

# 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.



## FEATURES

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

## GENERAL SPECIFICATIONS

- Applicable for all common HFC, HFO refrigerants such as: R134a, R404A, R407A/F, R407C, R410A, R448A, R449A, R450A, R452A, R513A, R507A<sup>1)</sup>
- Medium temperature TS min./max.:
  - MDF 2H...22H and MDF 2L...15L: -30°C/105°C
  - MDF 25H...40H: -40°C/140°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 or PED

**Note:** 1) Flammable refrigerants like R32, R290, R1234ze(E), R1234yf on request



**TECHNICAL PARAMETERS OF VALVE BODY**

Valve Body		Usable Coils	Normal position	Actuation	Kv [m <sup>3</sup> /h]	MOP [Mpa]	Max. OPD [Mpa]		Min. OPD <sup>7)</sup> [Mpa]	
Solder	Flare						AC <sup>4)</sup> coil	DC <sup>5)6)</sup> coil		
MDF-A03-2H	MDF-A03-2L	AC + DC		Direct	0,16		3,1	3,1	0,00	
MDF-A03-3H	MDF-A03-3L				0,23					
MDF-A03-6H	MDF-A03-6L	AC	NC <sup>1)</sup>	Pilot <sup>2)</sup>	0,8	4,5	NP	2,8	0,005	
MDF-D03-6H	MDF-D03-6H	DC			3,1		NR			
MDF-A03-10H	MDF-A03-10L	AC			1,9		NR			
MDF-D03-10H	MDF-D03-10H	DC			2,3		2,8			
MDF-A03-15H	MDF-A03-15L	AC			5,0		NR			
MDF-D03-15H	MDF-D03-15L	DC			5,9		2,8			
MDF-A03-20H					10,0		NR			
MDF-A03-22H					15,0		2,8	0,007		
MDF-B03-25H	-	AC + DC			25,0		3,1	3,1		0,02
MDF-B03-32H										
MDF-B03-40H										

- Note:**
- 1) NC means: Normally closed valve
  - 2) Membrane operated
  - 3) Piston operated
  - 4) NP means: not permitted to use, select MDF-A03 model
  - 5) NR means: not recommended to use, Only possible with R134a and min. evaporation temp. / max. condensing temp. -15°C/+58°C, select MDF-D03 model
  - 6) Pressure values valid for 24V DC coil. Values for 12V DC coils on request
  - 7) Min. OPD: values referred to 60% of nominal flow

# MDF SERIES

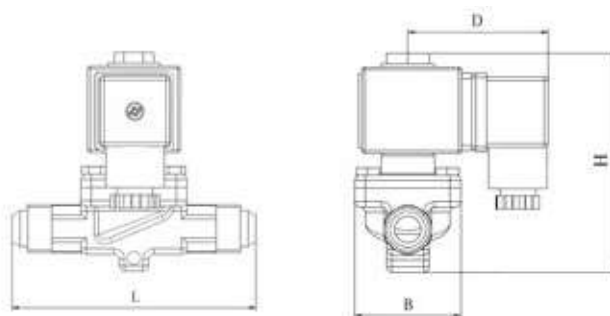
## Solenoid Valve



### DIMENSIONS

Valve Body

Thread Connection



Model Valve Body	Part Number* 1)	SAE Flare Connection [inch]	Kv [m <sup>3</sup> /h]	PED Category Group 2	Dimensions [mm]			
					L	B	D	H
MDF-A03-2L 001	10125000102	1/4	0,16	4.3	59	30	53	82
MDF-A03-3L 001	10125009202	1/4	0,23	4.3	59	30	53	82
MDF-A03-3L 003	10125004402	3/8	0,23	4.3	70	30	53	82
MDF-A03-6L 001	10125009302	3/8	0,8	4.3	69	36	53	88
MDF-D03-6L 005	10125018002	3/8	0,8	4.3	69	36	53	88
MDF-A03-6L 003	10125004502	1/2	0,8	4.3	75	36	53	88
MDF-D03-6L 003	10125017802	1/2	0,8	4.3	75	36	53	88
MDF-A03-10L 003	10125005402	1/2	1,9	4.3	84	42	53	96
MDF-D03-10L 003	10125018902	1/2	1,9	4.3	84	42	53	96
MDF-A03-10L 001	10125009402	5/8	1,9	4.3	92	42	53	96
MDF-D03-10L 001	10125018702	5/8	1,9	4.3	92	42	53	96
MDF-A03-15L 001	10125009502	5/8	2,3	4.3	104	52	53	100
MDF-D03-15L 001	10125019302	5/8	2,3	4.3	104	52	53	100
MDF-A03-15L 003	10125004802	7/8	2,3	4.3	119	52	53	100
MDF-D03-15L 003	10125019502	7/8	2,3	4.3	119	52	53	100

