

Series F300

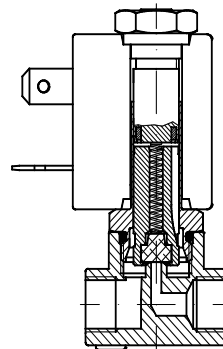
General

F300 series includes a vast range of solenoid valves in brass and stainless steel designed to control air, water, steam and all fluids that are compatible with the materials used for bodies and seals. The solenoid valves are 2 or 3-way, normally closed, normally open, general service, direct acting or servo-assisted, with connections available in NPT & BSP threads from G1/8" up to G3", with a working pressure range from vacuum to 100 bar. Solenoid valves are available with coils that conform to CESI 03 ATEX 344 certification for explosive environments. Our technical office ensures the highest standard of skill and understanding for the widest variety of applications, ensuring that the best possible solutions are found.

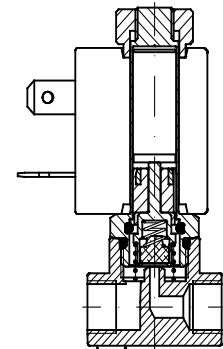
Version manufactured

Solenoid valves direct action 2-way: 2-way solenoid valves have an input connection and an output connection machined in the valve body, the orifice being intercepted by the poppet moved by the core tube.

They can be **normally closed (2/2 N.C.)**, in this case the fluid is intercepted by the poppet at rest, with electricity applied, the input orifice is opened and the media reaches the intended use.



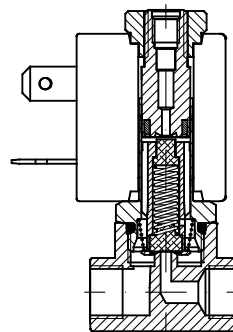
They can be **normally open (2/2 N.O.)**, in this case at rest the orifice remains open without electricity applied, the media reaches the intended use. When electricity is applied the input orifice closes.



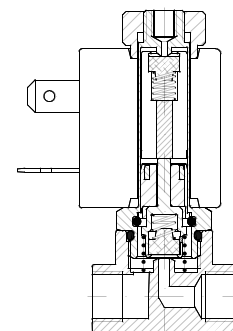
Performance in both cases depends solely on the magnetic field produced by the solenoid coil. The solenoid valves can also work at zero pressure.

Solenoid valves direct action 3-way: 3-way solenoid valves have an input and an output connection in the valve body and an exhaust connection fitted in the stem of the core tube. The input and exhaust orifices are intercepted directly by the poppet fitted within the core tube.

They can be **normally closed (3/2 N.C.)** and in this case, at rest, the incoming fluid is intercepted by the poppet and output port in connected to the exhaust port. Applying electrical power, the input orifice is opened and feed is supplied to the output. Exhaust is closed.



They can be **normally open (3/2 N.O.)** and in this case, at rest, the input orifice is open without electricity applied, the media reaches the intended use. Exhaust is closed. Applying power, the input orifice closes and the output discharges through the exhaust port.



Performance in both cases depends solely on the magnetic field produced by the solenoid coil. The solenoid valves can also work at zero pressure.



Servo-assisted solenoid valves

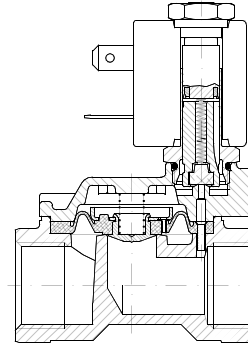
Large-sized passage orifices increase the value of the static pressure which has to be overcome by the magnetic field produced by the coil. These solenoid valves are used to control high-pressure values with large diameter bores. In these models, the fluid helps in the opening or closing of the main poppet.

They can be **normally closed (2/2 N.C.)** and have an input and a utilisation connection machined into the valve body and at rest the fluid is intercepted by the main poppet, which can be either diaphragm or a piston. In this condition, the fluid acts on both faces of the main plunger through a pinhole contributing to closure of the poppet.

