

2/2-Wege-Magnetventil

2/2-Wege-Ausführung

Artikel Nr. 148569

Typen Nr. MVB.ES.24V.G14.0-5B



Beispielhafte Darstellung

Die Standardbaureihe in den Ausführungen

- direktgesteuert

- vorgesteuert

Gerätesteckdose nach ISO 4400

Mediumtemperatur max. 160 °C

Technische Informationen

Gewinde	G 1/4 IG
Betriebsdruck	0 - 5 bar
Spannung	24 V DC
Gehäuse	Edelstahl 1.4401
Ventilsitz	Edelstahl
Innenteile	Edelstahl
Dichtmaterial	FKM
Mediumtemperatur	-10 bis 160 °C
Umgebungstemperatur	-10 bis 60 °C
Bauform	2
Schutzart	IP 65
Elektrischer Anschluss	ISO 4400 / EN 175301-803 Bauform A
Gewindenorm	DIN EN ISO 228-1
Öffnung	3,0 mm
A	76,2 mm
B	40,0 mm
C	83,0 mm

Kaufmännische Daten

Zolltarifnummer	84812090
Ursprungsland	TR
eCl@ss 5.1.4	27220601
eCl@ss 9.0	27220601
UNSPSC_Code_v190501	40141605
UNSPSC_CodeDesc_v190501	Solenoid valves

Material Informationen

REACH SVHC1 Stoff Name	lead
CAS-Nr. SVHC 1	7439-92-1
RoHS Werkstoff-Hinweis	RoHS compliant
REACH Info	contains SVHC substance

Stainless Steel Solenoid Valve SS1011 Series (G1/8" , G1/4")

GENERAL FEATURES

- Wide pressure range, a flow rate and orifice options.
- Solenoid valves are used with the filter.
- Solenoid valves can be mounted in any position without affecting its operation.
- Coil to be used in a vertical position.
- Working Pressure: -10 °C / +160 °C
- No pressure difference is required.

ELECTRICAL CHARACTERISTICS

Continuous Duty	: ED %100
Coil Insulation Class	: H (180°C)(IEC 85)
Coil Impregnation	: Polyester Fiber Glass
Ambient Temperature	: -10°C, +60°C
Protection Degree	: IP65 (ISO 60529) On request; IP68
Electric Plug Connection	: DIN 46340 3-Poles Connector (DIN 43650)
Connector Specification	: ISO 4400 / EN 175301-803 Form A, Spade Plug (Cable Ø6-8 mm)
Electrical Safety	: IEC 335
Standard Voltages	: AC 12V 15VA, 24V 15VA, 48V 15VA, 110V 15VA, 230V 15VA, 230V 24VA, DC 12V 18W, 24V 18W, 48V 18W, 110V 18W

On request other voltages

Voltages Tolerance : AC -15%, +10% DC -5%, +10%

Frequency : 50 Hz (60 Hz...)

On request; Connector with LED, PWM Socket Specify coil voltage with order

MATERIALS IN CONTACT WITH FLUID

Body	: Stainless Steel (AISI 316)
Internal Parts	: Stainless Steel
Sealing	: VITON, On request; NBR, EPDM
Shading Ring	: Copper (EN 12735-1)
Seats, Core Tube, Springs	: Stainless Steel

OPTIONS

Female connection: BSP; On request NPT

On request Atex (exproof) coil

TECHNICAL FEATURES

Max. Viscosity : 5°E (~37cST or mm²/s)

Response Time : Opening time : 30 ms
Closing Time : 30 ms

SEALS FEATURES

NBR : -10°C...+80°C

EPDM : -10°C...+130°C

VITON : -10°C...+160°C

PTFE : -10°C...+160°C

RUBY : -10°C...+160°C

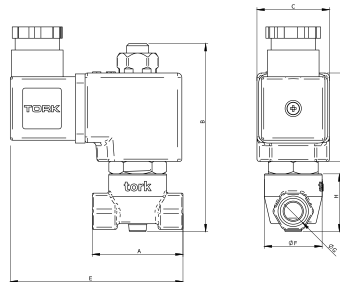
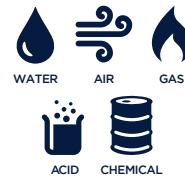


