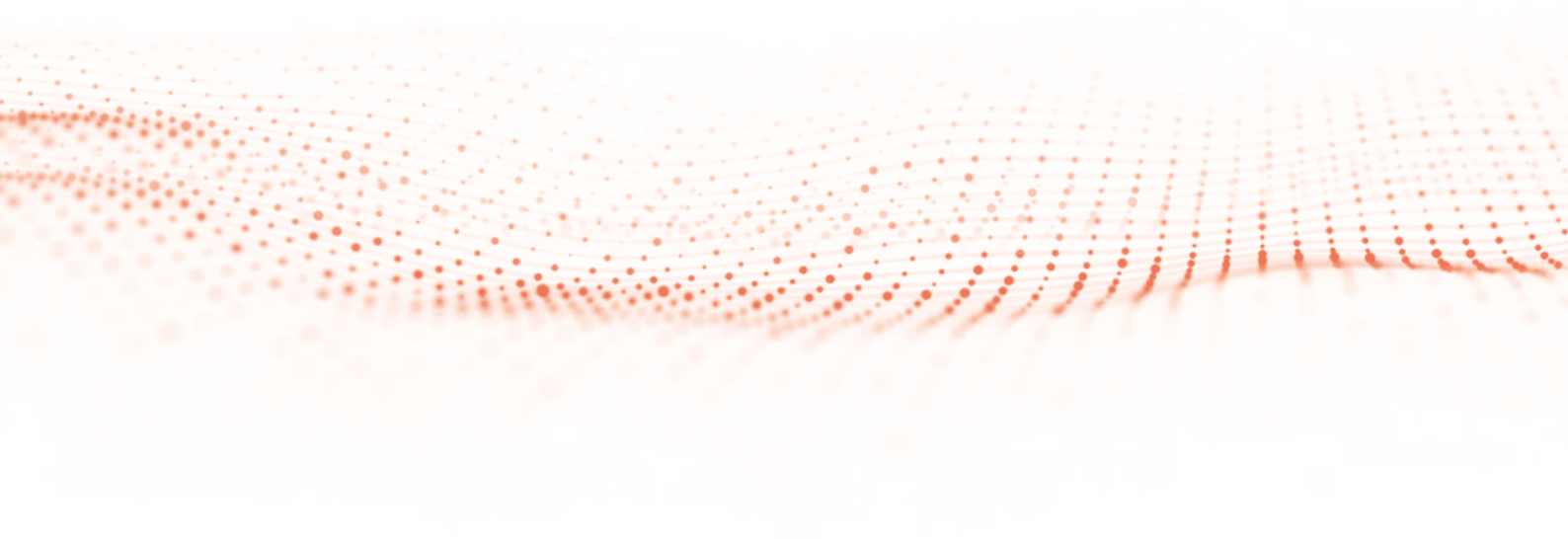
Trusted for decades. Built for the future.

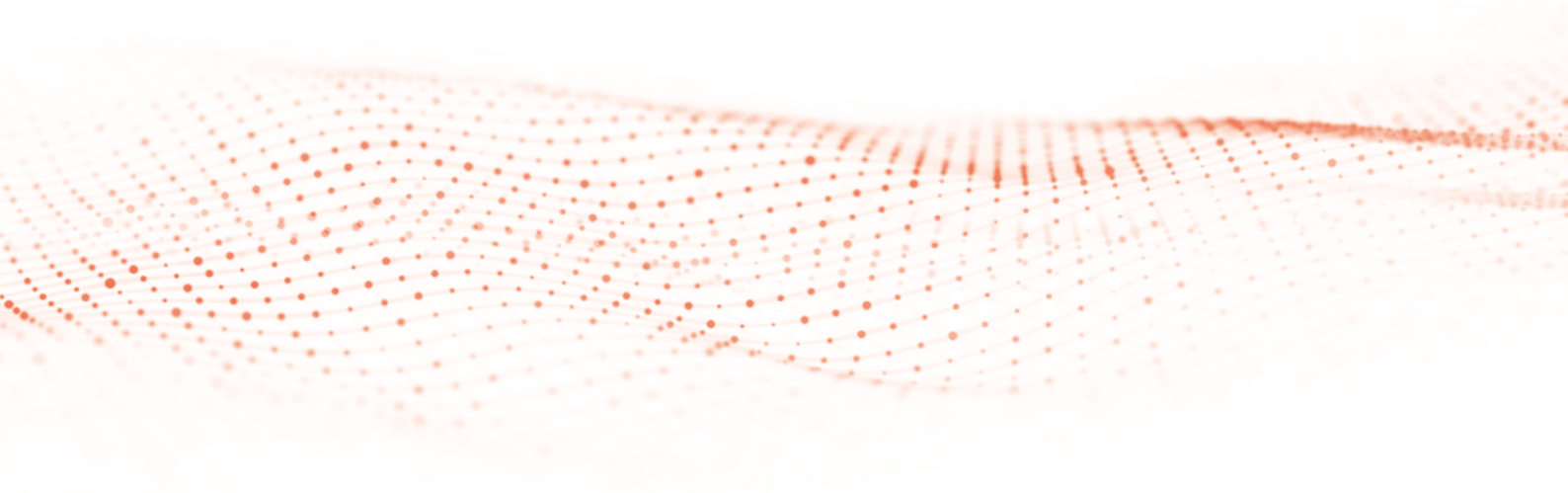
Solenoid Valves



A **M&M** Brand



Trusted for decades. Built for the future.



Technology for fluid control



Reputable niche player

Founded in 1979, established reputation high-quality solenoid and piston valves. Known for reliability and innovation in commercial and industrial flow control.

We offer products that have been designed with over 40 years of industry and applications knowledge.

Our research and development ensures cutting edge products are available for multiple applications across multiple industries.

M&M solve customer challenges and develop new solutions that are tailored to the need of our clients.

We offer dedicated, expert service and support from initial inquiry, to product installation, to long term after sales care.



Diverse product portfolio for general industries

With over 40 years of extensive knowledge and experience, M&M has provided products and services worldwide for virtually every industrial flow control application.

- Comprehensive portfolio of solenoid, valves manifold and piston valves for air, water, and process fluids used in industrial applications.
- We are a trusted supplier to OEMs in various sectors, including industrial automation, food and beverage, steam solutions, compressors and compressed air, textile machinery, agricultural equipment, industrial refrigeration, medical equipment, packaging machinery, and the marine industry, among others.

Introduction

A **M&M** Brand

M&M Instruments are leading manufacturers of industrial solenoid valves, made under the M&M International brand. Whether designing solutions for stand-alone valves or a customised OEM installation we have developed an enviable reputation for quality products, reliability and innovation.

With facilities based in Italy and sales offices worldwide, we can provide solenoid valves to operate a wide variety of applications anywhere in the world.

Our product line covers a full range of valves for general and special-purpose including:

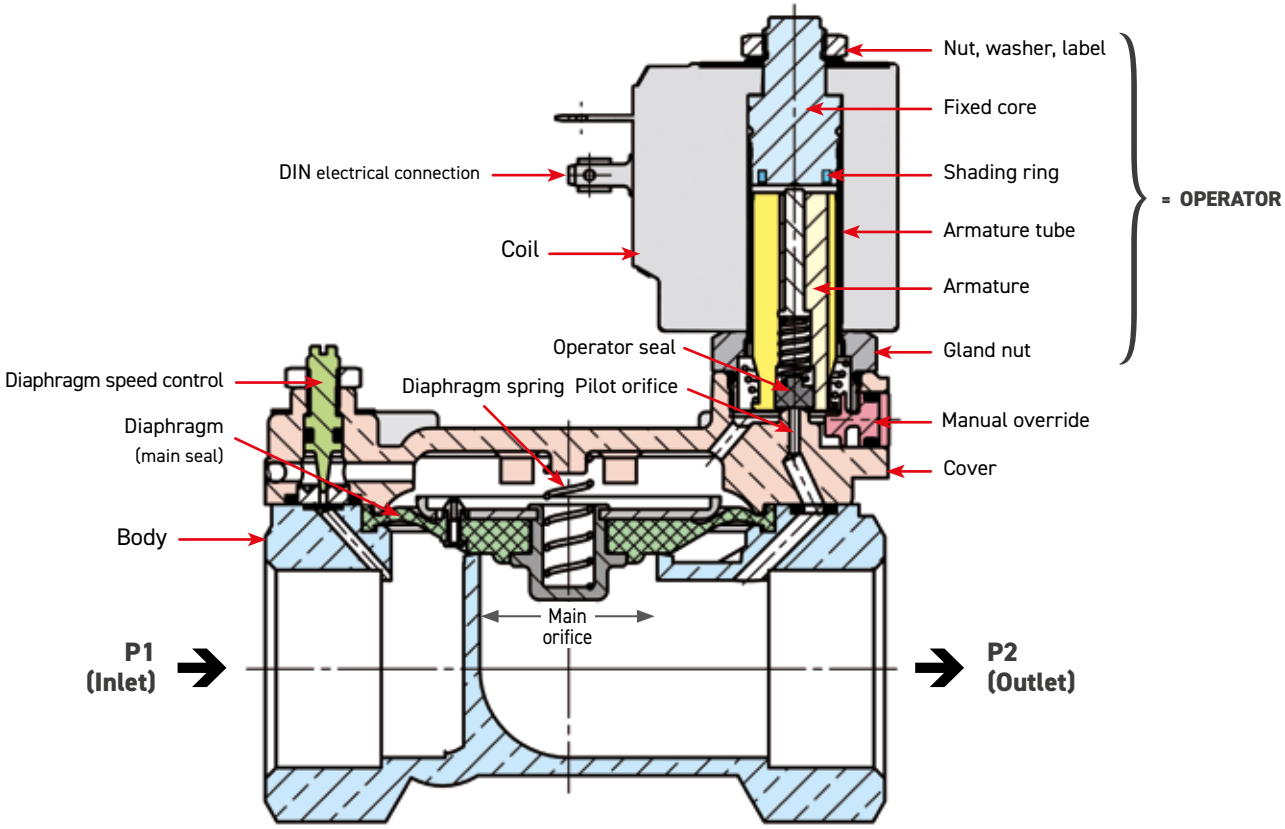
- Air
- Water
- Steam
- Automation
- Actuation
- High Pressure
- Aggressive Media
- Vacuum

Our solenoid valves can be manufactured with coils and enclosures covered by UL to meet application demands.

The advantages of solenoid valves manufactured under the M&M brand include:

- Robust construction for industrial applications featuring stainless steel orifice on most models
- Stainless steel operators with low residual magnetism according to 1.4105 EN 10088 (AISI 430F)
- High quality seal materials
  NBR, FKM, EPDM, PTFE, Sigodur (filled PTFE), Ruby, Kalrez®
- Fully interchangeable coils* with a wide range of AC and DC voltages. Coil orientation possible through 360°
- Coils tested 100% in compliance with the current EC directives compliance to RoHS directive and to relevant international standards upon request
- Development and realisation of special projects

*where applicable



Scheme of components of M&M International solenoid valves

Product Index

Valve	Code	Type of Connection	Page
	**B298**- (2/2 way direct acting) Normally closed	G 1/8" to ISO 228-1	8
	**D298/299**- (2/2 way direct acting) Normally closed	G 1/8" & 1/4" to ISO 228-1	9
	**RD298/299**- (2/2 way direct acting) Normally open	G 1/8" & 1/4" to ISO 228-1	10
	**B297 & RB297**- (2/2 way direct acting) Normally closed and normally open	G 1/8" to ISO 228-1	11
	**D262/263**- (2/2 way direct acting) Normally closed	G 1/8" & 1/4" to ISO 228-1	12
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Valve	Code	Type of Connection	Page
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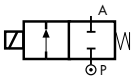
Vacuum

Various part numbers 44

2/2 way direct acting solenoid valve, G 1/8"

Common features
Body material: stainless steel (1.4305 EN 10088/AISI 303)
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Operator material: stainless steel
Protection class: IP 65 (with connector and gasket)

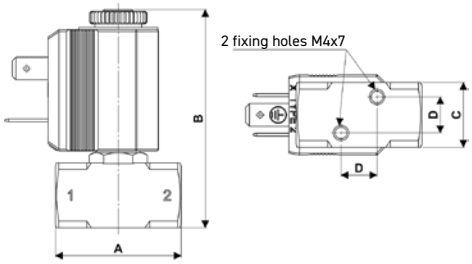
TYPE: B298



Normally Closed



Dimensions & weights		B298
G connection	[ISO 228]	1/8"
A	[mm]	35
B	[mm]	60.6
C	[mm]	18
D	[mm]	10
weight	[kg]	0.1



General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
B298DVC	1.5	1.3	0	22	18	2250	24 VDC
B298DVE	2.0	1.9	0	18	8	2200	24 V 50/60 Hz
B298DVG	2.5	2.7	0	13	2.5	2400	110 V 50 Hz - 120 V 60 Hz
B298DVH	3.0	3.5	0	8	1	2600	200 V 50 Hz - 220 V 60 Hz
						2700	230 V 50 Hz - 240 V 60 Hz

Flow direction overseat 1 → 2

B298 - FKM seal, NC -

Media: water, oil, air and aggressive fluids
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Seal material: foodgrade FKM
Coil power: AC 10 VA (holding)
AC 16 VA (inrush)
DC 7 W

Chemical industry

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
B298DKC	1.5	1.3	0	24	24	2250	24 VDC
B298DKE	2.0	1.9	0	18	15	2200	24 V 50/60 Hz
B298DKG	2.5	2.7	0	15	3	2400	110 V 50 Hz - 120 V 60 Hz
						2600	200 V 50 Hz - 220 V 60 Hz
						2700	230 V 50 Hz - 240 V 60 Hz

B298 - Kalrez® seal, NC -

Media: chemicals
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Seal material: Kalrez® Spectrum™ 6375
Coil power: AC 10 VA (holding)
AC 16 VA (inrush)
DC 7 W

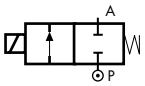
Options
Protective treatment (e.g. code B298DKCF)

2/2 way direct acting solenoid valve, G 1/8" – G 1/4"

Common features
Body material: stainless steel (1.4305 EN 10088/AISI 303)
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Operator material: stainless steel
Protection class: IP 65 (with connector and gasket)

Options
Available with body thread connection 1/8" (e.g. code D298DVC), performance ratings remain the same as D299DVC.
Silver shading ring (e.g. code D299DVCA)
NPT connection on request, minimum batch may be required (e.g. code D299DVCN)

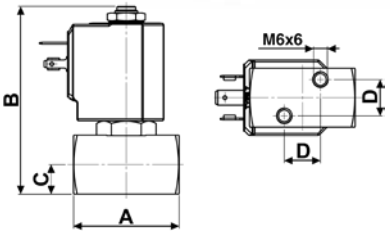
TYPE: D298/299



Normally Closed



Dimensions & weights		D298	D299
G connection	[ISO 228]	1/8"	1/4"
A	[mm]	45	45
B	[mm]	80	80
C	[mm]	12.5	12.5
D	[mm]	15.4	15.4
weight	[kg]	0.36	0.36



Flow direction overseat 1 → 2

General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
D299DVC	1.5	1.2	0	24	24	7250	24 VDC
D299DVG	2.5	3.3	0	18	18	7200	24 V 50/60 Hz
D299DVH	3.0	4.5	0	15	10	7400	110 V 50 Hz - 120 V 60 Hz
D299DVL	4.0	6.0	0	10	5.5	7600	200 V 50 Hz - 220 V 60 Hz
D299DVN	5.0	7.5	0	5	2.5	7700	230 V 50 Hz - 240 V 60 Hz

D298/299 - FKM seal, NC -

Media: water, oil, air and aggressive fluids
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Seal material: foodgrade FKM
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
EPDM seal, temperature max. 120 °C (e.g. code D298DEH)

Chemical industry

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
D299DKE	2.0	2.3	0	20	20	7250	24 VDC
D299DKG	2.5	3.3	0	18	16	7200	24 V 50/60 Hz
D299DKH	3.0	4.5	0	15	8	7400	110 V 50 Hz - 120 V 60 Hz
						7600	200 V 50 Hz - 220 V 60 Hz
						7700	230 V 50 Hz - 240 V 60 Hz

D298/299 - KALREZ® seal, NC -

Media: chemicals
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Seal material: Kalrez® Spectrum™ 6375
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
Protective treatment (e.g. code D299DKEF)

High pressure

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils high power - class 'H' only	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/ Hz]
D299DRB1	1.2	0.7	0	200	110	72Z1	24 VDC
D299DRC1	1.5	1.2	0	200	80	72K1	24 V 50/60 Hz
D299DRE1	2.0	2.3	0	140	30	74K1	110 V 50 Hz - 120 V 60 Hz
D299DRG1	2.5	3.3	0	90	23	77K1	230 V 50 Hz - 240 V 60 Hz
D299DRH1	3.0	4.5	0	50	14		

ATTENTION: When high pressure valves are supplied without a coil, their nameplates display the max. OPD of the valve when equipped with an AC (25 VA) and DC (22 W) coil (as shown in the table above). **When using alternative coil power ratings please ensure to request separately the appropriate nameplate at time of order.**

D298/299 - RUBY seal, NC -

Media[1]: water, oil, air and aggressive fluids
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Seal material: Ruby
Coil power: AC 25 VA (holding)
AC 50 VA (inrush)
DC 22 W

Notes
Seamless tube as standard
[1] Not 100% leak-proof when used with air/gases. Approximate leak rate is 1,5 ml/min at max. OPD.