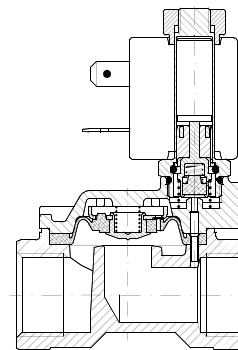
Applying electrical power, the secondary, or pilot, orifice opens leading to the exhaust of the fluid, which acts to close the main poppet.

Greater force is thus applied when opening, the poppet is raised from the orifice and allows the media to flows to the output.

In these versions, performance does not depend solely on the magnetic field produced by the coil; a minimum input pressure is also needed so as to move the diaphragm or the piston overcoming its rigidity and to keep it raised from the main orifice (Δp minimum performance).



They can be **normally open (2/2 N.O.)** and have an input and output connection machined into the valve body, and at rest the core tube communicates with output, a minimum-pressure difference between the feed and the output causes the main poppet to rise, leading to it opening. Applying electrical power, the secondary orifice closes and equilibrium between the pressure on the two faces of the main poppet is reinstated, and so it returns to its closed position on the main orifice. In this version a minimum working pressure is also needed.



Sealing materials

Designation	Trade names	General characteristics	Field of use
FPM (Fluorocarbon)	VITON TECNOFON FLUOREL	A synthetic hexa-fluoropropylene-based elastomer. Excellent resistance to high temperatures. Excellent resistance to ozone, oxygen, mineral oils, synthetic hydraulic fluids, fuels, hydrocarbons and many chemical products. Not specific for superheated steam.	For general use up to 140 °C



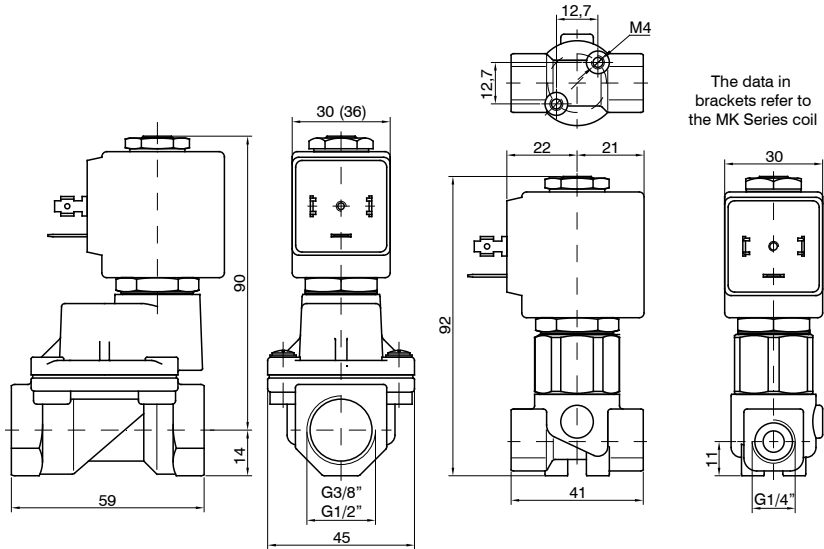
Resistance to fluids

The table below serves to general information relating to the compatibility between FPM (fluorocarbon) and a number of neutral fluids. Where there are corrosive fluids, in order to establish compatibility, it is important to be aware of all the data relating to use: temperature, concentration and composition of the fluid.

PNEUMAX FLUID CONTROL

Fluid	
Ethyl acetate	Not compatible
Acetylene	Compatible
Vinegar	Not compatible
Acetone	Not compatible
Calcareous water	Compatible
Hot water <75 °C	Compatible
Hot water and steam <140 °C	Not compatible
Water with glycol	Compatible
Deionised water	Compatible
Demineralised water	Compatible
Hydrogen peroxide	Compatible
Soapy water	Compatible
Carbon dioxide (liquid)	Not compatible
Dry carbon dioxide (gas)	Compatible
Argon	Compatible
Nitrogen	Compatible
Petrol/Gasoline	Compatible
Benzol	Not compatible
Butane	Compatible
Chloroform	Not compatible
Ethyl Chloride	Compatible
Methyl chloride	Not compatible
Helium	Compatible
Heptane	Compatible
Hexane	Compatible
Ethane	Compatible
Ethanol	Not compatible
Formaldehyde	Compatible
Freon	Not compatible
Natural gas	Compatible
Diesel oil	Compatible
Glycerine	Compatible
Ethylene glycol	Compatible
Hydrogen	Compatible
Isobutane	Compatible
Isopentane	Compatible
Methane	Compatible
Methanol	Not compatible
Calcium monoxide	Compatible
Neon	Compatible
Nitrobenzene	Not compatible
Mineral oil	Compatible
Oxygen	Compatible
Pentane-n	Compatible
Propanol-n	Compatible
Propane-n	Compatible
Carbon sulphide	Not compatible
Toluene	Compatible
Dry trichloroethylene	Compatible
Xylene	Compatible