NORMALLY OPEN

2/2 WAY

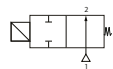
DIRECT ACTING

ΔP=0



Dimensions (mm)							
G	A	B	C	D	E	F	H
1/8"	40	83	32	39	76.2	25.5	25.5
1/4"	40	83	32	39	76.2	25.5	25.5

Coils	Nominal Values	Cold/Hot	Inrush	Holding	Current (A)	Surface Temperature (°C)
C40012VDC18W	12VDC 18W	COLD	19.56	19.56	1.63	20
		HOT	14.52	14.52	1.21	106
C40024VDC18W	24VDC 18W	COLD	20.88	20.88	0.87	25
		HOT	14.64	14.64	0.61	116
C40110VDC18W	110VDC 18W	COLD	19.96	19.96	0.18	23
		HOT	13.56	13.56	0.123	115
C40012VAC15VA	12VAC 15VA	COLD	23.81	16.43	1.3	25
		HOT	-	15.86	1.262	79
C40024VAC15VA	24VAC 15VA	COLD	25.82	15.02	0.62	22
		HOT	-	13.91	0.57	81
C40110VAC15VA	110VAC 15VA	COLD	30.65	15.17	0.137	24
		HOT	-	13.96	0.126	80
C40230VAC15VA	230VAC 15VA	COLD	31.4	15.64	0.068	25
		HOT	-	14.41	0.063	80
C40230VAC15VA	230VAC 24VA	COLD	45.1	23.92	0.0154	23
		HOT	-	21.62	0.0154	100

Solenoid Valve Symbol	Valve Type/Order No	Connection Size	Orifice Size	Pressure min/max	Kv	Seal			Weight
						VITON	NBR	EPDM	
	SS1011	G	mm	Bar	Bar	l/min	✓	✓	kg
	SS1011.00.018	1/8"	1.8	0	12	1.6	✓	✓	0.40
	SS1011.00.025	1/8"	2.5	0	12	3.2	✓	✓	0.40
	SS1011.00.030	1/8"	3	0	12	4.6	✓	✓	0.39
	SS1011.01.018	1/4"	1.8	0	12	1.6	✓	✓	0.39
	SS1011.01.025	1/4"	2.5	0	12	3.2	✓	✓	0.39
	SS1011.01.030	1/4"	3	0	12	4.6	✓	✓	0.39

STANDARDS

• Standard tube connection G (BSP) (ISO 228-1) and other tube connections (NPT (ANSI 120.3)) are available on request.

• TORK solenoid valves 97/23/EC are available for pressure equipment directive (PED) and 2006/95/EC low voltage directive (LVD).

Not: Please look catalogues for more details

Stainless Steel Solenoid Valve SS1011 Series (G3/8", G1/2", G3/4", G1", G1 1/4", G1 1/2", G2")

GENERAL FEATURES

- Wide pressure range, a flow rate and orifice options.
- Solenoid valves are used with the filter.
- Solenoid valves can be mounted in any position without affecting its operation.
- Coil to be used in a vertical position.
- Working Pressure: -10 °C / +80 °C

ELECTRICAL CHARACTERISTICS

Continuous Duty : ED %100
Coil Insulation Class : H (180°C)(IEC 85)
Coil Impregnation : Polyester Fiber Glass
Ambient Temperature : -10°C, +60°C
Protection Degree : IP65 (ISO 60529) On request; IP68
Electric Plug Connection : DIN 46340 3-Poles Connector (DIN 43650)
Connector Specification : ISO 4400 / EN 175301-803 Form A, Spade Plug (Cable Ø6-8 mm)
Electrical Safety : IEC 335
Standard Voltages : AC 12V 15VA, 24V 15VA, 48V 15VA, 110V 15VA, 230V 15VA, 230V 24VA, DC 12V 18W, 24V 18W, 48V 18W, 110V 18W

On request other voltages

Voltages Tolerance : AC -15%, +10% DC -5%, +10%
Frequency : 50 Hz (60 Hz...)

