

FLAMEPROOF

Ex d Solenoid Valves



HAFNER

Ex d: Flameproof solenoid valves



Flameproof solenoid valves are widely used in the oil- and gas industry or chemical applications. Products have to be extremely robust and reliable in such demanding applications.

HAFNER's Ex d coil is therefore made from 1.4404 stainless steel and can resist temperatures of -40°C. The system is ATEX as well as IECEX certified.

The CCC certification for China is currently in progress and products with the CCC labelling will be available on request.

CNOMO-interface

The solenoid system comes with a CNOMO adapter-head. This allows an easy assembly of the solenoid system (coil) with the valve-bodies of the MC/MNC series. Valves can be supplied completely assembled on request.



CNOMO-interface



Assembled product

Printing on the coils:

HAFNER Pneumatika Kft. H-9228 Halászi, Püski út 3.
MA52 3/2 NC 24DC EXD G TS
 II 2 G Ex db IIC T6 Gb -40°C ≤ Ta ≤ +50°C
 II 2 D Ex tb IIIC T80°C Db -40°C ≤ Ta ≤ +50°C
 24 VDC +/-10%
 0408 89 mA
 HAFNER MAX. PRESSURE: 10 bar 2 W
 ATEX: TÜV-A 21ATEX0102 X 100% ED
 IECEX: IECEX EPS 21.0055X

HAFNER Pneumatika Kft. H-9228 Halászi, Püski út 3.
MA52 3/2 NC 110AC EXD G TS
 II 2 G Ex db IIC T6 Gb -40°C ≤ Ta ≤ +50°C
 II 2 D Ex tb IIIC T80°C Db -40°C ≤ Ta ≤ +50°C
 110 VAC +/-10%
 0408 50/60 Hz
 HAFNER MAX. PRESSURE: 10 bar 27 mA
 ATEX: TÜV-A 21ATEX0102 X 3 VA
 IECEX: IECEX EPS 21.0055X 100% ED

HAFNER Pneumatika Kft. H-9228 Halászi, Püski út 3.
MA52 3/2 NC 230AC EXD G TS
 II 2 G Ex db IIC T6 Gb -40°C ≤ Ta ≤ +50°C
 II 2 D Ex tb IIIC T80°C Db -40°C ≤ Ta ≤ +50°C
 230 VAC +/-10%
 0408 50/60 Hz
 HAFNER MAX. PRESSURE: 10 bar 13 mA
 ATEX: TÜV-A 21ATEX0102 X 3 VA
 IECEX: IECEX EPS 21.0055X 100% ED

Material list:

Coil

- Housing: 1.4404
- Other inner parts: 1.4310 / 1.4105
- Seals: FPM



Pilot-head MH 52(Aluminum)

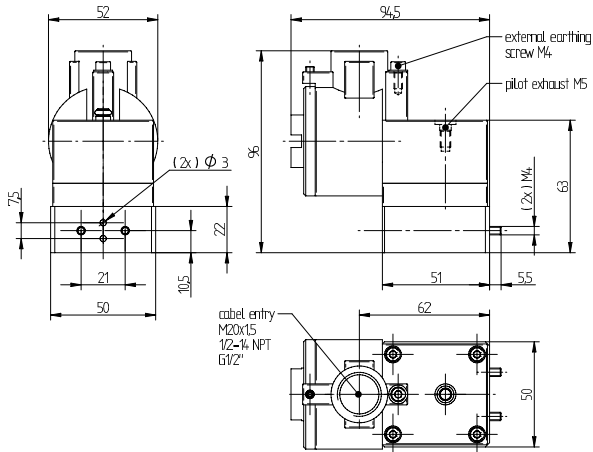
- Head: Aluminum
- Inner parts: Brass
- Seals: NBR

or

Pilot-head MH 52 VES (Stainless steel)

- Head: 1.4404
- Inner parts: 1.4404
- Seals: FPM

When this solenoid system is used in combination with "ATEX certified" mechanical components conforming EN 13463-1:2001 and PrEN 13463-5:2000, the entire valve can be used in explosive hazardous environment zone 1, 2, 21 and 22.



MH 52 ... (VES) Ex d

ATEX and IECEx approved flameproof coil for gas and dust explosion hazardous environment.