F3119 - 2-way solenoid valve N.C. brass body and cover, with G connection (ISO 228) - 1/4" ... 1/2"



The data in brackets refer to the MK Series coil

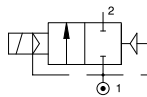
CODE "V" = FPM seals	G connection (ISO 228) ⊕ = Connection			Orifice (mm)	KV (m ³ /h)	Differential pressure (bar)			Power consumption			⊕ = Solenoid coil		Temperature range (°C)
	B	C	D			Min	Max		AC Inrush (VA)	AC Holding (VA)	DC (W)	Series	Size	
							AC	DC						
F3119⊕V52⊕	1/4"	/	/	5,2	0,47	1,5	50	50	20	15	10	MG	30	-10 ... +140
F3119⊕V12⊕	/	3/8"	/	12	2	1	30	30						
F3119⊕V12⊕	/	/	1/2"	12	2,2	1	30	30	40	30	27	MK	36	
F3119⊕V12/1⊕	/	3/8"	/	12	2	1	50	50						
F3119⊕V12/1⊕	/	/	1/2"	12	2,2	1	50	50						

N.B. For use with steam maximum admitted pressure PS is 2,5 bar (relative pressure).

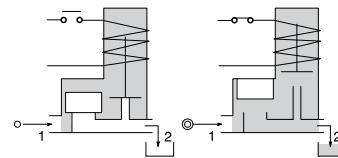
Example: F3119⊕V52⊕ => F3119BV52MG5:

2-way solenoid valve normally closed, servo-assisted piston with G connection (ISO 228) 1/4", main seals in PTFE other in FPM, 5,2 mm orifice, solenoid coil 24 VDC (MG5, size 30 for more information, please refer to the section "Solenoid coils - Series F300").

Pneumatic symbol



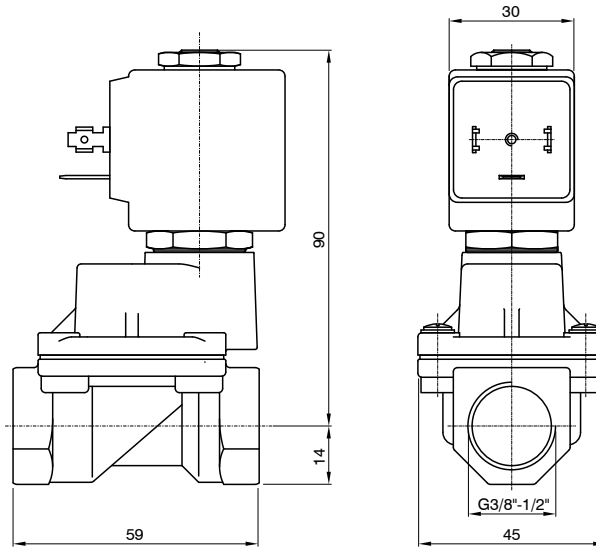
Diagram



Construction characteristics	Technical characteristics	
- Brass body and cover	Maximum admitted pressure (bar)	60
- AISI 303 stainless steel guide tube	Maximum fluid viscosity (mm ² /s)	25cSt
- AISI 430FR stainless steel mobile and fixed core	Minimum differential pressure (bar)	1
- AISI 302 stainless steel springs	Maximum admitted leakage (Nl/h)	<0,2
- Brass piston	Ambient temperature: with class F solenoid coil (°C)	-10 ... +55
- PTFE piston seal	Ambient temperature: with class H solenoid coil (°C)	-10 ... +80
- Sealing assemblies mainly PTFE, others FPM	Mounting position	Preferably with solenoid coil upwards
OPTIONS (on request):	Weight (g) with solenoid coil MG series	630
- Chemical nickel plating	Weight (g) with solenoid coil MK series	710
- certified solenoid coils		