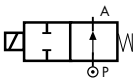
2/2 way direct acting solenoid valve, G 1/8" – G 1/4"

Common features
Body material: stainless steel (1.4305 EN 10088/AISI 303)
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Operator material: stainless steel
Protection class: IP 65 (with connector and gasket)

Options
Available with body thread connection 1/8" (e.g. code RD298DVA), performance ratings remain the same as RD299DVA
Silver shading ring (e.g. code RD299DVCA)
NPT connection on request, minimum batch may be required (e.g. code RD298DVGN)

Notes
Normally open version not available for orifice > Ø 3 mm
Protective treatment of operators is recommended, minimum batch may be required

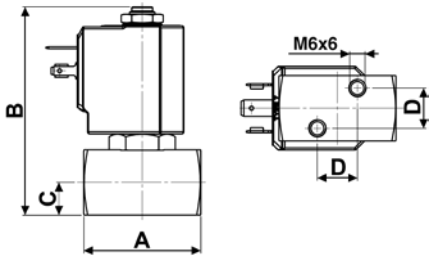
TYPE: RD298/299



Normally Open



Dimensions & Weights		RD298	RD299
G connection	[ISO 228]	1/8"	1/4"
A	[mm]	45	45
B	[mm]	77.5	77.5
C	[mm]	12.5	12.5
D	[mm]	15.4	15.4
weight	[kg]	0.36	0.36



General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
RD299DVA	1.0	0.6	0	30	30
RD299DVG	2.5	3.3	0	14	14
RD299DVH	3.0	4.5	0	9	9

Coils class 'H' only normally closed and normally open	
code	[Volts/ Hz]
7251	24 VDC
7201	24 V 50/60 Hz
7401	110 V 50 Hz - 120 V 60 Hz
7601	200 V 50 Hz - 220 V 60 Hz
7701	230 V 50 Hz - 240 V 60 Hz

Flow direction overseat 1 → 2

RD298/299 - FKM seal, NO -

Media: water, oil, air and aggressive fluids
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Seal material: foodgrade FKM
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
EPDM seal, temperature max. 120 °C (e.g. code RD299DEG)

High pressure

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
RD299DRA	1.0	0.6	0	100	100
RD299DRB	1.2	0.7	0	85	85
RD299DRC	1.5	1.2	0	55	55
RD299DRE	2.0	2.3	0	25	25
RD299DRG	2.5	3.3	0	19	19
RD299DRH	3.0	4.5	0	10	10

Coils class 'H' only normally closed and normally open	
code	[Volts/ Hz]
7251	24 VDC
7201	24 V 50/60 Hz
7401	110 V 50 Hz - 120 V 60 Hz
7601	200 V 50 Hz - 220 V 60 Hz
7701	230 V 50 Hz - 240 V 60 Hz

RD298/299 - RUBY SEAL, NO -

Media[2]: water and liquids
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Seal material: Ruby
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Notes
[2] Not 100% leak-proof when used with air/gases. Approximate leak rate is 1,5 ml/min at max. OPD.

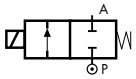
2/2 way direct acting solenoid valve, G 1/8"

Common features
Media[1]: water, oil, air
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Body material: brass (CW719R EN 12165) low lead content
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Operator material: stainless steel
Seal material: foodgrade FKM
Protection class: IP 65 (with connector and gasket)

Options
EPDM seal, temperature max. 120 °C (e.g. code RB297DEC)
NPT connection on request, minimum batch may be required (e.g. code RB297DVCN)

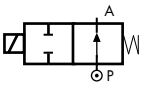
Notes
[1] Valve suitable for contact with food media as per the EEC Directives and Regulations. For more specific information, please contact M&M Instruments Sales Department.

TYPE: B297



Normally Closed

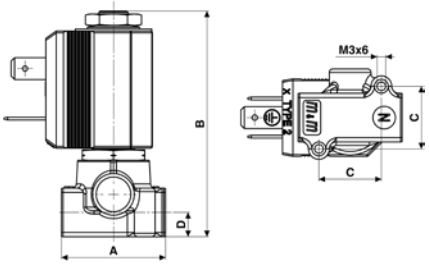
TYPE: RB297



Normally Open



Dimensions & weights		B297	RB297
G connection	[ISO 228]	1/8"	1/8"
A	[mm]	30	30
B	[mm]	65	67.5
C	[mm]	18	18
D	[mm]	7	7
weight	[kg]	0.15	0.15



Automation

Flow direction overseat 1 → 2

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
B297DVA	1.0	0.5	0	30	28	2250	24 VDC
B297DVB	1.2	0.7	0	25	22	2200	24 V 50/60 Hz
B297DVC	1.5	1.0	0	22	18	2400	110 V 50 Hz - 120 V 60 Hz
B297DVE	2.0	1.7	0	18	9	2600	200 V 50 Hz - 220 V 60 Hz
B297DVG	2.5	2.3	0	13	3	2700	230 V 50 Hz - 240 V 60 Hz
B297DVH	3.0	3.0	0	8	1		

B297 - FKM seal, NC -

Coil power: AC 10 VA (holding)
AC 16 VA (inrush)
DC 7 W

Options
Manual override (e.g. code B297DVCM)
Electroless nickel plating treatment (e.g. code B297DVEK)

Automation

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
RB297DVA	1.0	0.5	0	25	25	2250[1]	24 VDC
RB297DVB	1.2	0.7	0	20	20	2200	24 V 50/60 Hz
RB297DVC	1.5	1.0	0	15	15	2400	110 V 50 Hz - 120 V 60 Hz
RB297DVE	2.0	1.7	0	10	10	2600	200 V 50 Hz - 220 V 60 Hz
RB297DVG	2.5	2.3	0	5	5	2700	230 V 50 Hz - 240 V 60 Hz
RB297DVH	3.0	3.0	0	4.5	4.5		

RB297 - FKM seal, NO -

Coil power: AC 10 VA (holding)
AC 16 VA (inrush)
DC 7 W

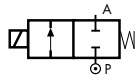
[1] For continuous service in DC we recommend the use of M&M coils 10 Watt, class H (see options on page 41)

2/2 way direct acting solenoid valve, G 1/8" – G 1/4"

Common features
Body material: brass (CW617N EN 12165)
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Operator material: stainless steel
Protection class: IP 65 (with connector and gasket)

Options
Available with body thread connection 1/8" (e.g. code D262DVH), performance ratings remain the same as D263DVH.
Manual override (e.g. code D262DVCM).

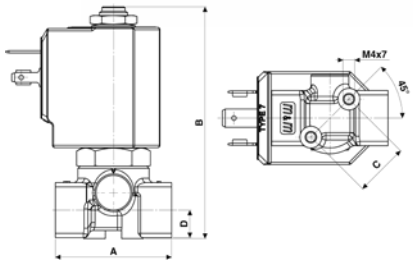
TYPE: D262/263



Normally Closed



Dimensions & Weights		D262	D263
G connection	[ISO 228]	1/8"	1/4"
A	[mm]	40	40
B	[mm]	77.5	77.5
C	[mm]	18.5	18.5
D	[mm]	9.5	9.5
weight	[kg]	0.26	0.26



General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
D263DVA	1.0	0.5	0	30	30
D263DVC	1.5	1.3	0	24	24
D263DVG	2.5	3.4	0	18	16
D263DVH	3.0	4.5	0	15	10
D263DVL[1]	4.0	6.0	0	10	5
D263DVN[1]	5.0	7.5	0	5	2,5
D263DVP[1]	6.0	8.0	0	3	1

Coils	
code	[Volts/Hz]
7250	24 VDC
7200	24 V 50/60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7700	230 V 50 Hz - 240 V 60 Hz

[1] Manual override not available for orifice > Ø 3 mm

Flow direction overseat 1 → 2

D262/263 - FKM seal, NC -

Media: water, oil, air
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Seal material: foodgrade FKM
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
EPDM seal, temperature max. 120 °C (e.g. code D262DEH)
For vacuum see page 37

Steam

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
D263DLA	1.0	0.5	0	9	9
D263DLC	1.5	1.3	0	9	9
D263DLG	2.5	3.4	0	9	8
D263DLH	3.0	4.5	0	9	5

Coils class 'H' only	
code	[Volts/Hz]
7251	24 VDC
7201	24 V 50/60 Hz
7401	110 V 50 Hz - 120 V 60 Hz
7601	200 V 50 Hz - 220 V 60 Hz
7701	230 V 50 Hz - 240 V 60 Hz

D262/263 - FILLED PTFE seal, NC -

Media: steam
Media temperature: -10 to +180 °C
Ambient temperature: -10 to +70 °C
Seal material: Sigodur (filled PTFE)
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Notes
Seamless tube as standard

High pressure

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
D263DRB1	1.2	0.7	0	200	60
D263DRC1	1.5	1.3	0	200	35
D263DRE1	2.0	2.2	0	120	25
D263DRH1	3.0	4.5	0	50	11

Coils high power - class 'H' only	
code	[Volts/Hz]
72Z1	24 VDC
72K1	24 V 50/60 Hz
74K1	110 V 50 Hz - 120 V 60 Hz
77K1	230 V 50 Hz - 240 V 60 Hz

ATTENTION: When high pressure valves are supplied without a coil, their nameplates display the max. OPD of the valve when equipped with an AC (25 VA) and DC (22 W) coil (as shown in the table above). **When using alternative coil power ratings please ensure to request separately the appropriate nameplate at time of order**.

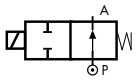
D262/263 - RUBY seal, NC -

Media[2]: water, oil, liquids
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Seal material: Ruby
Coil power: AC 25 VA (holding)
AC 50 VA (inrush)
DC 22 W

Notes
Seamless tube as standard
[2] Not 100% leak-proof when used with air/gases. Approximate leak rate is 1,5 ml/min at max. OPD.

2/2 way direct acting solenoid valve, G 1/8" – G 1/4"

TYPE: RD262/263



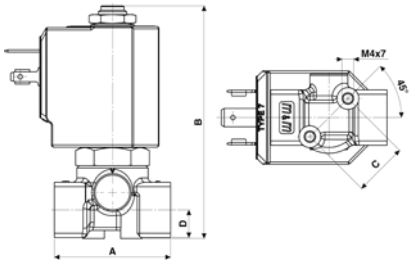
Normally Open



Common features
Body material: brass (CW617N EN 12165)
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Operator material: stainless steel
Protection class: IP 65 (with connector and gasket)

Options
Available with body thread connection 1/8" (e.g. code RD262DVA), performance ratings remain the same as RD263DVA.
For steam version with filled PTFE seal (Sigodur) see valve model **RD236DL-** on page 19
For high pressure version with Ruby seal see valve model **RD236DR-1** on page 19

Dimensions & Weights		RD262	RD263
G connection	[ISO 228]	1/8"	1/4"
A	[mm]	40	40
B	[mm]	77.7	77.7
C	[mm]	18.5	18.5
D	[mm]	9.5	9.5
weight	[kg]	0.26	0.26



Flow direction overseat 1 → 2

General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
RD263DVA	1.0	0.5	0	30	30
RD263DVC	1.5	1.3	0	24	24
RD263DVG	2.5	3.4	0	16	16
RD263DVH	3.0	4.5	0	10	10

Coils class 'H' only	
code	[Volts/Hz]
7251	24 VDC
7201	24 V 50/60 Hz
7401	110 V 50 Hz - 120 V 60 Hz
7601	200 V 50 Hz - 220 V 60 Hz
7701	230 V 50 Hz - 240 V 60 Hz

RD262/263 - FKM seal, NO -

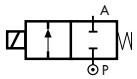
Media: water, oil, air
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Seal material: foodgrade FKM
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
EPDM seal, temperature max. 120 °C (e.g. code RD262DEH)

2/2 way direct acting solenoid valve, G 1/4"

Common features
Media: water, oil, air
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Body material: brass (CW617N EN 12165)
Operator material: stainless steel
Protection class: IP 65 (with connector and gasket)

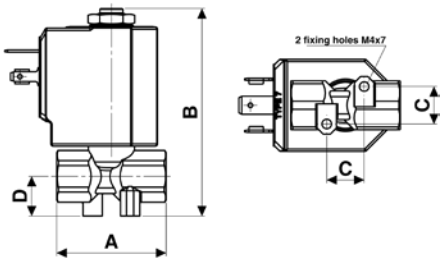
TYPE: D249



Normally Closed



Dimensions & Weights		D249
G connection	[ISO 228]	1/4"
A	[mm]	38
B	[mm]	72.1
C	[mm]	13
D	[mm]	13.8
weight	[kg]	0.18



Compressed air

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
D249DVD	1.7	1.5	0	25	24
D249DVF	2.2	2.4	0	18	16
D249DVH*	3.0	4.5	0	15	10

Coils	
code	[Volts/Hz]
7250	24 VDC
7200	24 V 50/60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7700	230 V 50 Hz - 240 V 60 Hz

* **Minimum batch may be required**

Flow direction overseat 1 → 2

D249 - FKM seal, NC -

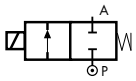
Seal material: FKM
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
EPDM seal, temperature max. 120 °C (e.g. code D249DEF)

2/2 way direct acting solenoid valve, G 1/4" – G 1/2"

Common features
Body material: brass (CW617N EN 12165)
Operator material: stainless steel
Protection class: IP 65 (with connector and gasket)

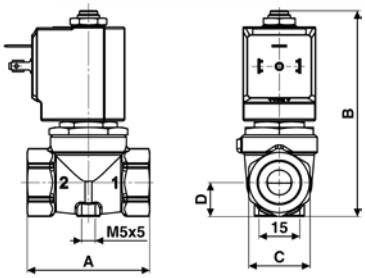
TYPE: D237/238/239



Normally Closed



Dimensions & Weights		D237	D238	D239
G connection	**[ISO 228]**	**1/4"**	**3/8"**	**1/2"**
A	[mm]	54	54	54
B	[mm]	89	89	89
C	[mm]	Hex 27	Hex 27	Hex 27
D	[mm]	15	15	15
weight	[kg]	0.45	0.4	0.4



Automation

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	**[mm]**	**[l/min]**	**[barg]**	**[barg]**	**[barg]**
D237DVU	10.5	21	0	0.4	0.2
D238DVU	10.5	25	0	0.4	0.2
D239DVU	10.5	25	0	0.4	0.2

Coils	
code	**[Volts/Hz]**
7250	24 VDC
7200	24 V 50/60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7700	230 V 50 Hz - 240 V 60 Hz

Flow direction overseat 1 → 2

D237/238/239DVU - FKM seal, NC -

Media: water, oil, air
Media temperature: -10 to +130 °C

Ambient temperature: -10 to +50 °C

Seal material: FKM
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
NBR seal, temperature max. 90 °C (e.g. code D237DBU)
EPDM seal, temperature max. 120 °C (e.g. code D239DEU)

Automation

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	**[mm]**	**[l/min]**	**[barg]**	**[barg]**	**[barg]**
D238DVL	4.0	6	0	8	5
D238DVN	5.0	7.5	0	5	2
D238DVP	6.0	8.5	0	3.5	1.1
D239DVH	3.0	4.5	0	17	12
D239DVL	4.0	6	0	8	5
D239DVN	5.0	7.5	0	5	2
D239DVP	6.0	8.5	0	3.5	1.1

Coils	
code	**[Volts/Hz]**
7250	24 VDC
7200	24 V 50/60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7700	230 V 50 Hz - 240 V 60 Hz

D238/239 - FKM seal, NC -

Media: water, oil
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Seal material: FKM
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
NBR seal, temperature max. 90 °C (e.g. code D239DBP)
EPDM seal, temperature max. 120 °C (e.g. code D238DEP)
Notes
Same operator as D262/263DV-

Steam

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	**[mm]**	**[l/min]**	**[barg]**	**[barg]**	**[barg]**
D238DLH	3.0	4.5	0	9	8
D238DLN	5.0	7.5	0	5	2
D239DLI	3.5	5.0	0	9	5

Coils class 'H' only	
code	**[Volts/Hz]**
7251	24 VDC
7201	24 V 50/60 Hz
7401	110 V 50 Hz - 120 V 60 Hz
7601	200 V 50 Hz - 220 V 60 Hz
7701	230 V 50 Hz - 240 V 60 Hz

D238/239 - FILLED PTFE seal, NC -

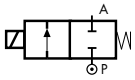
Media: steam
Media temperature: -10 to +180 °C
Ambient temperature: -10 to +70 °C
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Seal material: Sigodur (filled PTFE)
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Notes
Seamless tube as standard
Same operator as D262/263DL-

2/2 way direct acting solenoid valve, flange 32x32

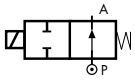
Common features
Body material: brass (CW617N EN 12165)
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Operator material: stainless steel
Protection class: IP 65 (with connector and gasket)

TYPE: D201



Normally Closed

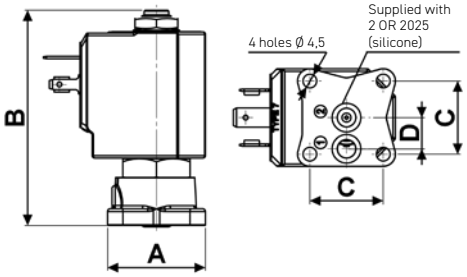
TYPE: RD201



Normally Open



Dimensions & Weights		D201	RD201
G connection	[ISO 228G]	/	/
A	[mm]	⌀ 32	⌀ 32
B	[mm]	70.6	68.4
C	[mm]	24	24
D	[mm]	10.25	10.25
weight	[kg]	0.25	0.3



Automation

Flow direction overseat 1 → 2

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
D201DVC	1.5	1.3	0	24	24
D201DVE	2.0	2.2	0	20	20
D201DVG	2.5	3.4	0	18	18
D201DVH	3.0	4.5	0	15	10

Coils	
code	[Volts/Hz]
7250	24 VDC
7200	24 V 50/60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7700	230 V 50 Hz - 240 V 60 Hz

D201 - FKM seal, NC -

Media: water, oil, air
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Seal material: foodgrade FKM
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
EPDM seal, temperature max. 120 °C (e.g. code D201DEC)
Manual override (e.g. code D201DVGM)

