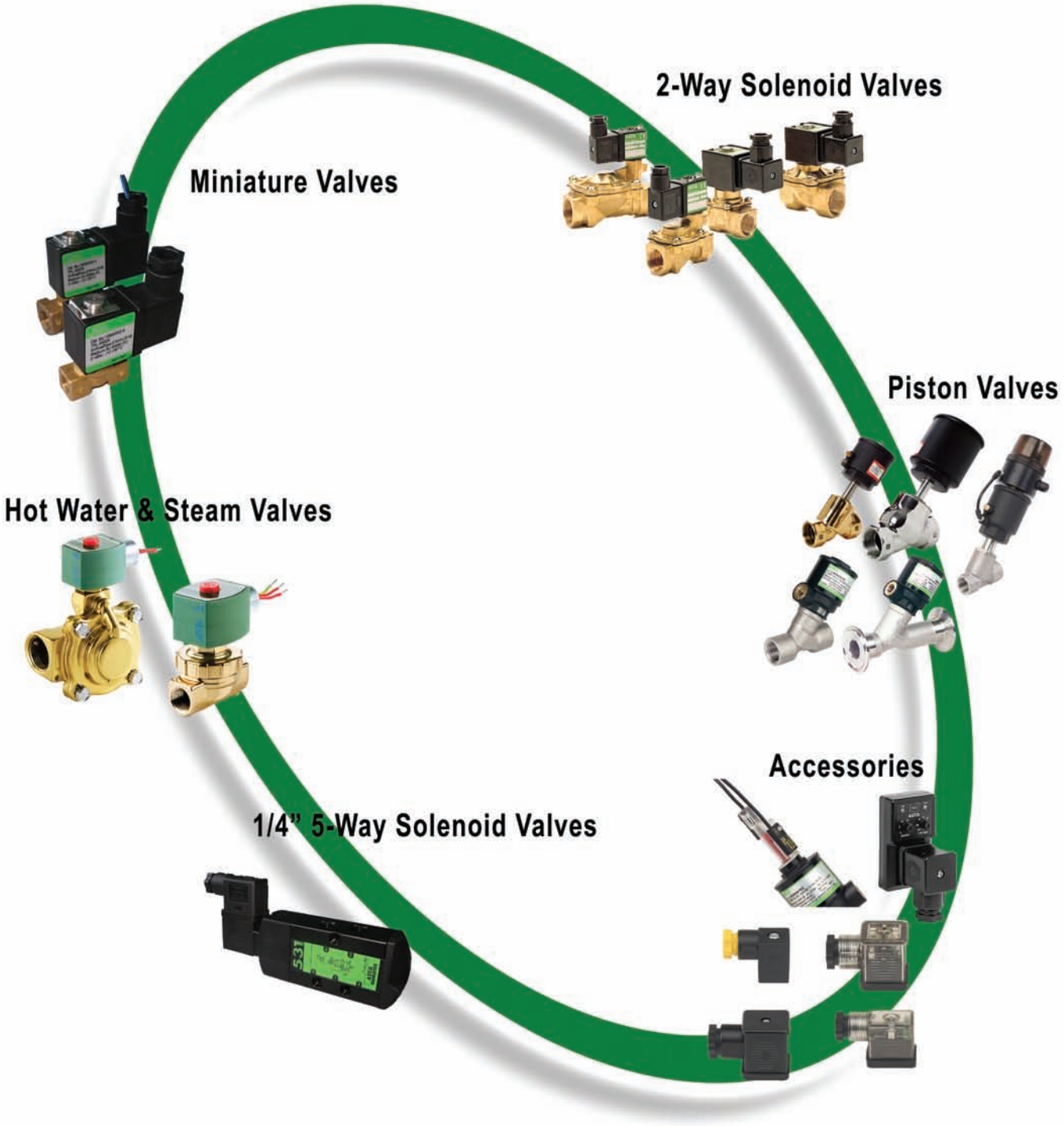
ASCO® Valve



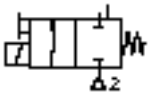
Valves for the control of air, water and steam

www.asconumatics.net

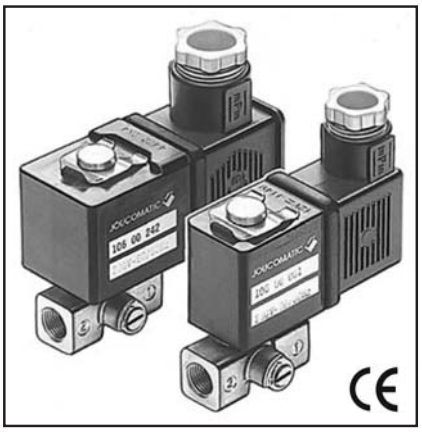
Contents

SOLENOID VALVES

normally closed
direct operated
1/8"