On request; Connector with LED, PWM Socket Specify coil voltage with order

MATERIALS IN CONTACT WITH FLUID

Body : Stainless Steel (AISI 316)
Internal Parts : Stainless Steel
Sealing : EPDM on request; VITON, NBR
Shading Ring : Copper (EN 12735-1)
Seats, Core Tube, Springs: Stainless Steel

OPTIONS

- Female connection: BSP; (On request NPT)
- On request Atex (explosion proof) coil.

TECHNICAL FEATURES

Max. Viscosity : 5°E (~37cSt or mm²/s)
Response Time : Opening time : 400-1600 ms
Closing Time : 1000-2000 ms

SEALS FEATURES

NBR : -10°C...+80°C
EPDM : -10°C...+130°C
VITON : -10°C...+160°C
PTFE : -10°C...+160°C
RUBY : -10°C...+160°C

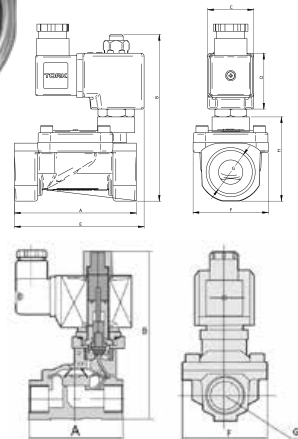
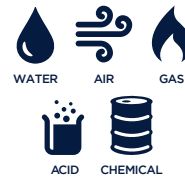


NORMALLY OPEN

2/2 WAY

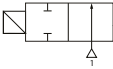
PILOT OPERATED

ΔP=0,5



Dimensions (mm)							
G	A	B	C	D	E	F	H
3/8"	79	102.75	32	39	87.5	52	45.25
1/2"	79	102.75	32	39	87.5	52	45.25
3/4"	90	116.3	32	39	90.5	53	59
1"	90	116.3	32	39	90.5	53	59
1 1/4"	131	158	-	-	-	96	-
1 1/2"	131	158	-	-	-	96	-
2	165	179	-	-	-	120	-

Coils	Nominal Values	Cold/Hot	Inrush	Holding	Current (A)	Surface Temperature (°C)
C40012VDC18W	12VDC 18W	COLD	19.56	19.56	1.63	20
		HOT	14.52	14.52	1.21	106
C40024VDC18W	24VDC 18W	COLD	20.88	20.88	0.87	25
		HOT	14.64	14.64	0.61	116
C40110VDC18W	110VDC 18W	COLD	19.96	19.96	0.18	23
		HOT	13.56	13.56	0.123	115
C40012VAC15VA	12VAC 15VA	COLD	23.81	16.43	1.3	25
		HOT	-	15.86	1.262	79
C40024VAC15VA	24VAC 15VA	COLD	25.82	15.02	0.62	22
		HOT	-	13.91	0.57	81
C40110VAC15VA	110VAC 15VA	COLD	30.65	15.17	0.137	24
		HOT	-	13.96	0.126	80
C40230VAC15VA	230VAC 15VA	COLD	31.4	15.64	0.068	25
		HOT	-	14.41	0.063	80
C40230VAC15VA	230VAC 24VA	COLD	45.1	23.92	0.0154	23
		HOT	-	21.62	0.0154	100

Solenoid Valve Symbol	Valve Type/Order No	Connection Size	Orifice Size	Pressure min/max	Kv	Seal	Weight
	SS1011	G	mm	Bar	Bar	l/min	
	SS1011.02	3/8"	12.5	0.5	12	48	0.96
	SS1011.03	1/2"	12.5	0.5	12	48	0.93
	SS1011.04	3/4"	17	0.5	12	90	1.15
	SS1011.05	1"	17	0.5	12	90	1.10
	SS1011.06	1 1/4"	35	0.5	8	315	3.55
	SS1011.07	1 1/2"	40	0.5	8	430	3.45
	SS1011.08	2"	50	0.5	8	690	3.88

STANDARDS

• Standard tube connection G (BSP) (ISO 228-1) and other tube connections (NPT (ANSI 120.3)) are available on request.