Automation

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
RD201DVC	1.5	1.3	0	24	24
RD201DVG	2.5	3.4	0	16	16
RD201DVH	3.0	4.5	0	10	10

Coils class 'H' only	
code	[Volts/Hz]
7251	24 VDC
7201	24 V 50/60 Hz
7401	110 V 50 Hz - 120 V 60 Hz
7601	200 V 50 Hz - 220 V 60 Hz
7701	230 V 50 Hz - 240 V 60 Hz

RD201 - FKM seal, NO -

Media: water, oil, air
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Seal material: foodgrade FKM
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
EPDM seal, temperature max. 120 °C (e.g. code RD201DEG)

High pressure

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
RD201DRC	1.5	1.3	0	55	55
RD201DRE	2.0	2.2	0	25	25
RD201DRH	3.0	4.5	0	10	10

Coils class 'H' only	
code	[Volts/Hz]
7251	24 VDC
7201	24 V 50/60 Hz
7401	110 V 50 Hz - 120 V 60 Hz
7601	200 V 50 Hz - 220 V 60 Hz
7701	230 V 50 Hz - 240 V 60 Hz

RD201 - RUBY seal, NO -

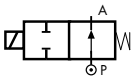
Media[1]: water, oil, liquids
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Seal material: Ruby
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Notes
[1] Not 100% leak-proof when used with air/gases. Approximate leak rate is 1,5 ml/min at max. OPD

2/2 way direct acting solenoid valve, G 1/8"

Common features
Media: water, oil, air
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Body material: brass (CW617N EN 12165)
Operator material: stainless steel
Protection class: IP 65 (with connector and gasket)

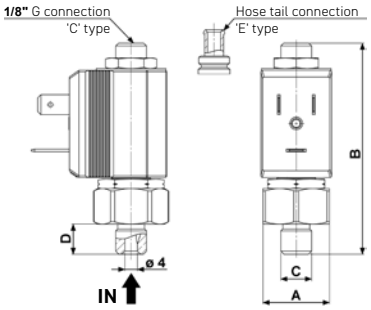
TYPE: RB214



Normally Open



Dimensions & Weights		RB214
G connection	**[ISO 228]**	**1/8"**
A	[mm]	21
B	[mm]	66.5
C	[mm]	1/8"
D	[mm]	9.5
weight	[kg]	0.06



Compressed air

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	**[mm]**	**[l/min]**	**[barg]**	**[barg]**	**[barg]**
RB214CVD	1.7	1.2	0	14	14

Coils	
code	**[Volts/Hz]**
2250	24 VDC
2200	24 V 50/60 Hz
2400	110 V 50 Hz - 120 V 60 Hz
2600	200 V 50 Hz - 220 V 60 Hz
2700	230 V 50 Hz - 240 V 60 Hz

RB214 - FKM seal, NO -

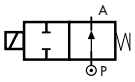
Seal material: foodgrade FKM
Coil power: AC 10 VA (holding)
AC 16 VA (inrush)
DC 7 W

Options
Armature tube with hose tail Ø 6 mm (e.g. code RB214EVD)
EPDM seal, temperature max. 120 °C (e.g. code RB214CED)

2/2 way direct acting solenoid valve, G 1/8"

Common features
Media: water, oil, air
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Body material: brass (CW617N EN 12165)
Operator material: stainless steel
Protection class: IP 65 (with connector and gasket)

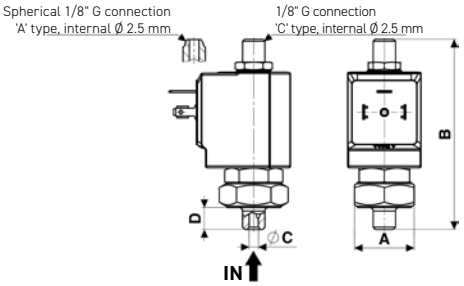
TYPE: RD213



Normally Open



Dimensions & Weights		RD213
G connection	**[ISO 228]**	**1/8"**
A	[mm]	Hex 26
B	[mm]	82.5
C	[mm]	4
D	[mm]	9.5
weight	[kg]	0.1



Compressed air

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	**[mm]**	**[l/min]**	**[barg]**	**[barg]**	**[barg]**
RD213CVG	2.5	2.4	0	16	16

Coils	
code	**[Volts/Hz]**
7250	24 VDC
7200	24 V 50/60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7700	230 V 50 Hz - 240 V 60 Hz

Flow direction underseat 2 → 1

RD213 - FKM seal, NO -

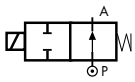
Seal material: foodgrade FKM
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
EPDM seal, temperature max. 120 °C (e.g. code RD213CEG)
Armature tube with spherical 1/8" G connection (e.g. code RD213AVG)

2/2 way direct acting solenoid valve, G 1/4"

Common features
Body material: brass (CW617N EN 12165)
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Operator material: stainless steel
Protection class: IP 65 (with connector and gasket)

TYPE: RD236

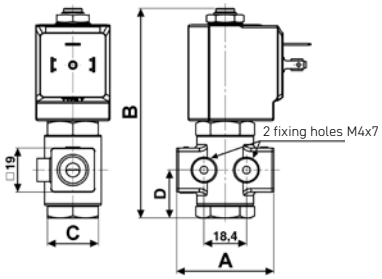


Normally Open



Dimensions & Weights		RD236
G connection	[ISO 228]	1/4"
A	[mm]	47*
B	[mm]	91
C	[mm]	HEX 22
D	[mm]	20.75
weight	[kg]	0.25

*Since July 2014



Flow direction overseat 1 → 2

General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
RD236DVA	1.0	0.5	0	25	25	7250	24 VDC
RD236DVC	1.5	1.3	0	20	20	7200	24 V 50/60 Hz
RD236DVE	2.0	2.0	0	18	18	7400	110 V 50 Hz - 120 V 60 Hz
RD236DVG	2.5	2.8	0	15	15	7600	200 V 50 Hz - 220 V 60 Hz
RD236DVH	3.0	3.5	0	12	12	7700	230 V 50 Hz - 240 V 60 Hz
RD236DVM	4.5	5.5	0	5	5		
RD236DVP	6.0	8.5	0	2	2		

RD236 - FKM seal, NO -

Media: water, oil, air
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Seal material: foodgrade FKM
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Steam

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils class 'H' only	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
RD236DLA	1.0	0.5	0	9	9	7251	24 VDC
RD236DLC	1.5	1.3	0	9	9	7201	24 V 50/60 Hz
RD236DLE	2.0	2.0	0	9	9	7401	110 V 50 Hz - 120 V 60 Hz
RD236DLH	3.0	3.5	0	9	9	7601	200 V 50 Hz - 220 V 60 Hz
						7701	230 V 50 Hz - 240 V 60 Hz

RD236 - FILLED PTFE seal, NO -

Media: steam
Media temperature: -10 to +180 °C
Ambient temperature: -10 to +70 °C
Seal material: Sigodur (filled PTFE)
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Notes
Seamless tube as standard

High pressure

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils high power - class 'H' only	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
RD236DRA1	1.0	0.5	0	180	180	72Z1	24 VDC
RD236DRC1	1.5	1.3	0	150	150	72K1	24 V 50/60 Hz
RD236DRE1	2.0	2.0	0	60	60	74K1	110 V 50 Hz - 120 V 60 Hz
RD236DRG1	2.5	2.8	0	37	37	77K1	230 V 50 Hz - 240 V 60 Hz
RD236DRH1	3.0	3.5	0	28	28		

RD236 - RUBY seal, NO -

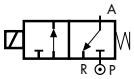
Media[1]: water, oil, liquids
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Seal material: Ruby
Coil power: AC 25 VA (holding)
AC 50 VA (inrush)
DC 22 W

Notes
Seamless tube as standard
[1] Not 100% leak-proof when used with air/gases. Approximate leak rate is 1,5 ml/min at max. OPD.

3/2 way direct acting solenoid valve, G 1/8"

Common features
Media: water, oil, air and aggressive fluids
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Body material: stainless steel (1.4305 EN 10088/AISI 303)
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Operator material: stainless steel
Seal material: foodgrade FKM
Protection class: IP 65 (with connector and gasket)

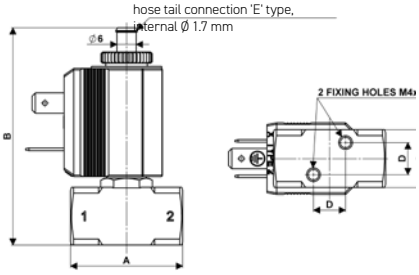
TYPE: B398



Normally Closed



Dimensions & weights		B398
G connection	[ISO 228]	1/8"
A	[mm]	35
B	[mm]	68
C	[mm]	18
D	[mm]	10
weight	[kg]	0.1



Flow direction underseat 2 → 1

General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
B398EVB	1.2	0.7	0	15	15
B398EVC	1.5	1.0	0	10	10
B398EVE	2.0	1.9	0	5	5
B398EVG	2.5	2.7	0	3	3

Coils	
code	[Volts/Hz]
2250	24 VDC
2200	24 V 50/60 Hz
2400	110 V 50 Hz - 120 V 60 Hz
2600	200 V 50 Hz - 220 V 60 Hz
2700	230 V 50 Hz - 240 V 60 Hz

B398 - FKM seal, NC -

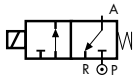
Coil power: AC 10 VA (holding)
AC 16 VA (inrush)
DC 7 W

3/2 way direct acting solenoid valve, G 1/8" – G 1/4"

Common features
Body material: stainless steel (1.4305 EN 10088/AISI 303)
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Operator material: stainless steel
Protection class: IP 65 (with connector and gasket)

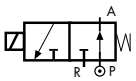
Options
Available with body thread connection 1/8" (e.g. code D398DVC), performance ratings remain the same as D399DVC.
NPT connection on request, minimum batch may be required (e.g. code RD399CVGN)

TYPE: D398/399



Normally Closed

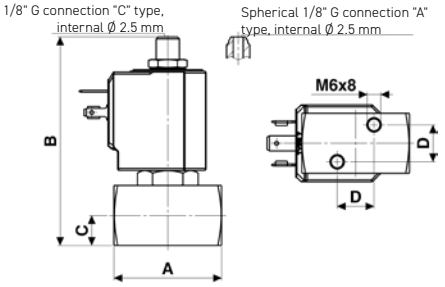
TYPE: RD398/399



Normally Open



Dimensions & weights		D398	D399
G connection	[ISO 228]	1/8"	1/4"
A	[mm]	45	45
B	[mm]	87	87
C	[mm]	12.5	12.5
D	[mm]	15.4	15.4
weight	[kg]	0.35	0.35



Flow direction underseat 2 → 1

General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
D399CVC	1.5	1.3	0	18	18
D399CVE	2.0	2.2	0	10	10
D399CVG	2.5	3.4	0	7	7
D399CVH	3.0	4.5	0	5	5

Coils	
code	[Volts/Hz]
7250	24 VDC
7200	24 V 50/60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7700	230 V 50 Hz - 240 V 60 Hz

D398/399 - FKM seal, NC -

Media: water, oil, air and aggressive fluids
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Seal material: foodgrade FKM
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
Armature tube with spherical 1/8" G connection (e.g. code D398AVC)
Silver shading ring (e.g. code D398CVGA)
UL approved coils (e.g. code 770R)

Steam

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
D399CLC	1.5	1.3	0	9	9
D399CLE	2.0	2.2	0	9	9
D399CLH	3.0	4.5	0	5	5

Coils class 'H' only	
code	[Volts/Hz]
7251	24 VDC
7201	24 V 50/60 Hz
7401	110 V 50 Hz - 120 V 60 Hz
7601	200 V 50 Hz - 220 V 60 Hz
7701	230 V 50 Hz - 240 V 60 Hz

D398/399 - Sigodur seal, NC -

Media: steam
Media temperature: -10 to +180 °C
Ambient temperature: -10 to +70 °C
Seal material: Sigodur (filled PTFE)
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
Silver shading ring (e.g. code D398CLCA)
Notes
Seamless tube as standard

General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
RD399CVC	1.5	1.3	0	15	15
RD399CVE	2.0	2.2	0	10	10
RD399CVH	3.0	4.5	0	4	4

Coils class 'H' only	
code	[Volts/Hz]
7251	24 VDC
7201	24 V 50/60 Hz
7401	110 V 50 Hz - 120 V 60 Hz
7601	200 V 50 Hz - 220 V 60 Hz
7701	230 V 50 Hz - 240 V 60 Hz

RD398/399 - FKM seal, NO -

Media: water, oil, air and aggressive fluids
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Seal material: foodgrade FKM
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Notes
Protective treatment of operators is recommended, minimum batch may be required.

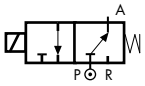
3/2 way direct acting solenoid valve, G 1/8"

Common features
Media[1]: water, oil, air
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Body material: brass (CW719R EN 12165) low lead content
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Operator material: stainless steel
Seal material: foodgrade FKM
Protection class: IP 65 (with connector and gasket)

Options
EPDM seal, temperature max. 120 °C (e.g. code RB397CEC)
Electroless nickel plating treatment (e.g. code B397CVCK)

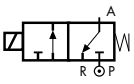
Notes
[1] Valve suitable for contact with food media as per the EEC Directives and Regulations.
For more specific information, please contact M&M Instruments Sales Department.

TYPE: SB397



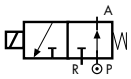
Normally Open

TYPE: B297



Normally Closed

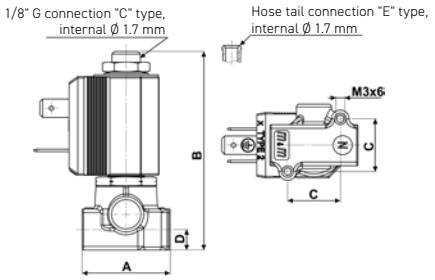
TYPE: RB397



Normally Open



Dimensions & weights		B397	RB397	SB397
G connection	[ISO 228]	1/8"	1/8"	1/8"
A	[mm]	30	30	30
B	[mm]	67.8	72.5	67.8
C	[mm]	18	18	18
D	[mm]	7	7	7
weight	[kg]	0.15	0.16	0.15



General purpose

Flow direction underseat 2 → 1

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
B397CVA	1.0	0.5	0	18	18	2250	24 VDC
B397CVB	1.2	0.7	0	15	15	2200	24 V 50/60 Hz
B397CVC	1.5	1.0	0	10	10	2400	110 V 50 Hz - 120 V 60 Hz
B397CVE	2.0	1.9	0	5	5	2600	200 V 50 Hz - 220 V 60 Hz
B397CVH	3.0	3.5	0	2	2	2700	230 V 50 Hz - 240 V 60 Hz

B397 - FKM seal, NC

Coil power: AC 10 VA (holding)
AC 16 VA (inrush)
DC 7 W

Options
Manual override (e.g. code B397CVBM)
Armature tube with hose tail Ø 6 mm (e.g. code B397EVE)
UL approved coils (e.g. code 270R)

Automation

Valve	Nominal Ø 1 → 2	Nominal Ø 1 → 3	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils	
code	[mm]	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
SB397CVB	1.2	1.7	0.7	0	6	3	2250	24 VDC
SB397CVC	1.5	1.7	1.0	0	4.5	2	2200	24 V 50/60 Hz
							2400	110 V 50 Hz - 120 V 60 Hz
							2600	200 V 50 Hz - 220 V 60 Hz
							2700	230 V 50 Hz - 240 V 60 Hz

SB397 - FKM seal, 2nd SERVICE -

Coil power: AC 10 VA (holding)
AC 16 VA (inrush)
DC 7 W

Options
Manual override (e.g. code SB397CVCM).