NC 

2/2
Series
106



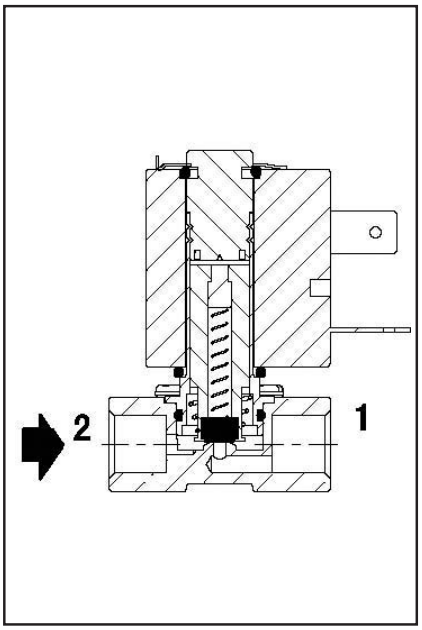
FEATURES

- *Solenoid valves satisfy all relevant EC directives*
- *Compact design and low weight for easy installation*
- *Manual operator as standard*
- *Interchangeability of magnetic heads, AC and DC and for potentially explosive atmospheres to EEx m (encapsulation)*
- *Removable core tube assembly for easy maintenance and cost saving*

GENERAL

Differential pressure	See "SPECIFICATIONS" [1 bar = 100 kPa]
Maximum viscosity	40 cSt (mm^2/s)
Response time	5 - 10 ms (with air △P = 6 bar)

Fluids (*)	Temperature Ranges*(TS)	Sealings (*)
air, inert gas, water & oil	- 10°C to +80°C	NBR (nitrile / buna-n)



MATERIALS IN CONTACT WITH FLUID

(*) Ensure that the compatibility of the fluids in contact with the materials is verified

Body	Brass
Core tube	Brass
Internal parts	Stainless Steel
Spring	Stainless Steel
Seat	Brass
Sealings	NBR
Shading coil	Copper

ELECTRICAL CHARACTERISTICS

Coil insulation class	F
Connector	Spade plug
Connector specification	3 x DIN 43650
Electrical safety	IEC 335
Standard voltages	DC (=) : 24V
	AC (~) : 24V - 230V / 50 - 60 Hz

Coil Type	Nominal Power Ratings				Ambient Temperature Range (TS)	Protection
	Inrush AC	Holding AC		Hot / Cold DC		
	(VA)	(VA)	(W)	(W)	(°C)	
C22A	12	6	4	4.5 / 5.5	-10 to +60	moulded IP65

SPECIFICATIONS

Pipe Size	Orifice Size	Flow Coefficient Kv		Operating Pressure Differential (bar)					Coil Type	(M)	Catalog Number (AC / DC)
				Min.	Maximum (PS)						
					Air (*)		Water, Oil (*)				
G	(mm)	(m^3/h)	(l/min)		AC	DC	AC	DC	AC / DC		Sealings (NBR)
1/8	1.0	0.04	0.6	0	20	20	20	20	C22A	●	106 00 001X 24029
	1.5	0.06	1.0	0	20	12	20	12	C22A	●	106 00 058X 24029
	2.5	0.10	1.7	0	10	4	10	4	C22A	●	106 00 003X 24029

(M) : Manual operator ●: screwdriver TPL 24029 : With removable core tube assembly