Voltage: 24VDC, 110VAC, 230VAC

Voltage tolerance: - 10...+ 10 %

Relative duty cycle: 100 %

Temperature range: -40°C...+50°C
(please consider temperature range of the selected valve)

Ignition protection type: Flameproof

Protection according to ENBS60529 : 1992 : IP 67

Coil rating according to DIN VDE 0580: Class F

Wire class: H

Ex-marking on coil:  II 2G Ex db IIC T6 Gb
II 2D Ex tb IIIC T80°C Db

Manual override: bistable to turn, others on request

Delivery content without cable gland. Ex d rated cable glands can be supplied on request.

The ATEX approval is only valid as long as the associated components are used.

Type	Pilot-head	Operating press.	Power cons.	Temperature class	Weight
MH 52 24DC Ex d *	Aluminum	max. 10 bar	2.0 Watt	T6 (85° C)	1,15 kg
MH 52 VES 24DC Ex d *	Stainless steel	max. 10 bar	2.0 Watt	T6 (85° C)	1,45 kg
MH 52 110AC Ex d *	Aluminum	max. 10 bar	3.0 VA	T6 (85° C)	1,15 kg
MH 52 VES 110AC Ex d *	Stainless steel	max. 10 bar	3.0 VA	T6 (85° C)	1,45 kg
MH 52 230AC Ex d *	Aluminum	max. 10 bar	3.0 VA	T6 (85° C)	1,15 kg
MH 52 VES 230AC Ex d *	Stainless steel	max. 10 bar	3,0 VA	T6 (85° C)	1,45 kg

* Please add letter for cable gland thread: - M = M20x1.5
- N = 1/2-14 NPT

ATEX-approved valves – Ex d – standard temperature range – aluminum



Interface between valve body and solenoid system according to CNOMO, therefore the types are called MC.

Base plate assembly due to solenoid coil is not possible.

Flameproof solenoids are displayed on page 3.

Example drawings including the solenoid are displayed on page 8.

Material: Aluminum, anodized
 Zone: 1, 2, 21, 22
 Temperature range: -10°C ... +50°C
 Ignition protection type: Ex d – flameproof
 Temperature class: T6 (solenoid)

Marking on valve   II 2 G Ex h IIC T6 Gb
 -10°C ≤ Ta ≤ 50°C
  II 2 D Ex h IIIC T80°C
 Db -10°C ≤ Ta ≤ 50°C

The following solenoid valves are available:

Type	Function	Port size	Installation	Further information on valve on page (in valve catalogue edition 2021)
MC 210 501 Ex d	2/2-way, single sol.	G 1/8"	in-line	2.5.1.1.13
MC 210 701 Ex d	2/2-way, single sol.	G 1/4"	in-line	2.5.1.1.13
MC 310 501 Ex d	3/2-way, single sol.	G 1/8"	in-line	2.5.1.1.14
MOC 310 501 Ex d	3/2-way, n.o. single sol.	G 1/8"	in-line	2.5.1.1.14
MC 310 701 Ex d	3/2-way, single sol.	G 1/4"	in-line	2.5.1.1.14
MOC 310 701 Ex d	3/2-way, n.o. single sol.	G 1/4"	in-line	2.5.1.1.14
MC 310 121 Ex d	3/2-way, single sol.	G 1/2"	in-line	2.5.1.1.15
MOC 310 121 Ex d	3/2-way, n.o. single sol.	G 1/2"	in-line	2.5.1.1.15
MC 320 501 Ex d	3/2-way, double sol.	G 1/8"	in-line	2.5.1.1.18
MC 320 701 Ex d	3/2-way, double sol.	G 1/4"	in-line	2.5.1.1.18
MC 320 121 Ex d	3/2-way, double sol.	G 1/2"	in-line	2.5.1.1.19
MC 510 501 Ex d	5/2-way, single sol.	G 1/8"	in-line	2.5.2.1.3
MC 510 701 Ex d	5/2-way, single sol.	G 1/4"	in-line	2.5.2.1.3
MC 510 121 Ex d	5/2-way, single sol.	G 1/2"	in-line	2.5.2.1.4
MC 520 501 Ex d	5/2-way, double sol.	G 1/8"	in-line	2.5.2.1.9
MC 520 701 Ex d	5/2-way, double sol.	G 1/4"	in-line	2.5.2.1.9
MC 520 121 Ex d	5/2-way, double sol.	G 1/2"	in-line	2.5.2.1.10
MC 53_501 Ex d	5/3-way, different version	G 1/8"	in-line	2.5.3.1.2
MC 53_701 Ex d	5/3-way, different version	G 1/4"	in-line	2.5.3.1.2
MC 53_121 Ex d	5/3-way, different version	G 1/2"	in-line	2.5.3.1.3