Notes
Flow direction: **OFF 3 → 1 - ON 1 → 2**

Automation

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
RB397CVA	1.0	0.5	0	15	12	2250[1]	24 VDC
RB397CVB	1.2	0.7	0	15	12	2200	24 V 50/60 Hz
RB397CVC	1.5	1.0	0	10	8	2400	110 V 50 Hz - 120 V 60 Hz
RB397CVE	2.0	1.9	0	8	6	2600	200 V 50 Hz - 220 V 60 Hz
RB397CVG	2.5	2.5	0	4	4	2700	230 V 50 Hz - 240 V 60 Hz
RB397CVH	3.0	3.5	0	3.5	3.5		

RB397 - FKM seal, NO

Coil power: AC 10 VA (holding)
AC 16 VA (inrush)
DC 7 W

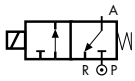
[1] For continuous service in DC we recommend the use of M&M coils 10 Watt, class H (see options on page 41)

3/2 way direct acting solenoid valve, G 1/8" – G 1/4"

Common features
Media: water, oil, air
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Body material: brass (CW617N EN 12165)
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Operator material: stainless steel
Seal material: foodgrade FKM
Protection class: IP 65 (with connector and gasket)

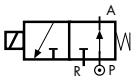
Options
Available with body thread connection 1/8" (e.g. code D362CVA), performance ratings remain the same as D363CVA.
NPT connection on request, minimum batch may be required (e.g. code RD363CVCN)

TYPE: D362/363



Normally Closed

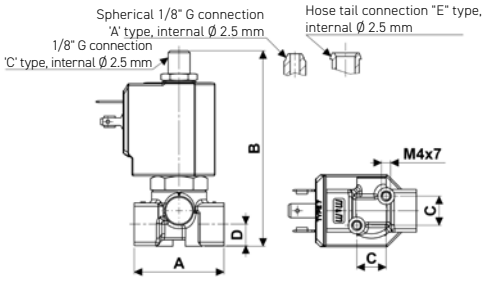
TYPE: RD362/363



Normally Open



Dimensions & weights		D362	D363	RD362	RD363
G connection	[ISO 228]	1/8"	1/4"	1/8"	1/4"
A	[mm]	40	40	40	40
B	[mm]	87	87	87	87
C	[mm]	13	13	13	13
D	[mm]	9.5	9.5	9.5	9.5
weight	[kg]	0.26	0.26	0.26	0.26



Flow direction underseat 2 → 1

General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
D363CVC	1.5	1.3	0	18	18
D363CVE	2.0	2.2	0	10	10
D363CVG	2.5	3.4	0	7	7
D363CVH	3.0	4.5	0	5	5
D363CVL[1]	4.0	6.0	0	3.5	3.5
D363CVN[1]	5.0	7.5	0	2.5	2.5
D363CVP[1]	6.0	8.0	0	1.5	1.5

Coils	
code	[Volts/Hz]
7250	24 VDC
7200	24 V 50/60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7700	230 V 50 Hz - 240 V 60 Hz

[1] Manual override not available for orifice > Ø 3 mm

D362/363 - FKM seal, NC -

Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
EPDM seal, temperature max. 120 °C (e.g. code D363CEC)
Manual override (e.g. code D362CVGM)
Armature tube with hose tail connection (e.g. code D362EVG)
Armature tube with spherical 1/8" G connection (e.g. code D362AVC)
For vacuum see page 37
UL approved coils (e.g. code 770R)

General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
RD363CVC	1.5	1.3	0	16	13
RD363CVE	2.0	2.2	0	10	10
RD363CVG	2.5	3.4	0	7	7
RD363CVH	3.0	4.5	0	4	4

Coils class 'H' only	
code	[Volts/Hz]
7251	24 VDC
7201	24 V 50/60 Hz
7401	110 V 50 Hz - 120 V 60 Hz
7601	200 V 50 Hz - 220 V 60 Hz
7701	230 V 50 Hz - 240 V 60 Hz

RD362/363 - FKM seal, NO -

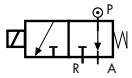
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

3/2 way direct acting solenoid valve, G 1/8" – G 1/4"

Common features
Media: water, oil, air
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Body material: brass (CW617N EN 12165)
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Operator material: stainless steel
Seal material: foodgrade FKM
Protection class: IP 65 (with connector and gasket)

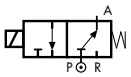
Options
Available with body thread connection 1/8" (e.g. code SD362CVC), performance ratings remain the same as SD363CVC.
Armature tube with spherical 1/8" G connection (e.g. code SD362AVC)

TYPE: DD362/363



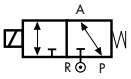
Normally Open - Diverting

TYPE: SD362/363



Normally Open - 2nd Service

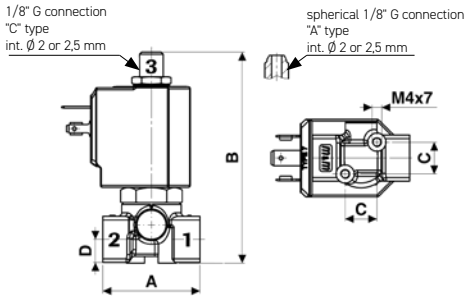
TYPE: GD362/363



Universal Service



Dimensions & weights		SD362	SD363	DD362	DD363	GD362	GD363
G connection	[ISO 228]	1/8"	1/4"	1/8"	1/4"	1/8"	1/4"
A	[mm]	40	40	40	40	40	40
B	[mm]	87	87	87	87	87	87
C	[mm]	13	13	13	13	13	13
D	[mm]	9.5	9.5	9.5	9.5	9.5	9.5
weight	[kg]	0.26	0.26	0.26	0.26	0.26	0.26



Automation

Valve	Nominal Ø 1→2	Nominal Ø 1→3	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[mm]	[l/min]	[barg]	[barg]	[barg]
SD363CVC	1.5	1.5	1.3	0	15	15
SD363CVE	2.0	2.0	2.2	0	15	15
SD363CVG	2.5	2.5	3.4	0	13	13

Coils	
code	[Volts/Hz]
7250	24 VDC
7200	24 V 50/60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7700	230 V 50 Hz - 240 V 60 Hz

SD362/363 - FKM seal, 2nd SERVICE -

Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Notes
Flow direction: **OFF 3 → 1 - ON 1 → 2**

Automation

Valve	Nominal Ø 1→2	Nominal Ø 1→3	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[mm]	[l/min]	[barg]	[barg]	[barg]
DD363CVC	1.5	2.5	1.3	0	20	20
DD363CVE	2.0	2.5	2.2	0	20	20

Coils	
code	[Volts/Hz]
7250	24 VDC
7200	24 V 50/60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7700	230 V 50 Hz - 240 V 60 Hz

DD362/363 - FKM seal, DIVERTING -

Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Notes
Flow direction: **OFF 1 → 3 - ON 1 → 2**

Automation

Valve	Nominal Ø 1→2	Nominal Ø 1→3	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[mm]	[l/min]	[barg]	[barg]	[barg]
GD363CVE	2.0	2.0	2.2	0	8	7

Coils	
code	[Volts/Hz]
7250	24 VDC
7200	24 V 50/60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7700	230 V 50 Hz - 240 V 60 Hz

GD362/363 - FKM seal, UNIVERSAL SERVICE -

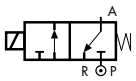
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Notes
Pressure can be connected to all ports:
- from **2** like D362,
- from **1** like DD362,
- from **3** like SD362.

3/2 way direct acting solenoid valve, flange 32x32

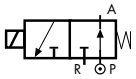
Common features
Media: water, oil, air
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Body material: brass (CW617N EN 12165)
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Operator material: stainless steel
Seal material: foodgrade FKM
Protection class: IP 65 (with connector and gasket)

TYPE: D301



Normally Closed

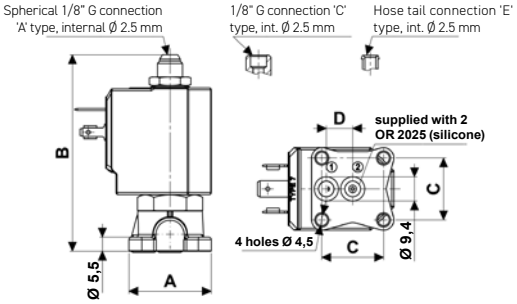
TYPE: RD301



Normally Open



Dimensions & weights		D301	RD301
G connection	[ISO 228]	/	/
A	[mm]	⏥ 32	⏥ 32
B	[mm]	77	77.7
C	[mm]	24	24
D	[mm]	10.25	10.25
weight	[kg]	0.25	0.26



Automation

Flow direction underseat 2 → 1

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
D301CVC	1.5	1.3	0	18	18
D301CVE	2.0	2.2	0	10	10
D301CVG	2.5	3.4	0	7	7
D301CVH	3.0	4.5	0	5	5

Coils	
code	[Volts/Hz]
7250	24 VDC
7200	24 V 50/60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7700	230 V 50 Hz - 240 V 60 Hz

D301 - FKM seal, NC -

Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
Armature tube with spherical 1/8" G connection (e.g. code D301AVE)
Armature tube with hose tail connection (e.g. code D301EVC)
Ruby seal for increased chemical resistance (e.g. code D301ARC)

Automation

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
RD301CVC	1.5	1.3	0	15	15
RD301CVE	2.0	2.2	0	10	10
RD301CVH	3.0	4.5	0	4	4

Coils class 'H' only	
code	[Volts/Hz]
7251	24 VDC
7201	24 V 50/60 Hz
7401	110 V 50 Hz - 120 V 60 Hz
7601	200 V 50 Hz - 220 V 60 Hz
7701	230 V 50 Hz - 240 V 60 Hz

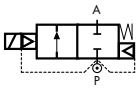
RD301 - FKM seal, NO -

Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

2/2 way pilot operated solenoid valve with assisted lift, G 1/4" – G 1/2"

Common Features
Media: water, oil, air
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Body material: brass (CW617N EN 12165)
Operator material: stainless steel
Operator seal material: FKM
Main seal and diaphragm material: FKM
Protection class: IP 65 (with connector and gasket)

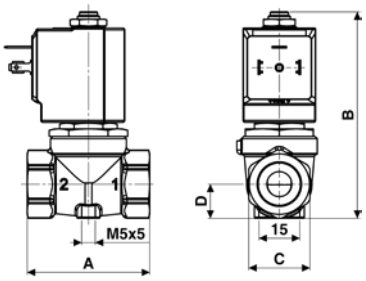
TYPE: D884/885/886



Normally Closed



Dimensions & weights		D884	D885	D886
G connection	[ISO 228]	1/4"	3/8"	1/2"
A	[mm]	54	54	54
B	[mm]	89	89	89
C	[mm]	Hex 27	Hex 27	Hex 27
D	[mm]	15	15	15
weight	[kg]	0.45	0.4	0.4



Flow direction overseat 1 → 2

General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
D884DVU	10.5	21	0	16	6
D885DVU	10.5	24	0	16	6
D886DVU	10.5	25	0	16	6

Coils	
code	[Volts/Hz]
7250	24 VDC
7200	24 V 50/60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7700	230 V 50 Hz - 240 V 60 Hz

D884/885/886 - FKM seal, NC -

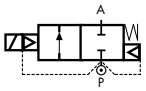
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

2/2 way pilot operated solenoid valve, G 3/8" – G 1"

Common features
Media: water, oil, air and aggressive fluids
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Body material: AISI 316L (ASME SA351/351M GRADE CF3M)
Operator material: stainless steel
Operator seal and diaphragm material: FKM
Silver shading ring as standard
Protection class: IP 65 (with connector and gasket)

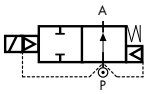
Options
EPDM seal, temperature max. 120 °C (e.g. code D204DEZI)
NBR seal, temperature max. 90 °C (e.g. code D206DBYI)
NPT connection on request, minimum batch may be required (e.g. code D204DVZIN)

TYPE: D204-D222



Normally Closed

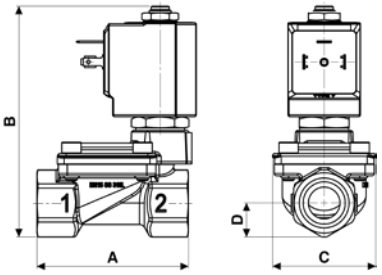
TYPE: RD204-RD222



Normally Open



Dimensions & weights		D204	D205	D206	D222	RD204	RD205	RD206	RD222
G connection	[ISO 228]	3/8"	1/2"	3/4"	1"	3/8"	1/2"	3/4"	1"
A	[mm]	67	67	96	96	67	67	96	96
B	[mm]	102	102	125	125	100	100	123	123
C	[mm]	45.6	45.6	72	72	45.6	45.6	72	72
D	[mm]	15	15	24	24	15	15	24	24
weight	[kg]	0.49	0.49	1.1	1.1	0.49	0.49	1.1	1.1



Flow direction overseat 1 → 2

Aggressive fluids

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
D204DVZI	13	55	0.3	16	16
D205DVZI	13	63	0.3	16	16
D206DVYI	25	140	0.3	16	16
D222DVYI	25	160	0.3	16	16

Coils	
code	[Volts/Hz]
7250	24 VDC
7200	24 V 50/60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7700	230 V 50 Hz - 240 V 60 Hz

D204 – D222 - FKM seal, NC -

Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
Manual override (e.g. code D205DBZIM)
UL approved coil (e.g. code 770R)

Notes
Seamless tube as standard

Aggressive fluids

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
RD204DVZI	13	55	0.3	16	16
RD205DVZI	13	63	0.3	16	16
RD206DVYI	25	140	0.3	16	16
RD222DVYI	25	160	0.3	16	16

Coils class 'H' only	
code	[Volts/Hz]
7251	24 VDC
7201	24 V 50/60 Hz
7401	110 V 50 Hz - 120 V 60 Hz
7601	200 V 50 Hz - 220 V 60 Hz
7701	230 V 50 Hz - 240 V 60 Hz

RD204 – RD222 - FKM seal, NO -

Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

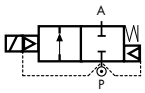
Notes
Protective treatment of operators is recommended, minimum batch may be required (e.g. code RD204DVZIF)

2/2 way pilot operated solenoid valve, G 1/4" – G 1"

Common features
Media: water, oil, air
Media temperature: -10 to +90 °C
Ambient temperature: -10 to +50 °C
Body material: brass (CW617N EN 12165)
Operator material: stainless steel
Operator seal and diaphragm material: NBR
Protection class: IP 65 (with connector and gasket)

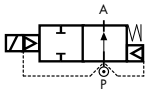
Options
FKM seal, temperature max. 130 °C (e.g. code B205DVZ)
EPDM seal, temperature max. 120 °C (e.g. code B204DEZ)
Electroless nickel plating treatment (e.g. code B205DBZK)
NPT connection on request, minimum batch may be required (e.g. code RB205DBZN)
UL approved coils (e.g. code 220R)
Speed control screw only for type B206-, B222-, RB206- and RB222- (e.g. code B206DBYV / RB222DBYV)

TYPE: B203-B222



Normally Closed

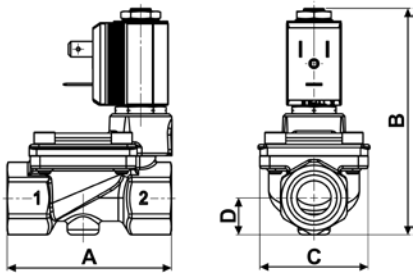
TYPE: RB203-RB222



Normally Open



Dimensions & weights		B203 B204	B205	B206 compact	B206	B222	RB203 RB204	RB205	RB206 compact	RB206	RB222
G connection	**[ISO 228]**	**1/4" 3/8"**	**1/2"**	**3/4"**	**3/4"**	**1"**	**1/4" 3/8"**	**1/2"**	**3/4"**	**3/4"**	**1"**
A	[mm]	67	67	82	96	96	67	67	82	96	96
B	[mm]	90	90	105	115	115	92.5	92.5	107.5	117.5	117.5
C	[mm]	45.6	45.6	51.6	72	72	45.6	45.6	51.6	72	72
D	[mm]	15	15	20.25	23	23	15	15	20.25	23	23
weight	[kg]	0.4	0.4	0.6	1.2	1.2	0.4	0.4	0.6	1.2	1.2



Flow direction overseat 1 → 2

General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	**[mm]**	**[l/min]**	**[barg]**	**[barg]**	**[barg]**
B203DBZ	13	26	0.3	16	16
B204DBZ	13	55	0.3	16	16
B205DBZ	13	63	0.3	16	16
B206DBX comp.	21	100	0.3	16	16
B206DBY[1]	25	140	0.3	16	16
B222DBY	25	160	0.3	16	16

Coils	
code	**[Volts/Hz]**
2250	24 VDC
2200	24 V 50/60 Hz
2400	110 V 50 Hz - 120 V 60 Hz
2600	200 V 50 Hz - 220 V 60 Hz
2700	230 V 50 Hz - 240 V 60 Hz

B203 – B222 - NBR seal, NC -

Coil power: AC 10 VA (holding)
AC 16 VA (inrush)
DC 7 W

Options
Manual override (e.g. code B204DBZM)

General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	**[mm]**	**[l/min]**	**[barg]**	**[barg]**	**[barg]**
RB203DBZ	13	26	0.3	16	16
RB204DBZ	13	55	0.3	16	16
RB205DBZ	13	63	0.3	16	16
RB206DBX comp.	21	100	0.3	16	16
RB206DBY[1]	25	140	0.3	16	16
RB222DBY	25	160	0.3	16	16

Coils	
code	**[Volts/Hz]**
2250[2]	24 VDC
2200	24 V 50/60 Hz
2400	110 V 50 Hz - 120 V 60 Hz
2600	200 V 50 Hz - 220 V 60 Hz
2700	230 V 50 Hz - 240 V 60 Hz

RB203 – RB222 - NBR seal, NO -

Coil power: AC 10 VA (holding)
AC 16 VA (inrush)
DC 7 W

[1] Product subject to phase-out, please contact M&M Instruments Sales Department for availability
[2] For continuous service in DC we recommend the use of M&M coils 10 Watt, class H (see options on page 41)

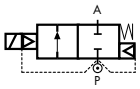
2/2 way pilot operated solenoid valve, G 1/4" – G 1"

Common features
Media: water, air, oil
Ambient temperature: -10 to +50 °C
Media temperature: see table
Maximum viscosity: Max. 21cST (3 °E)
Body material: brass (CW617N EN 12165)
Shading ring: copper
Operator material: stainless steel
Seal material: see table
Protection class: IP 65 (EN 60529) with connector and gasket fitted*

Options
Electroless nickel plating treatment (e.g. code RSV01BG20A0WBK00)
Silver shading ring (e.g. code RSV01BG20A0WBA00)
NPT connection on request, minimum batch may be required (e.g. code RSV01BN20A0WB00)
Stainless steel body (e.g. code RSV01BG20A5WBA00)

Notes
*Plug and gasket not supplied as standard, must be ordered separately
(e.g. code RSV01BG20A0WB00 7700A

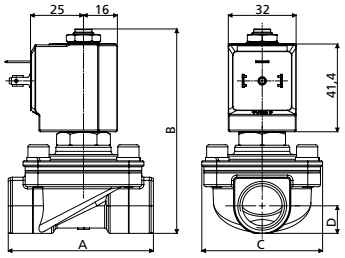
TYPE: RSV01 NC



Normally Closed



Dimensions & weights		RSV01				
G connection	[ISO 228]	1/4"	3/8"	1/2"	3/4"	1"
A	[mm]	68.5	68.5	68.5	81.5	81.5
B	[mm]	96.5	96.5	96.5	110.5	10.5
C	[mm]	57	57	57	57	57
D	[mm]	13	13	13	20	20
weight	[kg]	0.5	0.5	0.5	0.8	0.7