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

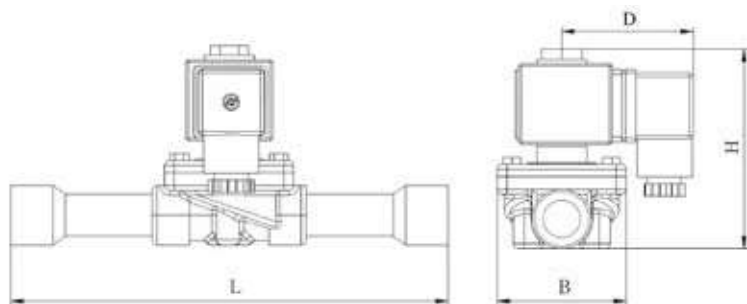
# MDF SERIES

## Solenoid Valve



### DIMENSIONS

Valve Body - Inch Solder Connection



Model Valve Body	Part Number*1)	Solder Connection ODF	Kv	PED Category Group 2	Dimensions [mm]			
		[inch]	[m <sup>3</sup> /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-D03-6H 001	10125017402	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-D03-6H 003	10125017502	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-D03-10H 001	10125017202	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-D03-10H 003	10125018402	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-D03-15H 005	10125017102	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-D03-15H 003	10125019002	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
MDF-B03-25H 003	10125006902	1-1/8	10	4,3	256	76	53	144
MDF-A03-22H 003	10125005102	1-3/8	5,9	I	281	60	53	117
MDF-B03-25H 004	10125006802	1-3/8	10	I	280	76	53	144
MDF-B03-32H 001	10125009102	1-3/8	15	I	281	76	53	144
MDF-B03-32H 002	10125007502	1-5/8	15	I	281	76	53	144
MDF-B03-40H 002	10125004302	1-5/8	25	I	281	84	53	152
MDF-B03-40H 004	10125007702	2-1/8	25	I	281	84	53	152

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

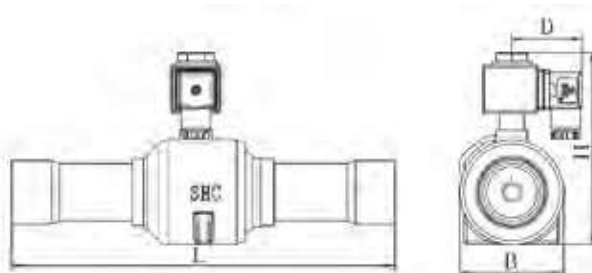
# MDF SERIES

## Solenoid Valve



### DIMENSIONS

Valve Body – Metrical Solder Connection



Model Valve Body	Part Number <sup>1)</sup>	Solder Connection ODF	Kv	PED Category Group 2	Dimensions [mm]			
		[mm]	[m <sup>3</sup> /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-D03-6H 005	10125016802	10	0,8	4.3	111	36	53	88
MDF-A03-6H 007	10125006702	12	0,8	4.3	127	36	53	88
MDF-D03-6H 007	10125018202	12	0,8	4.3	127	36	53	88
MDF-A03-10H 005	10125003502	12	1,9	4.3	127	42	53	95
MDF-D03-10H 005	10125017002	12	1,9	4.3	127	42	53	95
MDF-A03-10H 003	10125006302	16	1,9	4.3	160	42	53	95
MDF-D03-10H 003	10125018402	16	1,9	4.3	160	42	53	95
MDF-A03-15H 005	10125003702	16	2,3	4.3	176	52	53	100
MDF-D03-15H 005	10125017102	16	2,3	4.3	176	52	53	100
MDF-A03-15H 003	10125005002	22	2,3	4.3	176	52	53	100
MDF-D03-15H 003	10125019002	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
MDF-B03-25H 005	10125007002	28	10	4.3	256	76	53	144
MDF-A03-22H 003	10125005102	35	5,9	I	281	60	53	117
MDF-B03-25H 004	10125006802	35	10	I	280	76	53	144
MDF-B03-32H 001	10125009102	35	15	I	281	76	53	144
MDF-B03-32H 003	10125007102	42	15	I	281	76	53	144
MDF-B03-40H 003	10125007602	42	25	I	281	84	53	152
MDF-B03-40H 004	10125007702	54	25	I	281	84	53	152