F3119W - 2-way solenoid valve N.C. brass body and cover, with G connection (ISO 228) - 3/8" and 1/2"

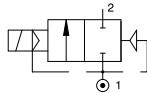


CODE "W" = PTFE seals	G connection (ISO 228) ⊕ = Connection		Orifice (mm)	KV (m ² /h)	Differential pressure (bar)		Power consumption			⊕ = Solenoid coil		Temperature range (°C)	
	C	D			Min	Max		AC Inrush (VA)	AC Holding (VA)	DC (W)	Series		Size
						AC	DC						
F3119⊕W12/1⊕	3/8"	/	12	2	2,5	10	10	20	15	10	MG	30	-10 ... +180
F3119⊕W12/1⊕	/	1/2"	12	2,2	2,5	10	10						

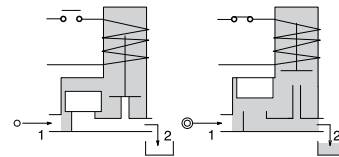
Example: F3119⊕W12/1⊕ => F3119CW12/1MG5:

2-way solenoid valve normally closed, servo-assisted piston for use with steam with G connection (ISO 228) 3/8", PTFE seals, 12 mm orifice, solenoid coil 24 VDC (MG5, size 30 for more information, please refer to the section "Solenoid coils - Series F300").

Pneumatic symbol

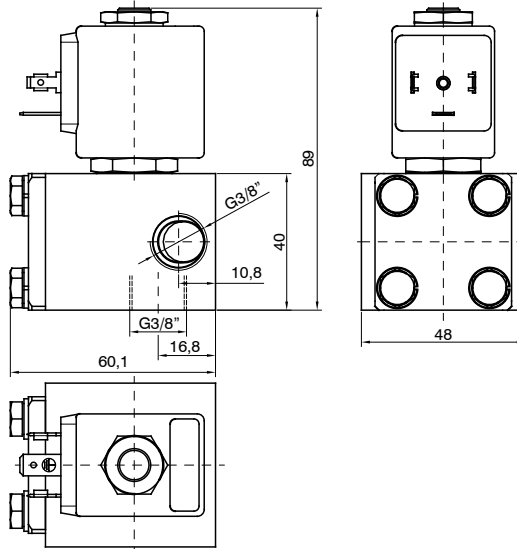


Diagram



Construction characteristics	Technical characteristics	
<ul style="list-style-type: none"> - Brass body and cover - AISI 303 stainless steel guide tube - AISI 430FR stainless steel mobile and fixed core - AISI 302 stainless steel springs - AISI 303 stainless steel piston - PTFE piston seal - PTFE sealing assemblies OPTIONS (on request): <ul style="list-style-type: none"> - Chemical nickel plating surface treatment - certified solenoid coils 	Minimum differential pressure (bar)	2,5
	Maximum admitted leakage (Nl/h)	<0,2
	Ambient temperature: with class F solenoid coil (°C)	-10 ... +55
	Mounting position	Preferably with solenoid coil upwards
	Weight (g)	630

F3123 - 2-way solenoid valve N.C. brass body and cover, with G connection (ISO 228) - 3/8"

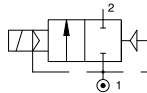


CODE "W" = PTFE seals	G connection (ISO 228) ⊕ = Connection	Orifice (mm)	KV (m ³ /h)	Differential pressure (bar)			Power consumption			⊕ = Solenoid coil		Temperature range (°C)
				Min	Max		AC Inrush (VA)	AC Holding (VA)	DC (W)	Series	Size	
					AC	DC						
F3123⊕W07⊕	3/8"	7	14	0,7	100	80	20	15	10	MG	30	-10 ... +95
					150	150	40	30	27	MK	36	

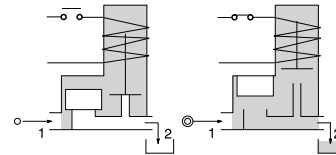
Example: F3123⊕W07⊕ => F3123CW07MG5:

2-way solenoid valve normally closed, servo-assisted piston with G connection (ISO 228) 3/8", main seals in PTFE other in FPM, 7 mm orifice, solenoid coil 24 VDC (MG5, size 30 for more information, please refer to the section "Solenoid coils - Series F300").