Flow direction overseat 1 → 2

Valve	Seal material	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code		[mm]	[l/min]	[barg]	[barg]	[barg]
RSV01BG20A0WB- RSV01BG20A0WV- RSV01BG20A0WE-	NBR FKM EPDM	16	1.5	0	16	-
RSV01CG20A0WB- RSV01CG20A0WV- RSV01CG20A0WE-	NBR FKM EPDM	16	3.3	0	16	-
RSV01DG20A0WB- RSV01DG20A0WV- RSV01DG20A0WE-	NBR FKM EPDM	16	4.2	0	16	-
RSV01EG20A0XB- RSV01EG20A0XV- RSV01EG20A0XE-	NBR FKM EPDM	20	5.4	0	16	-
RSV01FG20A0XB- RSV01FG20A0XV- RSV01FG20A0XE-	NBR FKM EPDM	20	7.4	0	16	-
RSV01BG20C0WB- RSV01BG20C0WV- RSV01BG20C0WE-	NBR FKM EPDM	16	1.5	0	-	12[1]
RSV01CG20C0WB- RSV01CG20C0WV- RSV01CG20C0WE-	NBR FKM EPDM	16	3.3	0	-	12[1]
RSV01DG20C0WB- RSV01DG20C0WV- RSV01DG20C0WE-	NBR FKM EPDM	16	4.2	0	-	12[1]
RSV01EG20C0XB- RSV01EG20C0XV- RSV01EG20C0XE-	NBR FKM EPDM	20	5.4	0	-	9[1]
RSV01FG20C0XB- RSV01FG20C0XV- RSV01FG20C0XE	NBR FKM EPDM	20	7.4	0	-	9[1]

[1] 0-14 bar with 72Z1 coil (22W)

Coils	
code	[Volts/Hz]
0007	w/o coil
7700	230 V / 50 Hz 240 V / 60 Hz
7200	24 V 50 / 60 Hz
7400	110 V / 50 Hz 120 V / 60 Hz
7100	12 V / 50 / 60 Hz
7600	200 V / 50 Hz 220 V / 60 Hz
7300	48 V 50 / 60 Hz
7250	24 VDC
7150	12 VDC
Class H, High Power	
72Z1	24 VDC

RSV01 - NBR seal, NC -

Media temperature: -10 to +90 °C
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W
DC 22 W (high power)

Options
FKM seal: media temperature max. 130 °C
EPDM seal: media temperature max. 120 °C
WRAS EPDM seal: media temperature -10 to +85°C
WRAS approval for brass valves only, special construction, (e.g. code RSV01DG20A0WY00W 77000)

Product coding example:

RSV01 C G 20 A 0 W B 0 K 0 7700 0 = 3/8" BSP G, 2/2, AC NC, brass body, 16 mm orifice, NBR seals, nickel plating, DIN coil, 230 V 50 Hz, without plug.

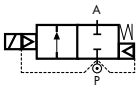
2/2 way pilot operated solenoid valve, G 1/4" – G 1"

Common features
Media: water, air, oil
Ambient temperature: -10 to +50 °C
Media temperature: see table
Maximum viscosity: Max. 21cST (3 °E)
Body material: brass (CW617N EN 12165)
Shading ring: copper
Operator material: stainless steel
Seal material: see table
Protection class: IP 65 (EN 60529) with connector and gasket fitted*

Options
Silver shading ring (e.g. code RSV01BG20R0WBA00)
NPT connection on request, minimum batch may be required (e.g. code RSV01BN20R0WB00)
Stainless steel body (e.g. code RSV01BG20R5WBA00)

Notes
*Plug and gasket not supplied as standard, must be ordered separately (e.g. code RSV01BG20R0WB00 7700A

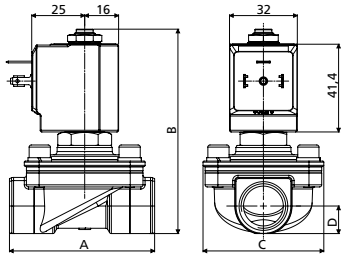
TYPE: RSV01 NO



Normally Open



Dimensions & weights		RSV01				
G connection	[ISO 228]	1/4"	3/8"	1/2"	3/4"	1"
A	[mm]	68.5	68.5	68.5	81.5	81.5
B	[mm]	96.5	96.5	96.5	110.5	110.5
C	[mm]	57	57	57	57	57
D	[mm]	13	13	13	20	20
weight	[kg]	0.5	0.5	0.5	0.8	0.7



Flow direction overseat 1 → 2

Valve	Seal material	Nominal Ø	Flow rate Kvs	OPD min.	OPD max.
code		[mm]	[l/min]	[barg]	[barg]
RSV01BG20R0WB- RSV01BG20R0WV- RSV01BG20R0WE-	NBR FKM EPDM	16	1.5	0	16
RSV01CG20R0WB- RSV01CG20R0WV- RSV01CG20R0WE-	NBR FKM EPDM		3.3		
RSV01DG20R0WB- RSV01DG20R0WV- RSV01DG20R0WE-	NBR FKM EPDM		4.2		
RSV01EG20R0XB- RSV01EG20R0XV- RSV01EG20R0XE-	NBR FKM EPDM	20	5.4		
RSV01FG20R0XB- RSV01FG20R0XV- RSV01FG20R0XE-	NBR FKM EPDM		7.4		

Coils	
code	[Volts/Hz]
0007	w/o coil
7700	230 V 50 Hz - 240 V 60 Hz
7200	24 V 50 / 60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7100	12 V / 50 / 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7300	48 V 50 / 60 Hz
7250	24 VDC
7150	12 VDC
Class H Coil options / Voltage / Power	
7701	230 V 50 Hz - 240 V 60 Hz
7201	24 V 50 / 60 Hz
7401	110 V 50 Hz - 120 V 60 Hz
7601	200 V 50 Hz - 220 V 60 Hz
7251	24 VDC
7151	12 VDC
7451	110 VDC
7101	12V 50 / 60 Hz
7301	48V 50 / 60 Hz

RSV01 - NBR seal, NO -

Media temperature: -10 to +90 °C
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
FKM seal: media temperature max. 130 °C
EPDM seal: media temperature max. 120 °C
WRAS EPDM seal: media temperature -10 to +85°C
WRAS approval for brass valves only, special construction, (e.g. code RSV01DG20R0WY00W 77000)

Product coding example:

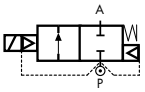
RSV01 C G 20 R 0 W B 0 A 0 7700 0 = 3/8" BSP G, 2/2, AC NC, brass body, 16 mm orifice, NBR seals, silver shading ring, DIN coil, 230 V 50 Hz, without plug.

2/2 way pilot operated solenoid valve, G 1¼" – G 2"

Common features
Media: water, oil, air
Media temperature: -10 to +90 °C
Ambient temperature: -10 to +50 °C
Body material: brass (CW617N EN 12165)
Operator material: stainless steel
Operator seal and diaphragm material: NBR
Silver shading ring as standard
Protection class: IP 65 (with connector and gasket)
Speed control screw as standard

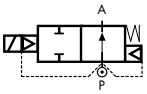
Options
FKM seal, temperature max. 130 °C (e.g. code D223DVK)
EPDM seal, temperature max. 120 °C (e.g. code RD223DEK)
Electroless nickel plating treatment (e.g. code D222DVYK)
NPT connection on request, minimum batch may be required (e.g. code D223DBKN)

TYPE: D223-D225



Normally Closed

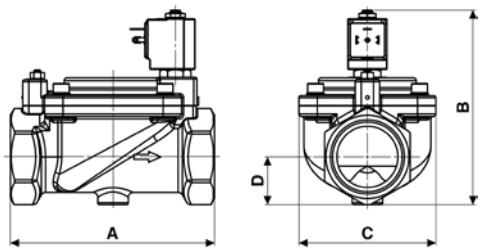
TYPE: RD223-RD225



Normally Open



Dimensions & weights		D223	D224	D225	RD223	RD224	RD225
G connection	[ISO 228]	1 1/4"	1 1/2"	2"	1 1/4"	1 1/2"	2"
A	[mm]	140	140	168	140	140	168
B	[mm]	140	140	158	140	140	158
C	[mm]	96	96	112	96	96	112
D	[mm]	31	31	39	31	31	39
weight	[kg]	2.8	2.8	3.9	2.8	2.8	3.9



General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
D223DBK	40	370	0.5	16	16
D224DBK	40	400	0.5	16	16
D225DBJ	50	540	0.5	16	16

Coils	
code	[Volts/Hz]
7250	24 VDC
7200	24 V 50/60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7700	230 V 50 Hz - 240 V 60 Hz

Flow direction overseat 1 → 2

D223/224/225 - NBR seal, NC -

Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
Manual override (e.g. code D223DBKM)
For vacuum see page 37
UL approved coils (e.g. code 725R)

General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
RD223DBK	40	370	0.5	16	16
RD224DBK	40	400	0.5	16	16
RD225DBJ	50	540	0.5	16	16

Coils class 'H' only	
code	[Volts/Hz]
7251	24 VDC
7201	24 V 50/60 Hz
7401	110 V 50 Hz - 120 V 60 Hz
7601	200 V 50 Hz - 220 V 60 Hz
7701	230 V 50 Hz - 240 V 60 Hz

D223/224/225 - NBR seal, NO -

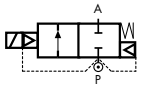
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

2/2 way pilot operated solenoid valve, G 1/4" – G 1/2"

Common features
Media: water, oil, air
Ambient temperature: -10 to +50 °C
Body material: brass (CW617N EN 12165)
Operator material: stainless steel
Protection class: IP 65 (with connector and gasket)

Options
EPDM seal, temperature max. 120 °C (e.g. code D266DEU)
NPT connection on request, minimum batch may be required (e.g. code D264DBUN)

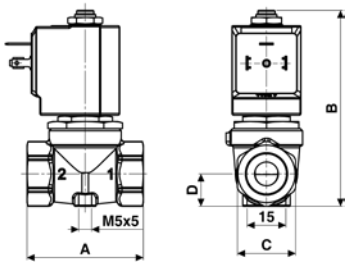
TYPE: D264/265/266



Normally Closed



Dimensions & weights		D264	D265	D266
G connection	[ISO 228]	1/4"	3/8"	1/2"
A	[mm]	54	54	54
B	[mm]	89	89	89
C	[mm]	Hex 27	Hex 27	Hex 27
D	[mm]	15	15	15
weight	[kg]	0.45	0.4	0.4



Flow direction overseat 1 → 2

Compressed air

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
D264DBU	10.5	21	0.1	16	7
D265DBU	10.5	24	0.1	16	7
D266DBU	10.5	25	0.1	16	7

Coils	
code	[Volts/Hz]
7250	24 VDC
7200	24 V 50/60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7700	230 V 50 Hz - 240 V 60 Hz

D264/265/266 - NBR seal, NC -

Media temperature: -10 to +90 °C
Operator seal and diaphragm material: NBR
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
D264DVU	10.5	21	0.1	16	7
D265DVU	10.5	24	0.1	16	7
D266DVU	10.5	25	0.1	16	7

Coils	
code	[Volts/Hz]
7250	24 VDC
7200	24 V 50/60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7700	230 V 50 Hz - 240 V 60 Hz

D264/265/266 - FKM seal, NC -

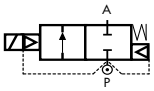
Media temperature: -10 to +130 °C
Operator seal and diaphragm material: FKM
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

2/2 way pilot operated solenoid valve, G 1/4" – G 1/2"

Common features
Body material: brass (CW617N EN 12165)
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Operator material: stainless steel
Seal material: PTFE
Protection class: IP 65 (with connector and gasket)

Notes
Seamless tube as standard

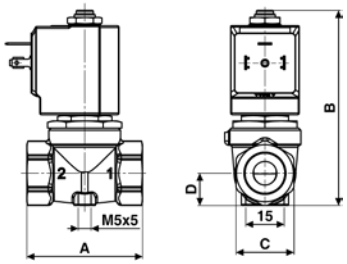
TYPE: D634-D636



Normally Closed



Dimensions & weights		D634	D635	D636
G connection	[ISO 228]	1/4"	3/8"	1/2"
A	[mm]	54	54	54
B	[mm]	100	100	100
C	[mm]	Hex 27	Hex 27	Hex 27
D	[mm]	15	15	15
weight	[kg]	0.5	0.45	0.45



Flow direction overseat 1 → 2

High pressure

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils high power - class 'H' only	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
D634DTT1	10	21	0.3	140	35	72Z1	24 VDC
D635DTT1	10	24	0.3	140	35	72K1	24 V 50/60 Hz
D636DTT1	10	25	0.3	140	35	74K1	110 V 50 Hz - 120 V 60 Hz
						77K1	230 V 50 Hz - 240 V 60 Hz

ATTENTION: When high pressure valves are supplied without a coil, their nameplates display the max. OPD of the valve when equipped with an AC (25 VA) and DC (22 W) coil (as shown in the table above). **When using alternative coil power ratings please ensure to request separately the appropriate nameplate at time of order**.

D634-636DTT1 - PTFE seal, NC -

Media[1]: water, oil, liquids
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Coil power: AC 25 VA (holding)
AC 50 VA (inrush)
DC 22 W

Notes
[1] Not 100% leak-proof when used with air/gases. Approximate leak rate is 1,5 ml/min at max. OPD

Steam

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils class 'H' only	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
D634DTT	10	21	0.3	9	9	72Z1	24 VDC
D635DTT	10	24	0.3	9	9	7201	24 V 50/60 Hz
D636DTT	10	25	0.3	9	9	7401	110 V 50 Hz - 120 V 60 Hz
						7601	200 V 50 Hz - 220 V 60 Hz
						7701	230 V 50 Hz - 240 V 60 Hz

D634-636DTT - PTFE seal, NC -

Media: steam
Media temperature: +80 °C[2] to +180 °C
Ambient temperature: -10 to +70 °C
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 22 W

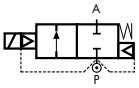
Notes
[2] For a correct functioning, the minimum working temperature of the solenoid valve cannot be below 80 °C

2/2 way pilot operated solenoid valve, G 3/8" - G 3/4"

Common features
Media: water[1], oil, air[2]
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Body material: brass (CW617N EN 12165)
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Operator material: stainless steel
Protection class: IP 65 (with connector and gasket)

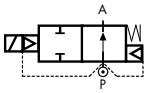
Notes
[1] When using liquid fluids waterhammer and pressures higher than 20 barg can cause the diaphragm to tear
[2] Not 100% leak-proof when used with air/gases. Approximate leak rate is 1,5 ml/min at max. OPD

TYPE: D232-D234



Normally Closed

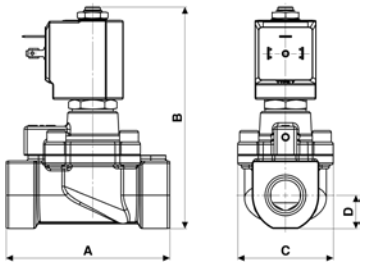
TYPE: RD232-RD234



Normally Open



Dimensions & weights		D232	D233	D234	RD232	RD233	RD234
G connection	[ISO 228]	3/8"	1/2"	3/4"	3/8"	1/2"	3/4"
A	[mm]	86	86	86	86	86	86
B	[mm]	116.5	116.5	116.5	114	114	114
C	[mm]	50.2	50.2	50.2	50.2	50.2	50.2
D	[mm]	17.5	17.5	17.5	17.5	17.5	17.5
weight	[kg]	1	0.9	0.9	1	0.9	0.9



Flow direction overseat 1 → 2

High pressure

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
D232DTW	16.5	42	1	50	50	7250	24 VDC
D233DTW	16.5	46	1	50	50	7200	24 V 50/60 Hz
D234DTW	16.5	48	1	50	50	7400	110 V 50 Hz - 120 V 60 Hz
						7600	200 V 50 Hz - 220 V 60 Hz
						7700	230 V 50 Hz - 240 V 60 Hz

D232/233/234 - PTFE seal, NC -

Operator seal material: Ruby
Diaphragm material: FKM
Main seal material: PTFE
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Notes
Seamless tube as standard

High pressure

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils class 'H' only	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
RD232DTW	16.5	42	1	50	50	7251	24 VDC
RD233DTW	16.5	46	1	50	50	7201	24 V 50/60 Hz
RD234DTW	16.5	48	1	50	50	7401	110 V 50 Hz - 120 V 60 Hz
						7601	200 V 50 Hz - 220 V 60 Hz
						7701	230 V 50 Hz - 240 V 60 Hz

RD232/233/234 - PTFE seal, NO -

Operator seal material: Ruby
Diaphragm material: FKM
Main seal material: PTFE
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
FKM seal version (e.g. code RD232DVW).
Temperature max. 130 °C - OPD max.: 25 barg AC/DC.
Minimum batch may be required

Compressed air

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
D232DVW	16.5	42	1	25	25	7250	24 VDC
D233DVW	16.5	46	1	25	25	7200	24 V 50/60 Hz
D234DVW	16.5	48	1	25	25	7400	110 V 50 Hz - 120 V 60 Hz
						7600	200 V 50 Hz - 220 V 60 Hz
						7700	230 V 50 Hz - 240 V 60 Hz

D232/233/234 - FKM seal, NC -

Operator seal material: foodgrade FKM
Diaphragm material: FKM
Main seal material: FKM
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

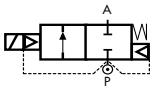
2/2 way pilot operated solenoid valve, G 3/4" - G 1"

Common features
Media[1]: steam
Media temperature: +80 °C[2] to +180 °C
Ambient temperature: -10 to +70 °C
Body material: brass (CW617N EN 12165)
Operator material: stainless steel
Orifice material: stainless steel (1.4305 EN 10088/AISI 303)
Operator seal material: PTFE
Main seal and diaphragm material: PTFE
Protection class: IP 65 (with connector and gasket)

Options
NPT connection on request, minimum batch may be required
(e.g. code D622DTYN)

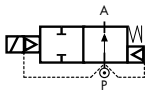
Notes
[1] Water & high content of condensate can damage the diaphragm.
[2] For a correct functioning, the minimum working temperature of the solenoid valve cannot be below 80 °C.