Valves with interface according to NAMUR-standard

MNC 350 701 Ex d	3/2-way & 5/2-way	G 1/4"	1/4" NAMUR	2.9.1.3
MNC 310 701 Ex d	3/2-way, single sol.	G 1/4"	1/4" NAMUR	2.9.1.1.1
MNC 310 711 Ex d	3/2-way, single sol.	G 1/4"	1/4" NAMUR	2.9.1.1.1
MNC 310 121 Ex d	3/2-way, single sol.	G 1/2"	1/2" NAMUR	2.9.1.1.2
MNC 510 701 Ex d	5/2-way, single sol.	G 1/4"	1/4" NAMUR	2.9.1.2.1
MNC 510 711 Ex d	5/2-way, single sol.	G 1/4"	1/4" NAMUR	2.9.1.2.1
MNC 510 121 Ex d	5/2-way, single sol.	G 1/2"	1/2" NAMUR	2.9.1.2.2
MNC 520 701 Ex d	5/2-way, double sol.	G 1/4"	1/4" NAMUR	2.9.1.2.3
MNC 520 121 Ex d	5/2-way, double sol.	G 1/2"	1/2" NAMUR	2.9.1.2.3
MNC 53_701 Ex d	5/3-way, different version	G 1/4"	1/4" NAMUR	2.9.1.4
MNC 53_121 Ex d	5/3-way, different version	G 1/2"	1/2" NAMUR	2.9.1.4

ATEX-approved valves – Ex d – low temperature range – aluminium







Material: Aluminum, anodized
 Zone: 1, 2, 21, 22
 Temperature range: -40°C ... +50°C

Interface between valve body and solenoid system according to CNOMO, therefore the types are called MC.

Ignition protection type: Ex d – flameproof
 Temperature class: T6 (solenoid) ❄️

Base plate assembly due to solenoid coil is not possible.

Marking on valve


 II 2 G Ex h IIC T6 Gb
 -50°C ≤ Ta ≤ 50°C

 II 2 D Ex h IIIC T80°C
 Db -50°C ≤ Ta ≤ 50°C

Flameproof solenoids type are displayed on page 3.

Example drawings including the solenoid are displayed on page 8.

The following solenoid valves are available:

Type	Function	Port size	Installation	Further information on valve on page (in valve catalogue edition 2021)
MC 310 501 TT Ex d	3/2-way, single sol.	G 1/8"	in-line	2.11.5.1.2
MOC 310 501 TT Ex d	3/2-way, n.o. single sol.	G 1/8"	in-line	2.11.5.1.2
MC 310 701 GTT Ex d	3/2-way, single sol.	G 1/4" - 1/4" NPT	in-line	2.11.5.1.2
MOC 310 701 GTT Ex d	3/2-way, n.o. single sol.	G 1/4" - 1/4" NPT	in-line	2.11.5.1.2
MC 320 501 TT Ex d	3/2-way, double sol.	G 1/8"	in-line	2.11.5.1.2
MC 320 701 GTT Ex d	3/2-way, double sol.	G 1/4"	in-line	2.11.5.1.2
MC 510 501 GTT Ex d	5/2-way, single sol.	G 1/8"	in-line	2.11.5.2.1
MC 510 701 GTT Ex d	5/2-way, single sol.	G 1/4" - 1/4" NPT	in-line	2.11.5.2.1
MC 520 501 GTT Ex d	5/2-way, double sol.	G 1/8"	in-line	2.11.5.2.2
MC 520 701 GTT Ex d	5/2-way, double sol.	G 1/4" - 1/4" NPT	in-line	2.11.5.2.2
MC 53_ 501 GTT Ex d	5/3-way, different version	G 1/8"	in-line	2.11.5.2.2
MC 53_ 701 GTT Ex d	5/3-way, different version	G 1/4" - 1/4" NPT	in-line	2.11.5.2.2