• TORK solenoid valves 97/23/EC are available for pressure equipment directive (PED) and 2006/95/ECC low voltage directive (LVD).

Stainless Steel Solenoid Valve SS1011 Series (G1/8" , G1/4")

GENERAL FEATURES

- Wide pressure range, a flow rate and orifice options.
- Solenoid valves are used with the filter.
- Solenoid valves can be mounted in any position without affecting its operation.
- Coil to be used in a vertical position.
- Working Pressure: -10 °C / +160 °C
- No pressure difference is required.

ELECTRICAL CHARACTERISTICS

Continuous Duty	: ED %100
Coil Insulation Class	: H (180°C)(IEC 85)
Coil Impregnation	: Polyester Fiber Glass
Ambient Temperature	: -10°C, +60°C
Protection Degree	: IP65 (ISO 60529) On request; IP68
Electric Plug Connection	: DIN 46340 3-Poles Connector (DIN 43650)
Connector Specification	: ISO 4400 / EN 175301-803 Form A, Spade Plug (Cable Ø6-8 mm)
Electrical Safety	: IEC 335
Standard Voltages	: AC 12V 15VA, 24V 15VA, 48V 15VA, 110V 15VA, 230V 15VA, 230V 24VA, DC 12V 18W, 24V 18W, 48V 18W, 110V 18W

On request other voltages

Voltages Tolerance : AC -15%, +10% DC -5%, +10%

Frequency : 50 Hz (60 Hz...)

On request; Connector with LED, PWM Socket Specify coil voltage with order

MATERIALS IN CONTACT WITH FLUID

Body	: Stainless Steel (AISI 316)
Internal Parts	: Stainless Steel
Sealing	: VITON, On request; NBR, EPDM
Shading Ring	: Copper (EN 12735-1)
Seats, Core Tube, Springs	: Stainless Steel

OPTIONS

Female connection: BSP; On request NPT

On request Atex (exproof) coil

TECHNICAL FEATURES

Max. Viscosity : 5°E (~37cST or mm²/s)

Response Time : Opening time : 30 ms
Closing Time : 30 ms

SEALS FEATURES

NBR : -10°C...+80°C

EPDM : -10°C...+130°C

VITON : -10°C...+160°C

PTFE : -10°C...+160°C

RUBY : -10°C...+160°C

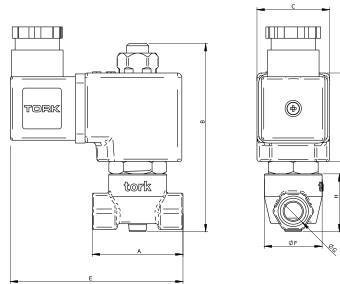
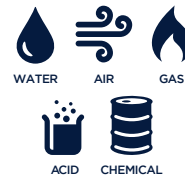


NORMALLY OPEN

2/2 WAY

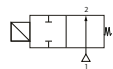
DIRECT ACTING

ΔP=0



Dimensions (mm)							
G	A	B	C	D	E	F	H
1/8"	40	83	32	39	76.2	25.5	25.5
1/4"	40	83	32	39	76.2	25.5	25.5