TYPE: D606/622



Normally Closed

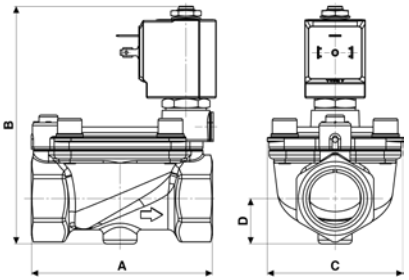
TYPE: RD606/622



Normally Open



Dimensions & weights		D606 RD606	D622 RD622
G connection	[ISO 228]	3/4"	1"
A	[mm]	96	96
B	[mm]	126	126
C	[mm]	72	72
D	[mm]	24	24
weight	[kg]	1.3	1.3



Flow direction overseat 1 → 2

Steam

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
D606DTY	24	120	1	9	9
D622DTY	24	120	1	9	9

Coils class 'H' only	
code	[Volts/Hz]
7151	12 VDC
7251	24 VDC
7201	24 V 50/60 Hz
7401	110 V 50 Hz - 120 V 60 Hz
7601	200 V 50 Hz - 220 V 60 Hz
7701	230 V 50 Hz - 240 V 60 Hz

D606/D622 - PTFE seal, NC -

Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Notes
Seamless tube as standard

Steam

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
RD606DTY	24	120	1	9	9
RD622DTY	24	120	1	9	9

Coils class 'H' only	
code	[Volts/Hz]
7151	12 VDC
7251	24 VDC
7201	24 V 50/60 Hz
7401	110 V 50 Hz - 120 V 60 Hz
7601	200 V 50 Hz - 220 V 60 Hz
7701	230 V 50 Hz - 240 V 60 Hz

RD606/RD622 - PTFE seal, NO -

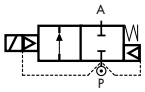
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

2/2 way latching solenoid valve (pilot operated), G 1/4" – G 1/2"

Common features
Media: water, oil, air
Ambient temperature: -10 to +50 °C
Body material: brass (CW617N EN 12165)
Operator material: stainless steel tube, brass plunger
Protection class: IP 65 (with connector and gasket)

Notes
Special operator with reduced stroke for low power coils

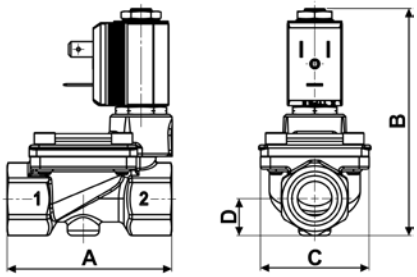
TYPE: LC203-LC205



Normally Closed



Dimensions & weights		LC203	LC204	LC205
G connection	[ISO 228]	1/4"	3/8"	1/2"
A	[mm]	67	67	67
B	[mm]	90	90	90
C	[mm]	45.6	45.6	45.6
D	[mm]	15	15	15
weight	[kg]	0.4	0.4	0.4



Flow direction overseat 1 → 2

General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils low power only	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
LC203DBZ	13	26	0.3	–	5	20Q0	6 VDC
LC204DBZ	13	55	0.3	–	5	21Q0	12 VDC
LC205DBZ	13	63	0.3	–	5	22Q0	24 VDC

LC203 – LC205 - NBR seal -

Media temperature: -10 to +90 °C
Operator seal and diaphragm material: NBR
Coil power: DC 3 W
Absorbition (20 °C): 500mA for **20Q0**
250mA for **21Q0**
125mA for **22Q0**

General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils low power only	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
LC203DVZ	13	26	0.3	–	5	20Q0	6 VDC
LC204DVZ	13	55	0.3	–	5	21Q0	12 VDC
LC205DVZ	13	63	0.3	–	5	22Q0	24 VDC

LC203 – LC205 - FKM seal -

Media temperature: -10 to +130 °C
Operator seal and diaphragm material: FKM
Coil power: DC 3 W
Absorbition (20 °C): 500mA for **20Q0**
250mA for **21Q0**
125mA for **22Q0**

General purpose

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils low power only	
code	[mm]	[l/min]	[barg]	[barg]	[barg]	code	[Volts/Hz]
LC203DEZ	13	26	0.3	–	5	20Q0	6 VDC
LC204DEZ	13	55	0.3	–	5	21Q0	12 VDC
LC205DEZ	13	63	0.3	–	5	22Q0	24 VDC

LC203 – LC205 - EPDM seal -

Media temperature: -10 to +120 °C
Operator seal and diaphragm material: EPDM
Coil power: DC 3 W
Absorbition (20 °C): 500mA for **20Q0**
250mA for **21Q0**
125mA for **22Q0**

Solenoid valves for vacuum

The following solenoid valves are also available with a configuration suitable for vacuum (the general technical features are listed on the individual single pages of solenoid valves):

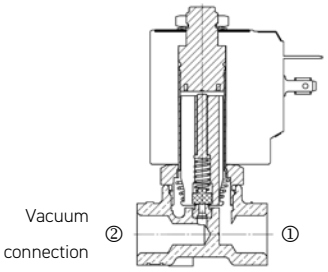
D262/D263 – see page 12
D237/238/239 – see page 15
C D237/238/239 – see page 17
D362/D363 – see page 23
D223–225 – see page 31
D203–D222 – individual datasheet on request



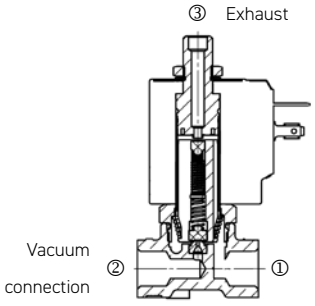


CONNECTION SCHEME ACCORDING TO VALVE TYPES:

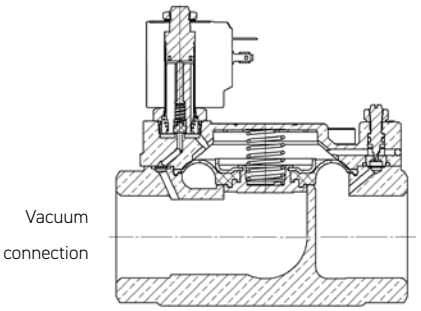
2/2 way - NC direct acting



3/2 way - NC direct acting



2/2 way - NC pilot operated or assisted lift



Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils	
Code	[mm]	[l/min]	[barg]	[barg]	[barg]	Code	[Volts/Hz]
D203DBZL	13	26	-0.2	-0.95	-0.95	7400	110 V 50 Hz - 120 V 60 Hz
D205DBZL	13	63	-0.2	-0.95	-0.95	7600	200 V 50 Hz - 220 V 60 Hz
D205DEZL	13	63	-0.2	-0.95	-0.95	7700	230 V 50 Hz - 240 V 60 Hz
D225DBJL	50	540	-0.5	-0.95	-0.95		
D263DBPL	6	8	-0.9	1	1		
D362CVGL	2.5	3.4	0	-0.95	-0.95		
D363CVGL	2.5	3.4	0	-0.95	-0.95		
D363CVHL	3	4.5	0	-0.95	-0.95		

Various part numbers

Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options
Class 'H' insulation coils (e.g. code 7701)

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils high power - class 'H' only	
Code	[mm]	[l/min]	[barg]	[barg]	[barg]	Code	[Volts/Hz]
D237DBU1	10.5	21	0	-0.95	–	72K1	24 V 50/60 Hz
D238DBU1	10.5	24	0	-0.95	–	74K1	110 V 50 Hz - 120 V 60 Hz
D239DBU1	10.5	25	0	-0.95	–	77K1	230 V 50 Hz - 240 V 60 Hz

D237 – 239DBU1 - NBR seal, AC -

Seal material: NBR 60 shore
Coil power: AC 25 VA (holding)
AC 50 VA (inrush)

Notes
Minimum batch may be required

Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Coils high power - class 'H' only	
Code	[mm]	[l/min]	[barg]	[barg]	[barg]	Code	[Volts/Hz]
C D237DBU1	10.5	21	0	–	-0.95	72Z1	24 VDC
C D238DBU1	10.5	24	0	–	-0.95		
C D239DBU1	10.5	25	0	–	-0.95		

C D237 – 239DBU1 - NBR seal, DC -

Seal material: NBR 60 shore
Coil power: DC 22 W

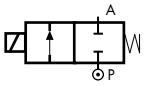
Notes
Minimum batch may be required

2/2 way direct acting "dry armature" solenoid valve, G 3/8"

Common features
Media: water and beverages
Media temperature: -10 to +95 °C
Ambient temperature: -10 to +50 °C
Body material: brass (CW617N EN 12165)
Operator material: stainless steel
Seal material: silicone FDA compliant
Protection class: IP 65 (with connector and gasket)

Notes
TOTAL SEPARATION BETWEEN INTERNAL PARTS AND MEDIUM

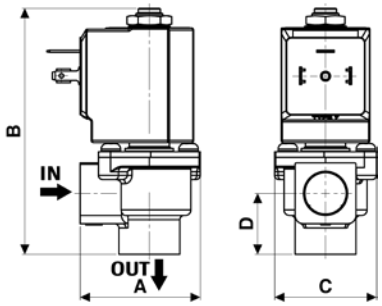
TYPE: 211



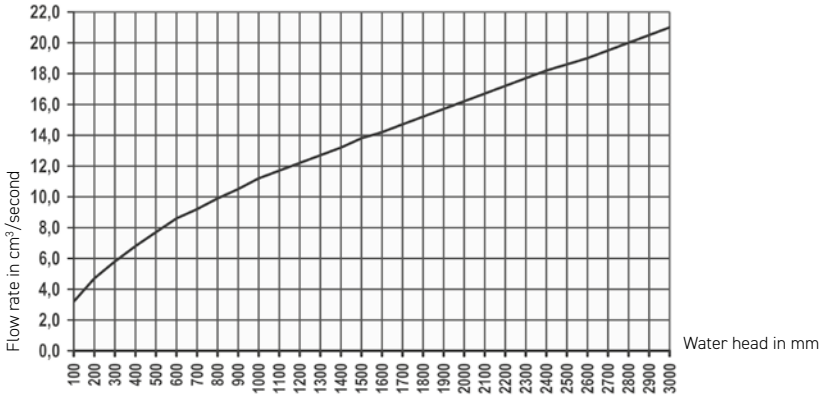
Normally Closed



Dimensions & weights		D211	C D211
G connection	[ISO 228]	3/8"	3/8"
A	[mm]	43.4	43.4
B	[mm]	88.8	88.8
C	[mm]	36	36
D	[mm]	22	22
weight	[kg]	0.34	0.34



Flow rate chart



Valve	Nominal Ø	Flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC
code	[mm]	[l/min]	[barg]	[barg]	[barg]
D211DSU	11	see flow chart	0	0.3	—
C D211DSU	11	see flow chart	0	—	0.2

Coils	
code	[Volts/Hz]
7250	24 VDC
7200	24 V 50/60 Hz
7400	110 V 50 Hz - 120 V 60 Hz
7600	200 V 50 Hz - 220 V 60 Hz
7700	230 V 50 Hz - 240 V 60 Hz

D211 - Silicone FDA seal, NC -

Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W

Options

Electroless nickel plating treatment (e.g. code D211DSUK)

Automatic drain valve systems with solenoid valves

Preassembled systems consisting of solenoid valve, timer and connector for time adjusted condensate discharge of tanks with compressed air, separators, mains drainage, dryers and filters.



Common features
Media: water, oil, air and inert gases
Media temperature: -10 to +130 °C
Ambient temperature: -10 to +50 °C
Seal material: FKM
Coil power: AC 18 VA (holding)
AC 36 VA (inrush)
DC 14 W
Protection class: IP 65 (with connector and gasket)
Discharge time: 0.5 to 10 seconds
Interval time: 30 seconds to 45 minutes
Test switch: manual

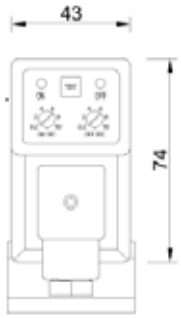
Options
UL approved coils
Valve with NPT connection upon request, minimum batch may be required (e.g. code D249DVFN)
Available with analogue timer (see page 41)

Notes
For more detailed information about the various components (solenoid valve/timer/connector), please refer to individual datasheet

USERS BENEFITS:

- **Adjustable to suit your system requirements**
- **Indoor / outdoor installations**
- **Reliable, long life**
- **Cost effective**
- **Visual indication of operation**
- **Manual override – test button**

Dimensions & weights		AT2720
A	[mm]	43
B	[mm]	74
C	[mm]	20
weight	[kg]	0.077



Compressed air

ADV	Timer	Connector	Valve	G connection	nominal Ø	flow rate Kvs	OPD min.	OPD max. AC	OPD max. DC	Voltage
with direct acting solenoid valves										**serie 7000 coils**
code	**code**	**code**	**code**	**[ISO 228]**	**[mm]**	**[l/min]**	**[barg]**	**[barg]**	**[barg]**	**[Volts/Hz]**
888 120 00-	AT2720	600011-	D249DVF	1/4"	2.2	2.4	0	18	–	110 V 50 Hz - 120 V 60 Hz
888 121 00-							0	18	–	230 V 50 Hz - 240 V 60 Hz
888 122 00-							0	–	16	24 VDC
with pilot operated solenoid valves										**serie 7000 coils**
888 123 00-	AT2720	600011-	D264DVU	1/4"	10.5	21	0.1	16	–	110 V 50 Hz - 120 V 60 Hz
888 124 00-							0.1	16	–	230 V 50 Hz - 240 V 60 Hz
888 125 00-							0.1	–	7	24 VDC
888 126 00-			D265DVU	3/8"	10.5	24	0.1	16	–	110 V 50 Hz - 120 V 60 Hz
888 127 00-							0.1	16	–	230 V 50 Hz - 240 V 60 Hz
888 128 00-							0.1	–	7	24 VDC
888 129 00-			D266DVU	1/2"	10.5	25	0.1	16	–	110 V 50 Hz - 120 V 60 Hz
888 130 00-							0.1	16	–	230 V 50 Hz - 240 V 60 Hz
888 131 00-							0.1	–	7	24 VDC

Analogue electronic timer

Ideal for: Automatic Drain Valves - Sampling Valves - Lubrication System - Air Dryers.

TYPE: AT2720



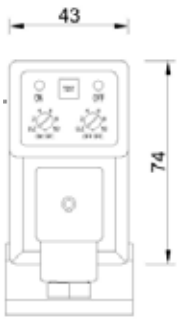
Features

Supply voltage: UL 24 – 240 VAC/VDC - 50/60 Hz (Code **AT2720C02I**)
CE 24 – 240 VAC/VDC - 50/60 Hz
Absorption: 4 mA max.
Operation temperature: -10 to +60 °C
Protection class: IP 65 (according to EN60529) with connector and gasket
Switch holding voltage: 400 V max.
Switch capacity: 1A
Inrush current: 10A for 10 ms
Duty cycle: 100% ED
Switch life: $3 \cdot 10^8$
Repeat accuracy: ± 1%
Timing temperature coefficient: ± 0.005% - °C
Time ON: ■ from 0.5 to 10 seconds
Time OFF: ■ from 30 seconds to 45 minutes
Set/Reset/Test: membrane key
Circuit: UL 94 V0
Indicators: YELLOW LED for 'power ON'
YELLOW LED for 'valve open'
Manual override: Test
Colour: Black

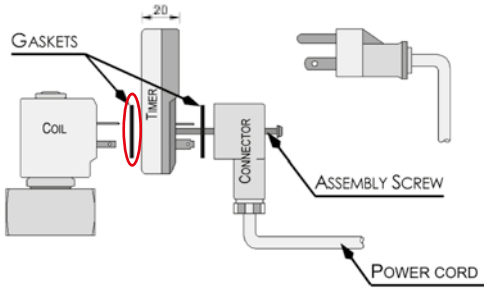
Notes

In case of DC supply, polarity should be reversed: left fast-on positive (+), right fast-on negative (-). Please refer to product instructions for use
Timers are supplied in single boxes with one squared gasket and M3x50 fixing screw (see assembling scheme)

Dimensions & weights		AT2720
A	[mm]	43
B	[mm]	74
C	[mm]	20
weight	[kg]	0.077



Assembling scheme



Coils for M&M branded solenoid valves

M&M International coils are designed for continuous duty in conformity to the EN 60730 safety standards. They are encapsulated in a self-extinguishing synthetic material and offer high mechanical protection and excellent thermal dissipation. They are fully interchangeable on all M&M International solenoid valves, thereby reducing warehouse inventories.