Valves with interface according to NAMUR-standard

MNC 310 701 TT Ex d	3/2-way, single sol.	G 1/4" - 1/4" NPT	1/4" NAMUR	2.11.6.1
MNC 510 701 TT Ex d	5/2-way, single sol.	G 1/4" - 1/4" NPT	1/4" NAMUR	2.11.6.2.1
MNC 510 711 TT Ex d	5/2-way, single sol.	G 1/4"	1/4" NAMUR	2.11.6.2.1
MNC 520 701 TT Ex d	5/2-way, double sol.	G 1/4" - 1/4" NPT	1/4" NAMUR	2.11.6.2.2
MNC 531 701 TT Ex d	5/3-way, different version	G 1/4" - 1/4" NPT	1/4" NAMUR	2.11.6.2.2

ATEX-approved valves – Ex d – standard temperature range – stainless steel




Interface between valve body and solenoid system according to CNOMO, therefore the types are called MC.

Base plate assembly due to solenoid coil is not possible.





Flameproof solenoids are displayed on page 3.

Example drawings including the solenoid are displayed on page 8.

Material: Stainless steel, 316L 
 Zone: 1, 2, 21, 22
 Temperature range: -10°C ... +50°C

Ignition protection type: Ex d – flameproof
 Temperature class: T6 solenoid

Marking on valve



  II 2 G Ex h IIC T6 Gb
 -10°C ≤ Ta ≤ 50°C
  II 2 D Ex h IIIC T80°C
 Db -10°C ≤ Ta ≤ 50°C

The following solenoid valves are available:

Type	Function	Port size	Installation	Further information on valve on page (in valve catalogue edition 2021)
MC 310 701 VES Ex d	3/2-way, single sol.	G 1/4"	in-line	2.12.4.2
MOC 310 701 VES Ex d	3/2-way, n.o. single sol.	G 1/4"	in-line	2.12.4.2
MC 310 121 VES Ex d	3/2-way, single sol.	G 1/2"	in-line	2.12.4.3
MC 510 701 VES Ex d	5/2-way, single sol.	G 1/4"	in-line	2.12.4.4
MC 510 121 VES Ex d	5/2-way, single sol.	G 1/2"	in-line	2.12.4.4
MC 520 701 VES Ex d	5/2-way, double sol.	G 1/4"	in-line	2.12.4.5
MC 520 121 VES Ex d	5/2-way, double sol.	G 1/2"	in-line	2.12.4.5
MC 53_701 VES Ex d	5/3-way, different version	G 1/4"	in-line	2.12.4.6
MC 53_121 VES Ex d	5/3-way, different version	G 1/2"	in-line	2.12.4.6
Valves with interface according to NAMUR-standard				
MNC 350 701 VES Ex d	3/2-way & 5/2-way	G 1/4"	1/4" NAMUR	2.12.5.3
MNC 310 701 VES Ex d	3/2-way, single sol.	G 1/4"	1/4" NAMUR	2.12.5.1
MNC 510 701 VES Ex d	5/2-way, single sol.	G 1/4"	1/4" NAMUR	2.12.5.2
MNC 520 701 VES Ex d	5/2-way, double sol.	G 1/4"	1/4" NAMUR	2.12.5.2





ATEX-approved valves – Ex d – low temperature range – stainless steel



Material: Stainless steel, 316L 
 Zone: 1, 2, 21, 22
 Temperature range: -40°C ... +50°C 

Ignition protection type: Ex d – flameproof
 Temperature class: T6 (solenoid)

Marking on valve

  II 2 G Ex h IIC T6 Gb
 -50°C ≤ Ta ≤ 50°C
  II 2 D Ex h IIIC T80°C
 Db -50°C ≤ Ta ≤ 50°C

Interface between valve body and solenoid system according to CNOMO, therefore the types are called MC.

Base plate assembly due to solenoid coil is not possible.

Flameproof solenoids are displayed on page 3.

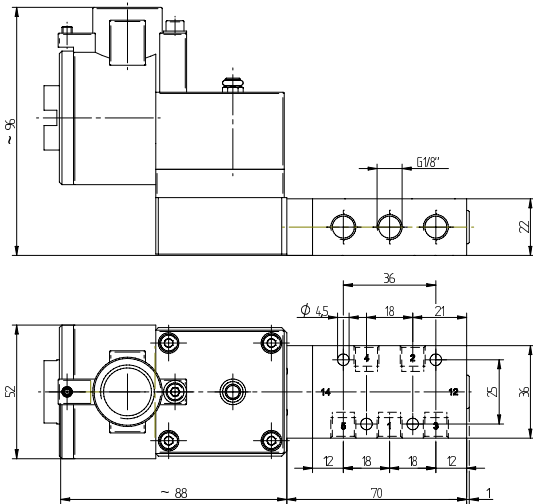
Example drawings including the solenoid are displayed on page 8.