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



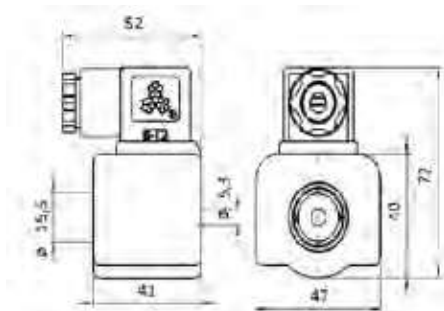
**TECHNICAL PARAMETERS OF COIL**

Model Coil <sup>1)</sup>	Part Number <sup>2)</sup>	Plug type	Supply	Rated Voltage [V]	Power [W]	Voltage Tolerance	Insulation Class	Protection Class (w/plug)
MQ-A03024-000001	10820009902	DIN Plug	AC	24	10,5W (50Hz) 8,5W (60Hz)	-15% +10%	F	IP67
MQ-A0311A-000001	10820010102			110 to 120	12W (50Hz) 10W (60Hz)			
MQ-A0322G-000001	10820010002			220 to 240	12W (50Hz) 10W (60Hz)			
MQ-A11024-000001	10820009402	Quick Install Plug <sup>3)</sup>	AC	24	9,5 (50Hz) 8,5 (60Hz)	-15% +10%		
MQ-A1111A-000001	10820009202			110 to 120	11,5 (50Hz) 10,0 (60Hz)			
MQ-A1122G-000001	10820009002			220 to 240	11 (50Hz) 9,5 (60Hz)			
MQ-D03012-000002	10820001302	DIN Plug	DC	12	15	+10% -10%		
MQ-D03024-000002	10820001002			24				

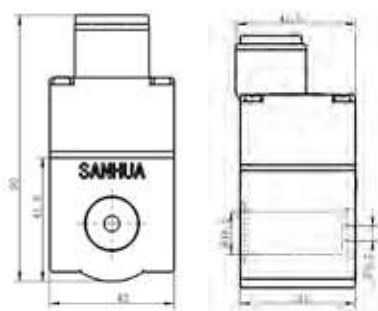
- Note:** 1) Match with valve body: Please respect information in table “Technical Parameters of valve body”. See page 2 of this document  
 2) Extent of delivery: coil body, fastening screw for the coil body, plug for electrical connection incl. Gaskets and fastening screws  
 3) Outer cable diameter: 7,1 to 9,7mm and cable core 0,75 to 2,5mm<sup>2</sup>

**DIMENSIONS - COILS**

MQ-A03 and MQ-D03 (Coils with DIN Plug):

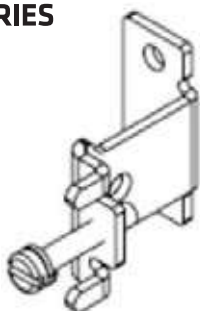


MQ-11 (Coils with Quick Install Plug):



**ACCESSORIES**

Bracket



Model <sup>1)</sup>	Part Number	Applicable Valve Models	
		Solder	Flare
MDF-A03-033001	20125000902	MDF-A03-2H	MDF-A03-2L
		MDF-A03-3H	MDF-A03-3L
		MDF-A03-6H	MDF-A03-6L
		MDF-A03-10H	MDF-A03-10L
		MDF-A03-15H	MDF-A03-15L

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