Coils	Nominal Values	Cold/Hot	Inrush	Holding	Current (A)	Surface Temperature (°C)
C40012VDC18W	12VDC 18W	COLD	19,56	19,56	1,63	20
		HOT	14,52	14,52	1,21	106
C40024VDC18W	24VDC 18W	COLD	20,88	20,88	0,87	25
		HOT	14,64	14,64	0,61	116
C40110VDC18W	110VDC 18W	COLD	19,96	19,96	0,18	23
		HOT	13,56	13,56	0,123	115
C40012VAC15VA	12VAC 15VA	COLD	23,81	16,43	1,3	25
		HOT	-	15,86	1,262	79
C40024VAC15VA	24VAC 15VA	COLD	25,82	15,02	0,62	22
		HOT	-	13,91	0,57	81
C40110VAC15VA	110VAC 15VA	COLD	30,65	15,17	0,137	24
		HOT	-	13,96	0,126	80
C40230VAC15VA	230VAC 15VA	COLD	31,4	15,64	0,068	25
		HOT	-	14,41	0,063	80
C40230VAC15VA	230VAC 24VA	COLD	45,1	23,92	0,0154	23
		HOT	-	21,62	0,0154	100

Solenoid Valve Symbol	Valve Type/Order No	Connection Size	Orifice Size	Pressure min/max	Kv	Seal			Weight
						VITON	NBR	EPDM	
	SS1011	G	mm	Bar	Bar	l/min			kg
	SS1011.00.018	1/8"	1,8	0	12	1,6	✓	✓	0,40
	SS1011.00.025	1/8"	2,5	0	12	3,2	✓	✓	0,40
	SS1011.00.030	1/8"	3	0	12	4,6	✓	✓	0,39
	SS1011.01.018	1/4"	1,8	0	12	1,6	✓	✓	0,39
	SS1011.01.025	1/4"	2,5	0	12	3,2	✓	✓	0,39
	SS1011.01.030	1/4"	3	0	12	4,6	✓	✓	0,39

STANDARDS

• Standard tube connection G (BSP) (ISO 228-1) and other tube connections (NPT (ANSI 120.3)) are available on request.

• TORK solenoid valves 97/23/EC are available for pressure equipment directive (PED) and 2006/95/EC low voltage directive (LVD).

Not: Please look catalogues for more details

Stainless Steel Solenoid Valve SS1011 Series (G3/8", G1/2", G3/4", G1", G1 1/4", G1 1/2", G2")

GENERAL FEATURES

- Wide pressure range, a flow rate and orifice options.
- Solenoid valves are used with the filter.
- Solenoid valves can be mounted in any position without affecting its operation.
- Coil to be used in a vertical position.
- Working Pressure: -10 °C / +80 °C

ELECTRICAL CHARACTERISTICS

Continuous Duty : ED %100
Coil Insulation Class : H (180°C)(IEC 85)
Coil Impregnation : Polyester Fiber Glass
Ambient Temperature : -10°C, +60°C
Protection Degree : IP65 (ISO 60529) On request; IP68
Electric Plug Connection : DIN 46340 3-Poles Connector (DIN 43650)
Connector Specification : ISO 4400 / EN 175301-803 Form A, Spade Plug (Cable Ø6-8 mm)
Electrical Safety : IEC 335
Standard Voltages : AC 12V 15VA, 24V 15VA, 48V 15VA, 110V 15VA, 230V 15VA, 230V 24VA, DC 12V 18W, 24V 18W, 48V 18W, 110V 18W

On request other voltages

Voltages Tolerance : AC -15%, +10% DC -5%, +10%
Frequency : 50 Hz (60 Hz...)

On request; Connector with LED, PWM Socket Specify coil voltage with order

MATERIALS IN CONTACT WITH FLUID

Body : Stainless Steel (AISI 316)
Internal Parts : Stainless Steel
Sealing : EPDM on request; VITON, NBR
Shading Ring : Copper (EN 12735-1)
Seats, Core Tube, Springs: Stainless Steel

OPTIONS

- Female connection: BSP; (On request NPT)
- On request Atex (explosion proof) coil.