The following **solenoid valves** are available:

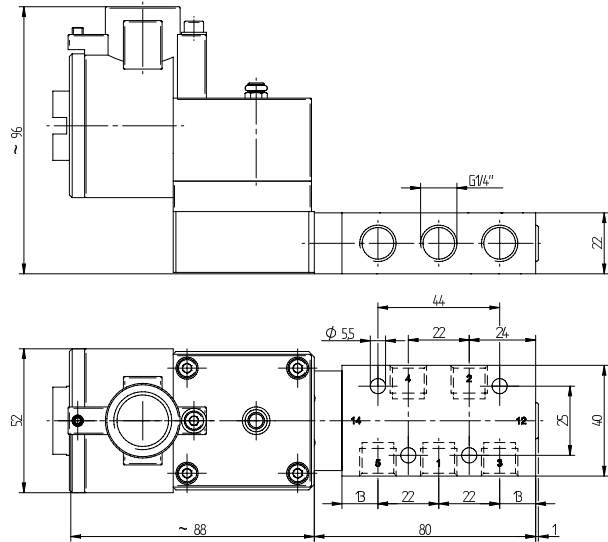
Type	Function	Port size	Installation	Further information on valve on page (in valve catalogue edition 2021)
MC 310 701 VES TT Ex d	3/2-way, single sol.	G 1/4"	in-line	2.12.4.2
MOC 310 701 VES TT Ex d	3/2-way, n.o. single sol.	G 1/4"	in-line	2.12.4.2
MC 510 701 VES TT Ex d	5/2-way, single sol.	G 1/4"	in-line	2.12.4.4
MC 520 701 VES TT Ex d	5/2-way, double sol.	G 1/4"	in-line	2.12.4.5
MC 53_ 701 VES TT Ex d	5/3-way, different version	G 1/4"	in-line	2.12.4.6

Valves with interface according to NAMUR-standard				
MNC 350 701 VES TT Ex d	3/2-way & 5/2-way	G 1/4"	1/4" NAMUR	2.12.5.3
MNC 310 701 VES TT Ex d	3/2-way, single sol.	G 1/4"	1/4" NAMUR	2.12.5.1
MNC 510 701 VES TT Ex d	5/2-way, single sol.	G 1/4"	1/4" NAMUR	2.12.5.2
MNC 520 701 VES TT Ex d	5/2-way, double sol.	G 1/4"	1/4" NAMUR	2.12.5.2

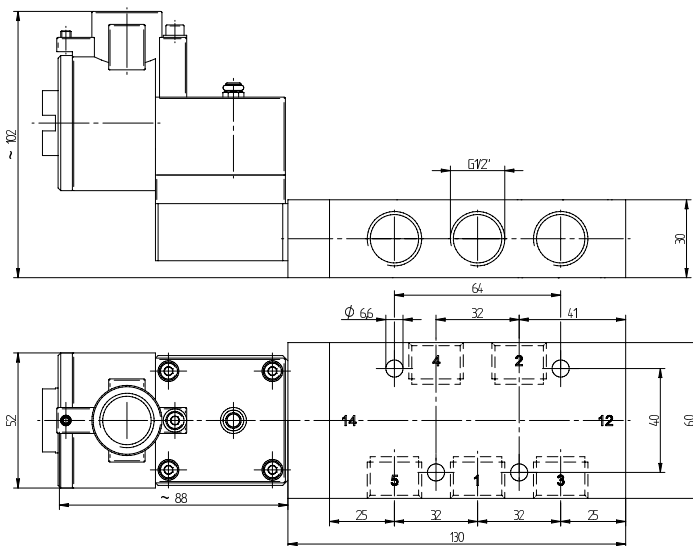
Example drawings of solenoid valves with Ex d solenoid system



MC 510 501 Ex d



MC 510 701 Ex d/
MNC 510 701 Ex d



MC 510 121 Ex d/
MNC 510 121 Ex d



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