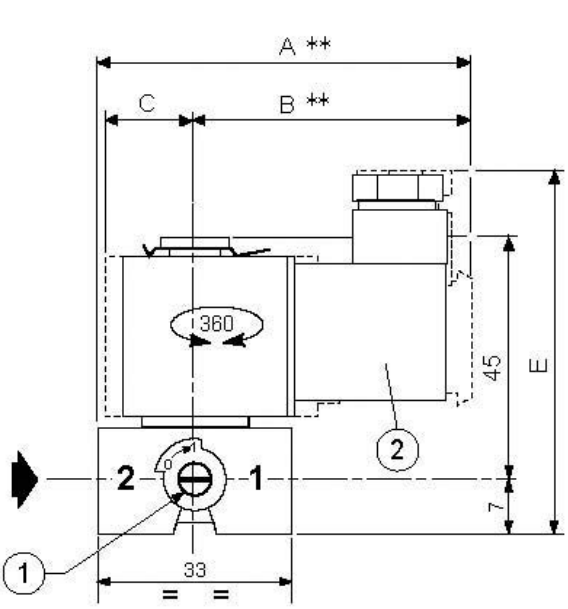
OPTIONS

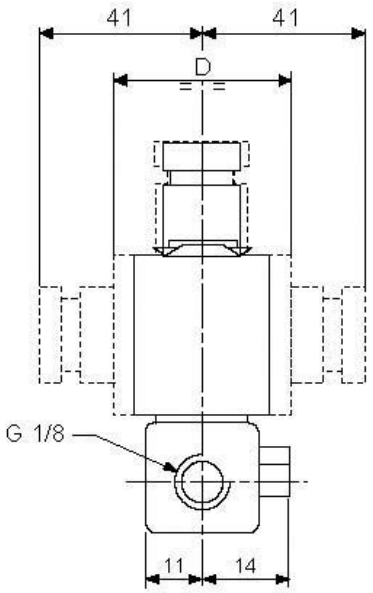
- Encapsulation, EEx **m** (coil C22A), for potentially explosive atmospheres according to "**ATEX**"
- Solenoid heads **"CSA"** approved (coil C22A)
- Compliance with **"UL"** standard (solenoid valves with coil C22A)
- Magnetic latch executions
- Oxygen service, catalog number **970 517**
- Connector with built-in indicator and electrical protection or prewired with cable length 2 m
- H Class coil available

INSTALLATION

- The solenoid valves can be mounted in any position
- Mounting bracket are available, catalog number **976 00 327**
- Pipe connections have standard thread according to ISO 228/1
- Other pipe threads are available on request
- Installation/maintenance instructions are included with each solenoid valve
- Replacement coils are available

DIMENSIONS (mm), WEIGHT (kg)





Coil Type	A	B	C	D	E	Weight (1)
C22A	66	49	11	22	68	0.14

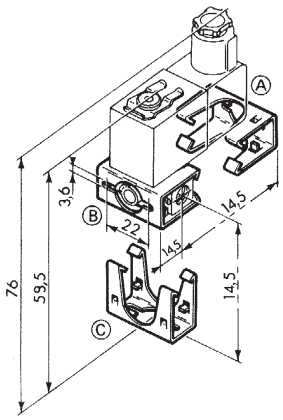
(1) including coil and connector

① Manual operator
② Plug connectors:
size 22 rotatable by 180°, Pg 9P

** + 15 mm for plug removal.

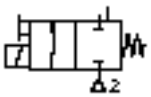
SOLENOID VALVE WITH MOUNTING BRACKET

Catalog number mounting bracket: **976 00 327**

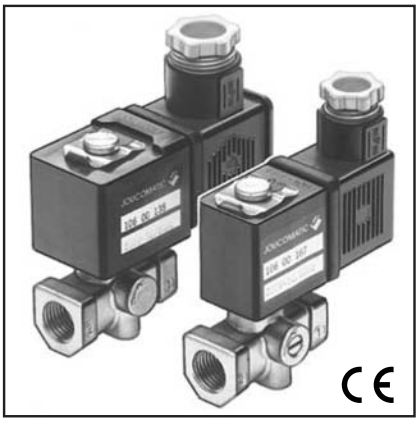


Ⓐ Side mounting at rear.
Ⓑ Side mounting at front.
Ⓒ Bottom mounting.

SOLENOID VALVES
normally closed
direct operated
1/4"

NC 

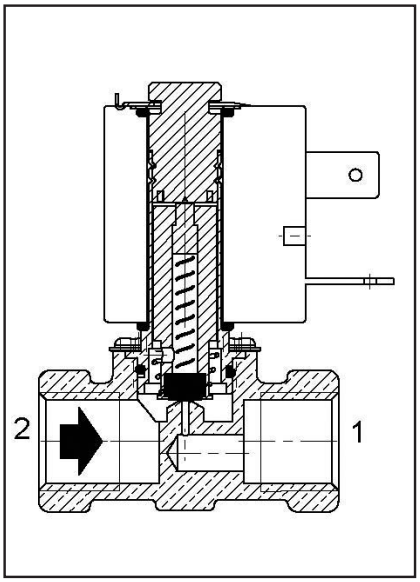
2/2
Series
106



FEATURES
- *Solenoid valves satisfy all relevant EC directives*
- *Compact design and low weight for easy installation*
- *Interchangeability of magnetic heads, AC and DC and for potentially explosive atmospheres to EEx m (encapsulation)*
- *Removable core tube assembly for easy maintenance and cost saving*

