details.

MDF-A02 (NO) SERIES SOLENOID VALVE



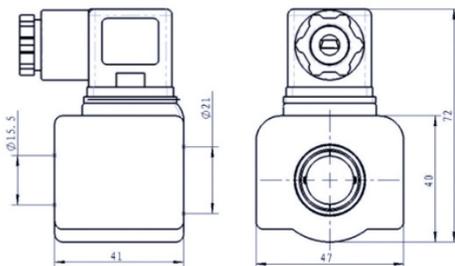
TECHNICAL PARAMETERS OF COIL

Model Coil	Part Number ¹⁾	Plug type ²⁾	Supply	Rated Voltage [V]	Power [W]	Voltage Tolerance	Insulation Class	Protection Class (w/plug)	UL Approval
MQ-A02024-000001	10820004502	DIN Plug	AC	24	12,5 (50Hz) 10,5 (60Hz)	-15% +10%	F	IP67	NO
MQ-A0211A-000001	10820003702			110 to 120					NO
MQ-A0222G-000001	10820004102			220 to 240					NO
MQ-D02012-000001	10820006702	DC	DC	12	10	±10%			NO
MQ-D02024-000001	10820006902			24					NO

Note: 1) Extent of delivery: coil body, fastening screw for the coil body, plug for electrical connection incl. Gaskets and fastening screws
2) Outer cable diameter: 7,1 to 9,7mm and cable core 0,75 to 2,5mm²

DIMENSIONS - COILS

MQ-A02 (Coils with DIN Plug):



ACCESSORIES

Bracket

Model ¹⁾	Part Number	Applicable Valve Models	
		Solder	Flare
MDF-A03-033001	20125000902	MDF-A02-6H	MDF-A02-6L
		MDF-A02-10H	MDF-A02-10L
		MDF-A02-15H	MDF-A02-15L

Note: 1) Extent of delivery: bracket and screw