Pneumatic symbol



Diagram



Construction characteristics

- Brass body and cover
- AISI 303 stainless steel guide tube
- AISI 430FR stainless steel mobile and fixed core
- AISI 302 stainless steel springs
- AISI 303 stainless steel piston
- Sealing assemblies mainly PTFE, others FPM

OPTIONS (on request):

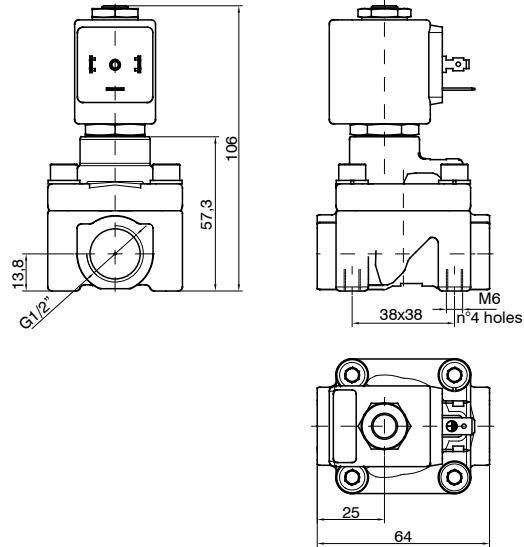
- Chemical nickel plating
- certified solenoid coils

Technical characteristics

Maximum admitted pressure (bar)	200
Maximum fluid viscosity (mm ² /s)	12cSt
Minimum differential pressure (bar)	0,7
Maximum admitted leakage (NI/h)	<0,2
Ambient temperature: with class F solenoid coil (°C)	-10 ... +55
Ambient temperature: with class H solenoid coil (°C)	-10 ... +80
Mounting position	Preferably with solenoid coil upwards



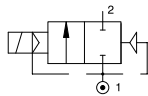
F3124 - 2-way solenoid valve N.C. brass body and cover, with G connection (ISO 228) - 1/2"



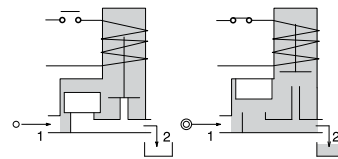
CODE "W" = PTFE seals	G connection (ISO 228) ⊕ = Connection	Orifice (mm)	KV (m ³ /h)	Differential pressure (bar)			Power consumption			⊕ = Solenoid coil		Temperature range (°C)
	D			Min	Max		AC Inrush (VA)	AC Holding (VA)	DC (W)	Series	Size	
					AC	DC						
F3124⊕W12⊕	1/2"	12	60	3	100	100	20	15	10	MG	30	-10 ... +95

Example: F3124⊕W12⊕ => F3124DW12MG5:
2-way solenoid valve normally closed, servo-assisted piston with G connection (ISO 228) 1/2", main seals in PTFE other in FPM, 12 mm orifice, solenoid coil 24 VDC (MG5, size 30 for more information, please refer to the section "Solenoid coils - Series F300").