SERIES: 2000



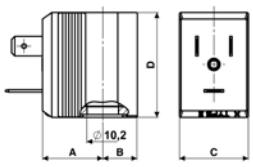
SERIES: 7000

Common features
Electrical connection: fast on connection 6,3x0,8
Protection class: IP 65 (according to EN60529) - NEMA 4 (UL 50) with connector and gasket
Operation: continuous (ED 100%)
Voltage tolerance: AC +10% to -15%
DC +10% to -5%

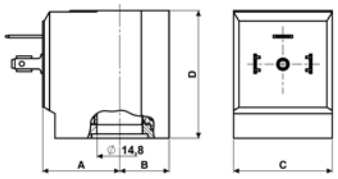
Notes
All coils manufactured under M&M brand comply with the RoHS Directive (2011/65/EU)
Insulation class according to EN 60730-1 see the below table
All windings are realised with class 'H' wires (180 °C)
Custom voltages and low power consumption available: please contact M&M Instruments Sales Department
Minimum batch quantity required for some voltage ratings

Dimensions & weights		Series 2000	Series 7000
A	(mm)	19.5	25
B	(mm)	11.2	16
C	(mm)	22.3	32
D	(mm)	33.7	41.4
Weight	(kg)	0.060	0.146

Series 2000:



Series 7000:



Coils	Voltage	Power		Class	Ambient Temperature		Media Temperature[1]	
Code	**-**	**Holding**	**Inrush**	**-**	**Min.**	**Max.**	**Min.**	**Max.**
215<u>0</u>	12 VDC	7 W	–	F 155 °C	-10 °C	+50 °C	-10 °C	+130 °C
225<u>0</u>	24 VDC	7 W	–					
275<u>0</u>	230 VDC	7 W	–					
210<u>0</u>	12 V / 50/60 Hz	10 VA	16 VA					
220<u>0</u>	24 V / 50/60 Hz	10 VA	16 VA					
230<u>0</u>	48 V / 50/60 Hz	10 VA	16 VA					
240<u>0</u>	110 V / 50 Hz - 120 V / 60 Hz	10 VA	16 VA					
260<u>0</u>	200 V / 50 Hz - 220 V / 60 Hz	10 VA	16 VA					
270<u>0</u>	230 V / 50 Hz - 240 V / 60 Hz	10 VA	16 VA					
215<u>R</u>	12 VDC	6 W	–	F 155 °C	-10 °C	+60 °C	-10 °C	+130 °C
225<u>R</u>	24 VDC	6 W	–					
220<u>R</u>	24 V / 50 Hz	9 VA	14 VA					
226<u>R</u>	24 V / 60 Hz	9 VA	14 VA					
240<u>R</u>	110 V / 50 Hz - 120 V / 60 Hz	9 VA	14 VA					
270<u>R</u>	230 V / 50 Hz - 240 V / 60 Hz	9 VA	14 VA					
<u>B</u>150	12 VDC	7 W	–	F 155 °C	-10 °C	+50 °C	-10 °C	+130 °C
<u>B</u>250	24 VDC	7 W	–					
<u>B</u>200	24 V / 50/60 Hz	10 VA	16 VA					
<u>B</u>400	110 V / 50 Hz - 120 V / 60 Hz	10 VA	16 VA					
<u>B</u>700	230 V / 50 Hz - 240 V / 60 Hz	10 VA	16 VA					
21V<u>1</u>	12 VDC	10 W	–	H 180 °C	-10 °C	+70 °C	-10 °C	+130 °C
22V<u>1</u>	24 VDC	10 W	–					

Series 2000 - Standard
Connection: to DIN 46244

Series 200<u>R</u> - UL approved
UL approved coils recognized component, file number E193928

Series <u>B</u>000 - Impregnated
Impregnated coils for humid environments (e.g code <u>B</u>400)

Series 200<u>1</u> - Class 'H'

[1] Some valve configurations allow a max. fluid temperature up to 180 °C, please check valve datasheets.

Coils for M&M branded solenoid valves

Coils	Voltage	Power		Class	Ambient Temperature		Media Temperature[1]	
Code	-	Holding	Inrush	-	Min.	Max.	Min.	Max.
7150	12 VDC	14 W	–	F 155 °C	-10 °C	+50 °C	-10 °C	+130 °C
7250	24 VDC	14 W	–					
7750	230 VDC	14 W	–					
7100	12 V / 50/60 Hz	18 VA	36 VA					
7200	24 V / 50/60 Hz	18 VA	36 VA					
7300	48 V / 50/60 Hz	18 VA	36 VA					
7400	110 V / 50 Hz - 120 V / 60 Hz	18 VA	36 VA					
7600	200 V / 50 Hz - 220 V / 60 Hz	18 VA	36 VA					
7700	230 V / 50 Hz - 240 V / 60 Hz	18 VA	36 VA					
725R	24 VDC	10 W	–	F 155 °C	-10 °C	+60 °C	-10 °C	+130 °C
720R	24 V / 50 Hz	15 VA	30 VA					
740R	110 V / 50 Hz - 120 V / 60 Hz	15 VA	30 VA					
770R	230 V / 50 Hz - 240 V / 60 Hz	15 VA	30 VA					
7251	24 VDC	14 W	–	H 180 °C	-10 °C	+70 °C	-10 °C	+130 °C
7201	24 V / 50/60 Hz	18 VA	36 VA					
7401	110 V / 50 Hz - 120 V / 60 Hz	18 VA	36 VA					
7701	230 V / 50 Hz - 24 V / 60 Hz	18 VA	36 VA					
71Z1	12 VDC	22 W	–	H 180 °C	-10 °C	+70 °C	-10 °C	+130 °C
72Z1	24 VDC	22 W	–					
72K1	24 V / 50/60 Hz	25 VA	50 VA					
74K1	110 V / 50 Hz - 120 V / 60 Hz	25 VA	50 VA					
77K1	230 V / 50 Hz - 240 V / 60 Hz	25 VA	50 VA					

[1] Some valve configurations allow a max. fluid temperature up to 180 °C, please check valve datasheets.

Series 7000 - Standard

Connection: to DIN EN 175301-803 form A (ex DIN 43650-A)

OPTIONS

Impregnated coils for humid environments (e.g. code D400)

Series 700R - UL approved

UL approved coils recognized component, file number E193928

Series 7001 - Class 'H'

OPTIONS

Impregnated coils for humid environments (e.g. code D701)

Series 7000 - High Power

OPTIONS

Impregnated coils for humid environments (e.g. code D7K1)

DIN connectors for M&M branded solenoid valves

Coil connectors provide the safest flexible system for connecting M&M International solenoid valves and give a protection class of IP65. They are designed and made of synthetic material offering a high level of electrical insulation. Compliance with UL 1977 and VDE Regulations.



TYPE: 600 001-

CE

Common Features
Rated voltage (max.): 250 VAC / 300 VDC
Nominal current: 10 A (Rated) / 16A (max.)
Wire cross-section: 1.5 mm^2 (max.)
Cable entry: PG9 (6 to 8 mm)
Protection class: IP 65 (only with gasket)
Insulation class: group C - VDE 0110
Housing colour: black

Options
Connectors with protection circuits
Connectors with LED
Connectors with flying leads
Other versions available upon request and depending on quantity:
please contact M&M InstrumentsSales Department



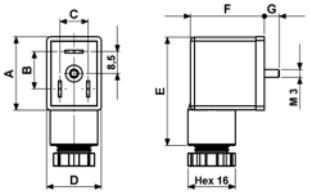
TYPE: 600 011-

CE

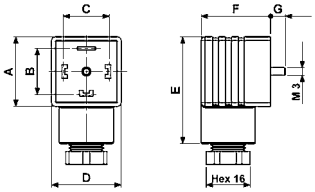
Notes
Connectors are supplied with thermoplastic rubber bordered gasket, fixing screw and preinstalled position with ground H 12 (the connector can be spinned when connected)

Dimensions & weights		600001-	600011-
A	(mm)	28.5	27.7
B	(mm)	14.5	18
C	(mm)	11	18
D	(mm)	21.5	27.7
E	(mm)	41.2	41
F	(mm)	28.8	26.8
G	(mm)	5.5	5.5
weight	(kg)	0.019	0.020

TYPE: 600 001-



TYPE: 600 011-



Customised products

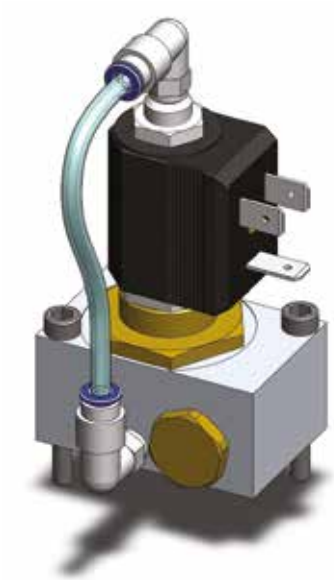
M&M Instruments is constantly evolving and developing new products, enabling us to remain competitive in an ever changing market and keeping at the forefront of technological advances. For many years our team has operated in the most diverse industrial sectors and therefore acquired vast experience with a multitude of specialist applications. Our experience enables us to understand, design and manufacture to our customers' specific requirements.

We can develop new customised solenoid valve solutions according to the customers' technical requirements and needs, concentrating on increasing functionality, optimising space and reducing costs of existing systems.

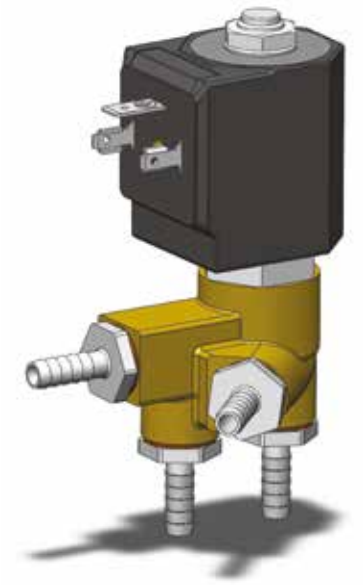
Please find below some examples:



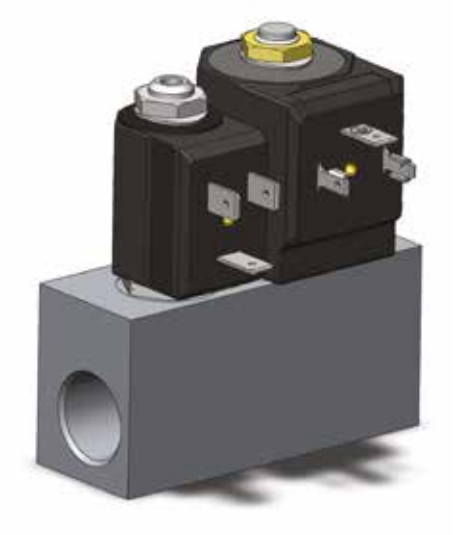
CAR AIR CONDITIONING REFILLER



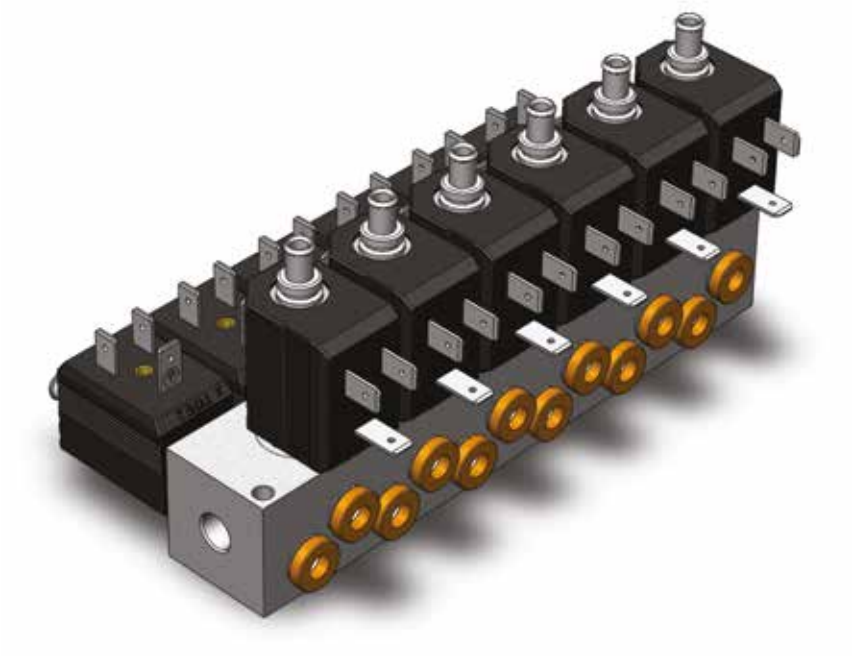
COMPRESSED AIR TREATMENT



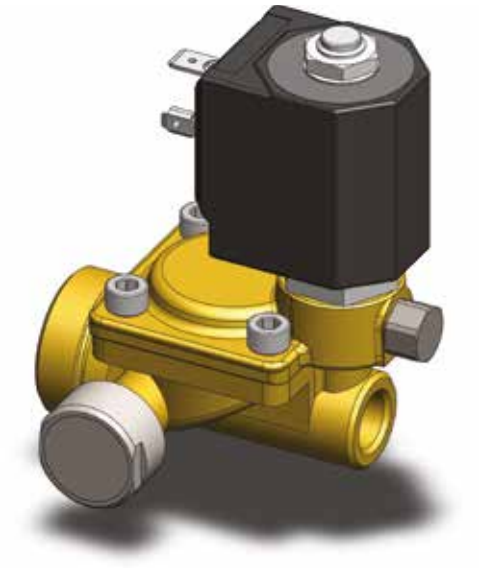
STERILISERS



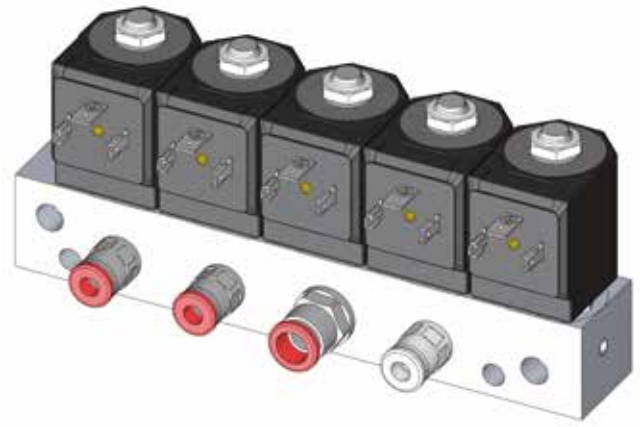
PACKAGING WITH
VACUUM SYSTEMS FOR INDUSTRY



INDUSTRIAL AUTOMATION



FIREFIGHTING SYSTEMS



COOLING SYSTEM

Valve selection

Valve Selection

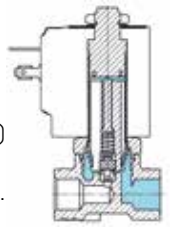
A solenoid valve should be chosen whenever the following conditions are met:

- ✓ Media without dirt particles
- ✓ Moderate flow volumes
- ✓ Average differential pressures
- ✓ High speed in operation
- ✓ Media with a viscosity not higher than 21 cST(3°E)

Valve Types

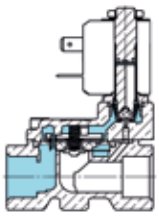
Direct acting solenoid valves 2/2 and 3/2 way NC or NO

When energised the coil electrically generates a magnetic force attracting the armature towards the fixed core. Inside the armature is a seal that acts upon the main orifice, either when the coil is de-energised (normally closed) or when the coil is energised (normally open). By revealing the orifice allows the fluid to pass. Average response time 5 – 25 ms.



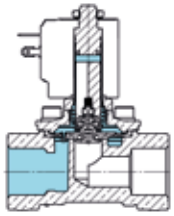
Pilot operated solenoid valves 2/2 way NC or NO

This solenoid valve uses the force of the fluid to operate the valve via a suitable integral pilot valve. The inlet pressure must always be at least the same as the minimum ΔP figure shown on the datasheets. Using the same coils as direct acting valves much higher fluid volumes and pressures can be controlled with this solenoid valve. Average response time 50 – 500 ms.



Pilot operated solenoid valves with assisted lift 2/2 way NC

These solenoid valves are a combination of the pilot operated valves and the direct acting valves. The armature is mechanically connected to the diaphragm on which there is a pilot office. With minimal pressures the solenoid valve acts like a direct acting valve. Total opening as well as full flow do not occur at low pressures. With higher pressures it works as a pilot operated valve with full opening. Average response time 50 – 500 ms.



Function Types

2/2 way function indicates valves with inlet and outlet connections, whilst valves with 3/2 way functions have 3 connections and 2 flow passages. One orifice always remains open and one closed. Connections and flow direction are shown in the symbols on each technical datasheet (DIN-ISO 1219).

At rest valves can be either normally closed (NC) or normally open (NO):

- Normally closed (NC): the valve opens when the coil is energised.
- Normally open (NO): the valve closes when the coil is energised.

Optional Features

Manual Override (M)

Normally closed direct acting and pilot operated solenoid valves can be supplied with a manual override which allows the valve to be opened independently of electrical current.

Waterhammer Control (V)

Pilot operated solenoid valves (only versions specified in each datasheet) can be supplied with a system that regulates the closing speed of the diaphragm in order to control waterhammer.

The seal closing speed is operated by the adjusting screw: by screwing it clockwise (in the "+" direction) when using liquid, the valve will close slower reducing any waterhammer effect that may occur in the solenoid valve and the upstream pipes.

In the case of larger valves (1¼", 1½" and 2"), please adjust the anti-waterhammer screw to ensure that that valve closes as slowly as possible in order to avoid causing any damage that may affect the functioning of the equipment and valve due to the waterhammer effect.

The following points should be considered to ensure a correct choice of valve:

Connections and Nominal Diameters

Threaded connections are either "G"- inches (ISO 228) or metric. Nominal diameters (DN) are expressed in millimetres and correspond to the diameter of the valve's main orifice.

Performances (OPD)

Pressure values shown in this catalogue are the max values expressed in relative bar with no pressure at outlet.

For 3/2 way solenoid valves the pressure range can vary when used in other functions or systems.

The maximum pressure (PN) that the valve can tolerate is tested to 1.5 times the maximum value of the operating pressure differential (OPD).

Pressure (units of measurement)

The SI unit of pressure is the pascal (Pa), defined as 1 newton of force per square metre (1 N/m^2).