TECHNICAL FEATURES

Max. Viscosity : 5°E (~37cSt or mm²/s)
Response Time : Opening time : 400-1600 ms
Closing Time : 1000-2000 ms

SEALS FEATURES

NBR : -10°C...+80°C
EPDM : -10°C...+130°C
VITON : -10°C...+160°C
PTFE : -10°C...+160°C
RUBY : -10°C...+160°C

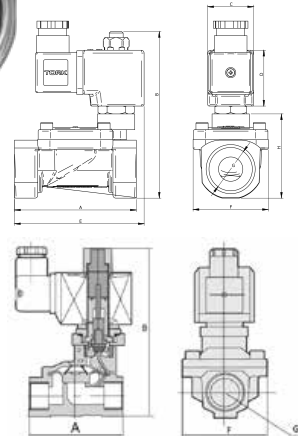
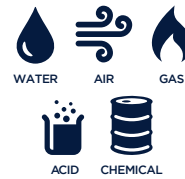


NORMALLY OPEN

2/2 WAY

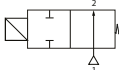
PILOT OPERATED

ΔP=0,5



Dimensions (mm)							
G	A	B	C	D	E	F	H
3/8"	79	102.75	32	39	87.5	52	45.25
1/2"	79	102.75	32	39	87.5	52	45.25
3/4"	90	116.3	32	39	90.5	53	59
1"	90	116.3	32	39	90.5	53	59
1 1/4"	131	158	-	-	-	96	-
1 1/2"	131	158	-	-	-	96	-
2	165	179	-	-	-	120	-

Coils	Nominal Values	Cold/Hot	Inrush	Holding	Current (A)	Surface Temperature (°C)
C40012VDC18W	12VDC 18W	COLD	19.56	19.56	1.63	20
		HOT	14.52	14.52	1.21	106
C40024VDC18W	24VDC 18W	COLD	20.88	20.88	0.87	25
		HOT	14.64	14.64	0.61	116
C40110VDC18W	110VDC 18W	COLD	19.96	19.96	0.18	23
		HOT	13.56	13.56	0.123	115
C40012VAC15VA	12VAC 15VA	COLD	23.81	16.43	1.3	25
		HOT	-	15.86	1.262	79
C40024VAC15VA	24VAC 15VA	COLD	25.82	15.02	0.62	22
		HOT	-	13.91	0.57	81
C40110VAC15VA	110VAC 15VA	COLD	30.65	15.17	0.137	24
		HOT	-	13.96	0.126	80
C40230VAC15VA	230VAC 15VA	COLD	31.4	15.64	0.068	25
		HOT	-	14.41	0.063	80
C40230VAC15VA	230VAC 24VA	COLD	45.1	23.92	0.0154	23
		HOT	-	21.62	0.0154	100

Solenoid Valve Symbol	Valve Type/Order No	Connection Size	Orifice Size	Pressure min/max	Kv	Seal	Weight
	SS1011	G	mm	Bar	Bar	l/min	kg
	SS1011.02	3/8"	12.5	0.5	12	48	0.96
	SS1011.03	1/2"	12.5	0.5	12	48	0.93
	SS1011.04	3/4"	17	0.5	12	90	1.15
	SS1011.05	1"	17	0.5	12	90	1.10
	SS1011.06	1 1/4"	35	0.5	8	315	3.55
	SS1011.07	1 1/2"	40	0.5	8	430	3.45
	SS1011.08	2"	50	0.5	8	690	3.88

STANDARDS

• Standard tube connection G (BSP) (ISO 228-1) and other tube connections (NPT (ANSI 120.3)) are available on request.

• TORK solenoid valves 97/23/EC are available for pressure equipment directive (PED) and 2006/95/ECC low voltage directive (LVD).

Stainless Flange Solenoid Valve SS1011-F Series (G11/4", G11/2", G2")

GENERAL FEATURES

- Wide pressure range, a flow rate and orifice options.
- Solenoid valves are used with the filter.
- Solenoid valves can be mounted in any position without affecting its operation.
- Coil to be used in a vertical position.
- Working Pressure: -10 °C / +80 °C
- No pressure difference is required.