Pneumatic symbol

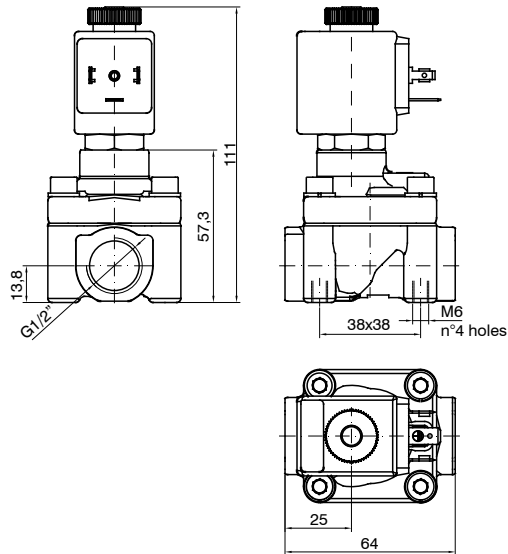


Diagram



Construction characteristics	Technical characteristics	
<ul style="list-style-type: none"> - Brass body and cover - AISI 303 stainless steel guide tube - AISI 430FR stainless steel mobile and fixed core - AISI 302 stainless steel springs - PBT piston - Sealing assemblies mainly PTFE, others FPM OPTIONS (on request): <ul style="list-style-type: none"> - Chemical nickel plating - certified solenoid coils 	Maximum admitted pressure (bar)	150
	Maximum fluid viscosity (mm ² /s)	12cSt
	Minimum differential pressure (bar)	3
	Maximum admitted leakage (Nl/h)	<0,2
	Ambient temperature: with class F solenoid coil (°C)	-10 ... +55
	Mounting position	Preferably with solenoid coil upwards

F3224 - 2-way solenoid valve N.O. brass body and cover, with G connection (ISO 228) - 1/2"

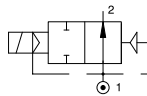


CODE "W" = PTFE seals	G connection (ISO 228) ⊕ = Connection	Orifice (mm)	KV (m ³ /h)	Differential pressure (bar)			Power consumption			⊕ = Solenoid coil		Temperature range (°C)
	D			Min	Max		AC Inrush (VA)	AC Holding (VA)	DC (W)	Series	Size	
					AC	DC						
F3224⊕W12⊕	1/2"	12	60	3	50	50	20	15	10	MG	30	-10 ... +95

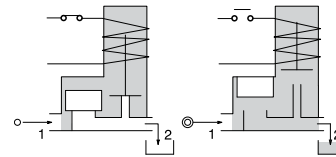
Example: F3224⊕W12⊕ => F3224DW12MG5:

2-way solenoid valve normally open, servo-assisted piston with G connection (ISO 228) 1/2", main seals in PTFE other in FPM, 12 mm orifice, solenoid coil 24 VDC (MG5, size 30 for more information, please refer to the section "Solenoid coils - Series F300").

Pneumatic symbol

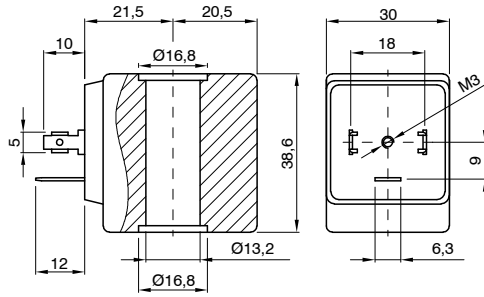


Diagram



Construction characteristics	Technical characteristics	
<ul style="list-style-type: none"> - Brass body and cover - AISI 303 stainless steel guide tube - AISI 430FR stainless steel mobile and fixed core - AISI 302 stainless steel springs - PBT piston - Sealing assemblies mainly PTFE, others FPM OPTIONS (on request): <ul style="list-style-type: none"> - Chemical nickel plating - certified solenoid coils 	Maximum admitted pressure (bar)	100
	Maximum fluid viscosity (mm ² /s)	12cSt
	Minimum differential pressure (bar)	3
	Maximum admitted leakage (Nl/h)	<0,2
	Ambient temperature: with class F solenoid coil (°C)	-10 ... +55
	Mounting position	Preferably with solenoid coil upwards

Solenoid coil 30 mm Ø13, type MG

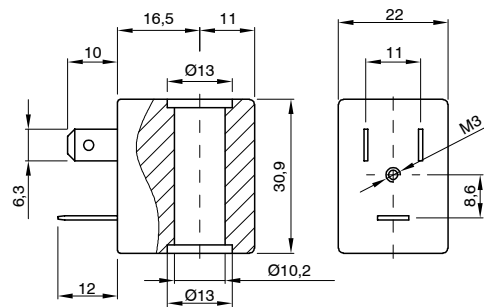


- Options:**
- Electrical connection via cables
 - Special voltages and powers
 - Self-extinguish