As Pa is such a small unit, the kPa (1 kilonewton/m^2) or MPa (1 Meganewton/m^2) tend to be more appropriate to fluid engineering.

However, the most popular metric unit used to measure the pressure in fluid engineering field is the bar, which is equal to 105 N/m^2, and approximates to 1 atmosphere. This unit is used throughout this publication.

Other units often used include lb/in^2 (PSI), kg/cm^2, atm in H_2O (atmosphere) and mm Hg. Conversion factors are readily available from many sources.

Absolute pressure (bar a)

This is the pressure measured from the datum of a perfect vacuum: i.e. a perfect vacuum has a pressure of 0 bar a.

Gauge pressure (bar g)

This is the pressure measured from the datum of the atmospheric pressure. Although in reality the atmospheric pressure will depend upon the climate and the height above sea level, a generally accepted value of 1.013 bar a (1 atm) is often used. This is the average pressure exerted by the air of the earth's atmosphere at sea level.

Gauge pressure = Absolute pressure - Atmospheric pressure

Pressure above atmospheric will always yield a positive gauge pressure. Conversely a vacuum or negative pressure is the pressure below that of the atmosphere. A pressure of -1 bar g corresponds closely to a perfect vacuum.

Differential pressure

This is simply the difference between two pressures. When specifying a differential pressure, it is not necessary to use the suffixes 'g' or 'a' to denote either gauge pressure or absolute pressure respectively, as the pressure datum point becomes irrelevant. Therefore the difference between two pressures will have the same value whether these pressures are measured in gauge pressure or absolute pressure, as long as the two pressures are measured from the same datum.

Flow

The flow is the quantity of fluid that passes through the valve's main orifice which has the nominal diameter (DN) shown in the tables.

The flow is given with a constant Kv value (according to VDI/VDE 2173) that shows how many cubic meters of water, at a temperature of 20 °C, flow through the valve in one hour with a pressure difference of one bar across the valve.

To determine the flow at higher pressures, multiply the Kv value by the square root of the differential pressure. Flow values shown in the selection tables are subject to a tolerance of ± 15%.

Viscosity

Viscosity of a fluid (liquid or gas) is its resistance to flow freely in a duct.

This phenomenon is also called internal friction and depends on existing cohesion forces among the fluid molecules. The viscosity of liquids decreases as the temperature rises; the viscosity of gases grows if the volume does not change.

According to the International System of Units (SI), the physical quantities are: force **F** ⇨ in Newton **N**, distance **h** ⇨ in meters **m**, area **A** ⇨ in square meters **m^2**, speed **u** ⇨ in meters per second **m/s**, the unit of measurement of the **dynamic viscosity** is Pascal per second (Pa•s) or Newton multiplied by second per square meter ($N•s/m^2$).

Dividing the dynamic viscosity of the liquid by its density, you can obtain the **kinematic viscosity**. Its unit of measurement is expressed in square meter per second (m^2/s). Since the given numerical values are too small, the most common used unit is 10.000 times smaller: the stokes (stox) **St,**

$$1\ St = 1 \cdot 10^{-4}\ m^2/s \text{ or } 10.000\ St = 1\ m^2/s$$

as well as the additional unit centistokes **cSt**

$$1\ cSt = 1 \cdot 10^{-2}\ St$$

Technical information

General Information on frequently used seal materials

Consideration of the media should be made when selecting seal and body types.

NBR should be used for air, water, neutral gases, diesel and in general it is resistant to oils and grease from -10 to +90 °C.

EPDM for hot water and steam. It is resistant to bases and acids in weak concentrations from -40 to +140 °C. EPDM seals should not be used for media containing oil.

FKM combines most of the characteristics of NBR and EPDM and is particularly suitable for hot water and hydrocarbons from -10 to +140 °C (not for steam).

PTFE is practically resistant to all media. It is rigid and is used from -20 to +180 °C.

SIGODUR (filled PTFE) and **RUBY** are stiff materials particularly suitable for heavy duty applications.

Kalrez® Spectrum™ 6375 is a compound specifically designed for the chemical process industry. This compound has excellent broad chemical resistance, good mechanical properties, and outstanding hot-air aging properties. Kalrez® 6375 is well suited for use in mixed process streams because of its excellent resistance to acids, bases and amines. It is also recommended for use in hot water, steam pure ethylene oxide and propylene oxide.

Coil power supply

It is important that the exact voltage and frequency of the coil is used for the valve to operate correctly. Provided the coil is fitted correctly on the operator and that the armature is not obstructed, the valve can be operated for an indefinite time within the temperature limitations indicated. All solenoid valves have a copper shading ring to reduce vibrations caused by alternating currents. **Remark: The same valve fitted with coils of different power may have different pressure ratings than standard combinations indicated in each datasheet in this catalogue. (e.g. UL coils or high power coils).**

Media and ambient temperatures

Temperature limits for the media in the datasheets and should be used as a guide to valve selection. Normally the maximum ambient temperature can reach +50 °C for solenoid valves with coils in class "F", +70 °C for class "H". For applications outside these limits please contact our Technical Department.

General purpose solenoid valves

Solenoid valves shown in this catalogue, either normally open or normally closed, are intended to control the flow of fluids and cannot be used as safety valves.

Valve installation

To ensure proper valve function please observe following instructions:

Water hammer or fluid hammer

Water hammer (or, more generally, fluid hammer) is a pressure surge or wave resulting when a fluid (usually a liquid but sometimes also a gas) in motion is forced to stop or change direction suddenly (momentum change).

Water hammer commonly occurs when a valve is closed suddenly at an end of a pipeline system, and a pressure wave propagates in the pipe. It may also be known as hydraulic shock.

When using liquid fluids water-hammer can occur at pressure of 6 relative bar or higher.

This pressure wave can cause major problems, from noise and vibration to pipe collapse. It is possible to reduce the effects of the water hammer pulses with accumulators and other features.

Mitigating measures:

– **Air vessels** typically have an air cushion above the fluid level, which may be regulated or separated by a bladder. Sizes of air vessels may be up to hundreds of cubic meters on large pipelines. They come in many shapes, sizes and configurations. Such vessels often are called accumulators or expansion tanks.

– **Water Hammer** Arrestors are hydropneumatic devices similar to shock absorbers that can be installed between the water pipe and the machine to absorb the shock and stop the banging.

Safety

This product is not a safety device and must not be used as sole device to prevent the over-pressure of some parts of the plant or the containment of dangerous fluids.

Always connect the coil's earth terminal to ground to ensure the safety of the user and installation. The coil provides the basic insulation only. Install the product in a protected place to prevent electric shocks.

The coil should not be energized if it is not fitted onto a valve or without a plunger inside the valve, as it would overheat and get damaged. Do not touch the energized coil: risk of high temperature.

Do not use the tubes for conveying fluid to ground electrical devices.

Before disconnecting or disassembling the valve, make sure that there is no pressure inside the tubing or the valve itself. Accidental shocks due to fall or collision may damage the operator and/or the integrity of the coil encapsulation thus causing malfunctions such as loss of insulation, seizure of the moving parts and overheating.

Installation

Check for the operating conditions on product label and on the technical documents.

Check for compatibility between medium and valve materials. In case of doubt, please contact the manufacturer.

Keep the valve operator in a vertical position, facing upwards. This prevents limescale or dirt particles in the operator tube which could restrict the armature or create excessive noise whilst operating.

Whilst tightening or unscrewing the valve must be held or revolved only and exclusively by the hexagon or the frame set (in order to avoid damage to its components such as coil, armature tube, etc.).

The recommended **tightening torque of the coil nut is 0,5 Nm maximum**, a higher torque may cause damage to the valve armature tube.

The recommended **tightening torque of the connector screw is 0,5 Nm maximum**, a higher torque may cause an excessive yield stress with consequent damages to the coil rivet and/or plastic encapsulation.

Connections

To ensure that the solenoid valve works properly, do not connect to pipework with an internal diameter less than the nominal diameter (DN) of the valve. Clean all pipework before connection to the solenoid valve: care should be taken to prevent foreign bodies – dirt or material chips – from entering the valve during the assembly phase.

Use suitable seal material on the valve threads. Where liquid sealants are used, it is important to prevent them from entering the valve and block the movement.

Flow Direction

Respect the direction of flow across the valve, shown with an arrow or by numbers on the valve body, depending on the model type.

Filtration

If the fluid contains dirt particles it is necessary to install a filter upstream of the solenoid valve. Dirt is the most frequent cause of malfunction.

Environment

Coils fitted with suitable connectors have a protection class of IP65. However, it is advisable not to use the solenoid valve outside or in very damp conditions without adequate protection. Provide sufficient ventilation for the solenoid valve. **During continuous service the coil of the solenoid valve becomes hot and should not be touched.**

Quality standards

M&M Instruments has a management system certified to ISO 9001, ISO 14001 & ISO 45001.

DNV is an independent classification society. Since 1998 it has certified the compliance of M&M Instruments quality management system (formerly M&M International srl), and recently also the compliance to the ambient and safety standards, emphasizing the effort to implement continuous improvement processes aimed at developing the business in a logic of customer satisfaction, sustainability and safety for all its employees.

Certifications and approvals

Underwriters Laboratories Quality Certificate

The UL Listing mark on a product signifies that the product meets UL's Standards for Safety. The UL Listing mark appears on products and components suitable for factory and field installation.

All of the products carrying a UL Listing mark are covered by UL's Follow-up services program to verify that the products continue to be manufactured in compliance with UL's Safety Requirements.

M&M instruments manufactures and resells valve coils and timers complying with UL 429 and 746C under M&M International brand.

The cURus Listing mark on the products indicates that the compliance is accepted both in USA and Canada.

RoHS

The Restriction of Hazardous Substances Directive (RoHS) 2011/65/EU regards the restriction of the use of Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent chromium (Cr6+), Polybrominated biphenyls (PBB) and Polybrominated diphenyl ether (PBDE) in electrical and electronic equipment sold in the European Union.

RoHs is meant to prevent the release of these substances into the environment and protect the human, animal and environmental health, especially during the waste treatment.

The CE mark on a product guarantees the compliance with the RoHS Directive. Since 2006 the coils manufactured under M&M brand comply with the RoHS directive with the letter 'R' before the batch number.

Miscellaneous

Upon request (to be specified at the time of the Purchase Order) M&M Instruments can provide the following inspection documents, which are also related to requirements of the PED Directive 2014/68/EC as additional evidence of the technical requirements of supplies:

For metal parts in stainless steel AISI 316L or 304L the inspection certificate 3.1 according to the standard EN 10204 (this certificate is mandatory only for products in categories above I, see PED 2014/68/EC ANNEX I, art. 4.3).

For all products the Test Report 2.2 according to the standard EN 10204, is relevant for products in category I or SEP.

CE marking

CE

European Community Conformity

The CE marking was introduced in 1993 upon establishment of the European Economic Area. It regulates the entire life cycle of a product: design, manufacturing, placing on the market, disposal and enables its free movement within the European market (EEA).

CE marking signifies that the product conforms with the essential applicable EC requirements, such as safety, public health, consumer protection, and gives the product the presumption of conformity.

By affixing the CE mark on a product, manufacturers and importers are declaring, at their sole responsibility, conformity with all of the legal requirements of the Directive.

EC directives

EC directives for product safety were issued to unify regulations and working practices in force in the countries of the community prior to the constitution of the European Union. The following three directives concern electrical appliances and machines in general:

Machinery directive

EMC Directive

Low Voltage Directive (2006/95/EC)

The directive 97/23/EC concerns safety of pressure bearing equipment.

The directive 2011/65/EU (RoHS) limits the use of dangerous substances in electrical and electronic equipment.

Ask M&M InstrumentsSales Department for your Declaration of compliance to EC Regulation no. 1907/2006.

M&M branded products conforming to the EC directives

Products subject to the Low Voltage Directive are given a certification by the European Community.

M&M Instruments issues declarations of conformity for M&M branded products.

We believe that our products are components and as such do not form a part of the range of products subject to the EMC directive. However, conformity of M&M branded products to the EMC directive could change depending on the function of the product's use, of the configuration (for example the use of connectors with passive electronic components, LED etc.), or the conditions of the electrical connection. For this reason it is recommended that you check the compliance of the final product with the EMC Directive.

Coding chart

Example code **_ - _ - B - 2 - 97 - D - V - E - K_ - 2700_ - 0B1**

Electrical Supply
. = AC
C = DC

Function
. = Normally closed
D = Diverting
G = Universal
L = Latching
R = Normally open
S = 2nd service

Serial Letter
B = Armature ø10 mm
C = Armature ø10 mm low power
D = Armature ø14.5 mm
E = Armature ø14.5 mm low power

Ways / Type of Valve
2 = 2/2 ways
3 = 3/2 ways
6 = For steam
8 = Various
9 = Manifold

ID Code
Valve body identification

Fixed Core Type
A = 3/2 way 1/8" gas, spherical
C = 3/2 way 1/8" gas for bicone
D = 2/2 way 1/8" gas
E = 3/2 way gasket holder

Seal Material
B = NBR
E = EPDM
K = Kalrez®
L = Sigodur (fixed PTFE)
R = RUBY
S = Silicone
T = PTFE
V = FKM

ø Orifice (mm)
A = 1.0
B = 1.2
C = 1.4 - 1.5 - 1.6
D = 1.7 - 1.8
E = 2.0
F = 2.2 - 2.3
G = 2.5
H = 3.0 - 3.2
L = 4.0
M = 4.5
N = 5.0
O = 5.5
P = 6.0
T = 10.0
U = 10.5 - 11.0
V = 11.5
Z = 13.0
W = 14.5 - 15.0 - 15.5 - 16.5
X = 18.0 - 20.0
Y = 24.0 - 25.0
K = 40.0
J = 50.0

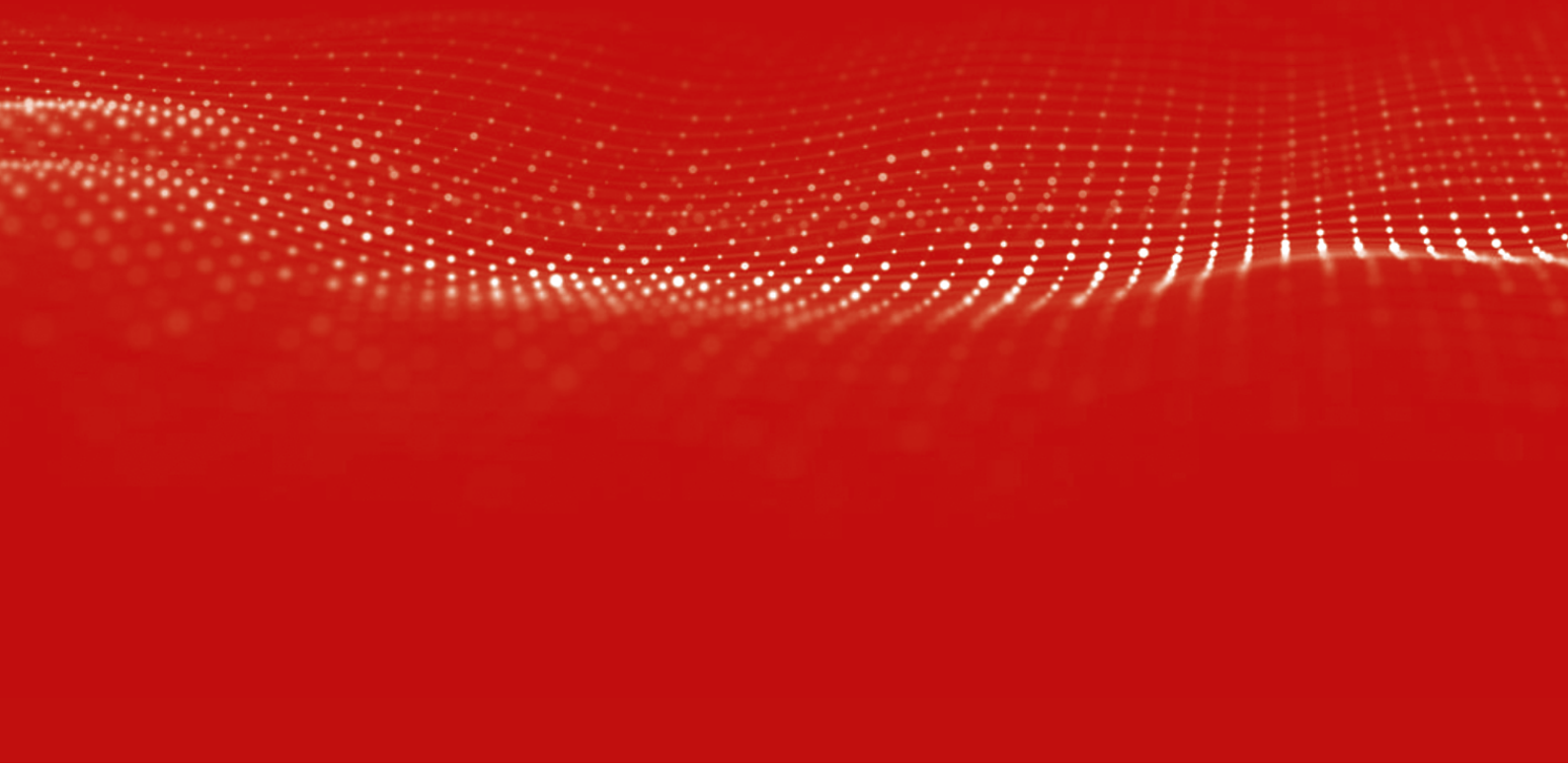
Special Executions
A = Silver shading ring
F = Protective treatment
K = Electroless nickel plating treatment
M = Manual override
N = NPT thread
V = Speed control screw

Coil Code

Type of Connector
0A1 = With connector 600 011 00 - Not assembled on the coil
0B1 = With connector 600 001 00 - Not assembled on the coil

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