ELECTRICAL CHARACTERISTICS

Continuous Duty	: ED %100
Coil Insulation Class	: H (180°C)(IEC 85)
Coil Impregnation	: Polyester Fiber Glass
Ambient Temperature	: -10°C, +60°C
Protection Degree	: IP65 (ISO 60529) On request; IP68
Electric Plug Connection	: DIN 46340 3-Poles Connector (DIN 43650)
Connector Specification	: ISO 4400 / EN 175301-803 Form A, Spade Plug (Cable Ø6-8 mm)
Electrical Safety	: IEC 335
Standard Voltages	: AC 12V 15VA, 24V 15VA, 48V 15VA, 110V 15VA, 230V 15VA, 230V 24VA, DC 12V 18W, 24V 18W, 48V 18W, 110V 18W

On request other voltages

Voltages Tolerance : AC -15%, +10% DC -5%, +10%

Frequency : 50 Hz (60 Hz...)

On request; Connector with LED, PWM Socket Specify coil voltage with order

MATERIALS IN CONTACT WITH FLUID

Body	: Stainless Steel (AISI 316)
Internal Parts	: Stainless Steel
Sealing	: EPDM on request; VITON, NBR
Shading Ring	: Copper (EN 12735-1)
Seats, Core Tube, Springs	: Stainless Steel

OPTIONS

- On request Atex (explosion proof) coil.

TECHNICAL FEATURES

Max. Viscosity	: 5°E (-37cST or mm²/s)
Response Time	: Opening time : 400 ms - 1600 ms Closing Time : 1000 ms - 2000 ms

SEALS FEATURES

NBR	: -10°C...+80°C
EPDM	: -10°C...+130°C
VITON	: -10°C...+160°C
PTFE	: -10°C...+160°C
RUBY	: -10°C...+160°C

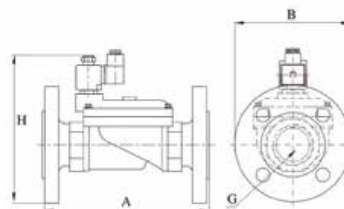
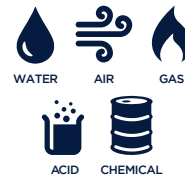


NORMALLY OPEN

2/2 WAY

PILOT OPERATED

ΔP=0,5



Dimensions (mm)

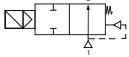
G	A	B	H
1/4"	160	135	175
1/2"	160	145	180
2"	200	160	207

Coils	Nominal Values	Cold/ Hot	Inrush	Holding	Current (A)	Surface Temperature (°C)
C40012VDC18W	12VDC 18W	COLD	19,56	19,56	1,63	20
		HOT	14,52	14,52	1,21	106
C40024VDC18W	24VDC 18W	COLD	20,88	20,88	0,87	25
		HOT	14,64	14,64	0,61	116
C40110VDC18W	110VDC 18W	COLD	19,96	19,96	0,18	23
		HOT	13,56	13,56	0,123	115
C40012VAC15VA	12VAC 15VA	COLD	23,81	16,43	1,3	25
		HOT	-	15,86	1,262	79
C40024VAC15VA	24VAC 15VA	COLD	25,82	15,02	0,62	22
		HOT	-	13,91	0,57	81
C40110VAC15VA	110VAC 15VA	COLD	30,65	15,17	0,137	24
		HOT	-	13,96	0,126	80
C40230VAC15VA	230VAC 15VA	COLD	31,4	15,64	0,068	25
		HOT	-	14,41	0,063	80
C40230VAC15VA	230VAC 24VA	COLD	45,1	23,92	0,0154	23
		HOT	-	21,62	0,0154	100

STANDARDS

• Standard tube connection G (BSP) (ISO 228-1) and other tube connections (NPT (ANSI 120.3)) are available on request.

• TORK solenoid valves 97/23/EC are available for pressure equipment directive (PED) and 2006/95/EC low voltage directive (LVD).

Solenoid Valve Symbol	Valve Type/ Order No	Connection Size	Orifice Size	Pressure min/max	Kv	Seal	Weight
	SS1011-F	DN	mm	Bar	Bar	l/min	kg
	SS1011-F.06	32	35	0,5	12	315	7,5
	SS1011-F.07	40	40	0,5	12	430	8
	SS1011-F.08	50	50	0,5	12	690	9,5

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