Ordering code	
MG	
VOLTAGE	
4=	12 VDC
5=	24 VDC
56=	24 VAC (50-60 Hz)
57=	110 VAC (50-60 Hz)
58=	230 VAC (50-60 Hz)
EAC	

Operational characteristics									
Class of insulation	Tolerance on AC voltage	Tolerance on DC voltage	IP Rating with connector	Continuous service	Electrical connection	Connector	Power		Weight (g)
							AC (VA)	DC (W)	
F	-10% ... +15%	±10%	IP65	ED100%	DIN 43650 A	Code: 300.11.00	15	10	120

Solenoid coil 22 mm Ø10, type MI

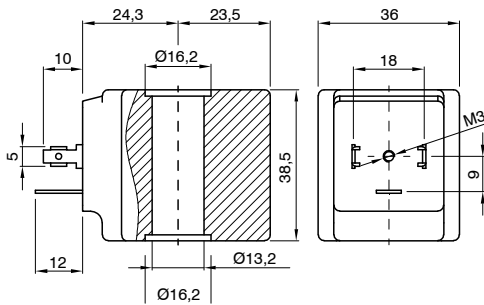


- Options:**
- Electrical connection via cables
 - Special voltages and powers
 - Self-extinguish

Ordering code	
MI	
VOLTAGE	
4=	12 VDC
5=	24 VDC
21=	48-50 VAC (50-60 Hz)
56=	24 VAC (50-60 Hz)
57=	110 VAC (50-60 Hz)
58=	230 VAC (50-60 Hz)
EAC	

Operational characteristics									
Class of insulation	Tolerance on AC voltage	Tolerance on DC voltage	IP Rating with connector	Continuous service	Electrical connection	Connector	Power		Weight (g)
							AC (VA)	DC (W)	
F	-10% ... +15%	±10%	IP65	ED100%	DIN 43650 B	Code: 305.11.00	8	6,5	50

Solenoid coil 36 mm Ø13, type MK

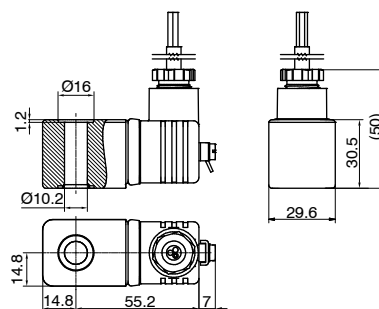


- Options:**
- Electrical connection via cables
 - Special voltages and powers
 - Self-extinguish

Ordering code	
MK	
VOLTAGE	
4=	12 VDC
5=	24 VDC
56=	24 VAC (50-60 Hz)
57=	110 VAC (50-60 Hz)
58=	230 VAC (50-60 Hz)
EAC	

Operational characteristics									
Class of insulation	Tolerance on AC voltage	Tolerance on DC voltage	IP Rating with connector	Continuous service	Electrical connection	Connector	Power		Weight (g)
							AC (VA)	DC (W)	
H	-10% ... +15%	±10%	IP65	ED100%	DIN 43650 A	Code: 300.11.00	30	27	200

Solenoid coil 30 mm Ø10, type XME



- CE II 2G Ex mb IIC T6, T5, T4 Gb
CE II 2D Ex mb IIC T85°C, T100°C, T135°C Db IP65

Ordering code	
XME-3	
VOLTAGE	
5=	24 VDC
56=	24 VAC (50-60 Hz)
57=	110 VAC (50-60 Hz)
58=	230 VAC (50-60 Hz)
EX TECEx	

Operational characteristics								
Class of insulation	Tolerance on AC voltage	Tolerance on DC voltage	IP Rating with connector	Continuous service	Electrical connection	Power		Weight (g)
						AC (VA)	DC (W)	
H	-10% ... +15%	±10%	IP65	ED100%	3 m cable	5,3	5,4	325