GENERAL
Differential pressure See "SPECIFICATIONS" [1 bar =100 kPa]
Maximum viscosity 40 cSt (mm^2/s)
Response time 5 - 10 ms (with air △P = 6 bar)

Fluids (*)	Temperature Ranges (TS)	Sealings (*)
air, inert gas, water & oil	- 10°C to + 80°C	NBR (nitrile / buna-n)



MATERIALS IN CONTACT WITH FLUID
(*) Ensure that the compatibility of the fluids in contact with the materials is verified
Body Brass
Core tube Brass
Internal parts Stainless Steel
Spring Stainless Steel
Seat Brass
Sealings NBR
Shading coil Copper

ELECTRICAL CHARACTERISTICS
Coil insulation class F
Connector Spade plug
Connector specification
for coil C22A 3 x DIN 43650
for coil C25A ISO 4400
Electrical safety
for coil C22A IEC 335
for coil C25A VDE 0580
Standard voltages DC (=) : 24V
AC (~) : 24V - 230V / 50 - 60 Hz

Coil Type	Nominal Power Ratings				Ambient Temperature Range (TS) (°C)	Protection
	Inrush AC	Holding AC		Hot / Cold DC		
	(VA)	(VA)	(W)	(W)		
C22A	12	6	4	4.5 / 5.5	-10 to +60	moulded IP65
C25A	10.4	6	3.5	5 / 7		

SPECIFICATIONS

Pipe Size	Orifice Size	Flow Coefficient Kv		Operating Pressure Differential (bar)					Coil Type	(M)	Catalog Number (AC / DC)
				Min.	Maximum (PS)						
					Air (*)		Water, Oil (*)				
(G*)	(mm)	(m^3/h)	(l/min)		AC	DC	AC	DC	AC / DC		Sealings (NBR)
1/4	1.5	0.07	1.12	0	20	12	20	12	C22A	●	106 00 187X 24029
					20	15	20	15	C25A	●	106 00 257X 24029
	2.5	0.17	2.85	0	10	4	10	4	C22A	●	106 00 189X 24029
					14	7	14	7	C25A	●	106 00 258X 24029

(M) : Manual operator ● : screwdriver TPL 24029 : With removable core tube assembly

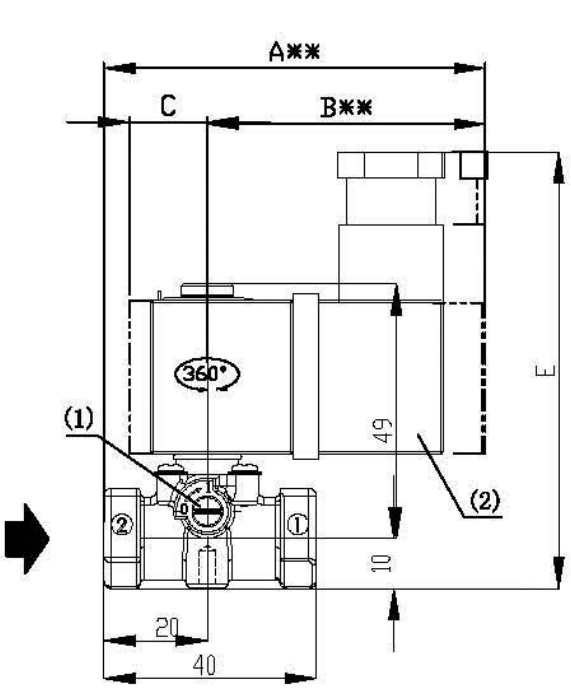
OPTIONS

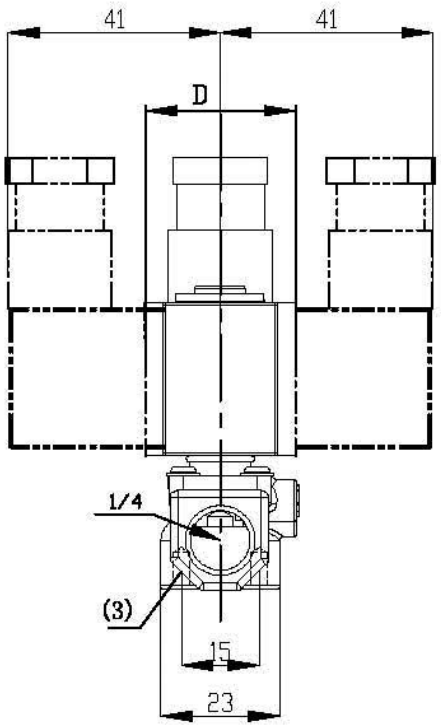
- Encapsulation, EEx **m** (coils C22A), for potentially explosive atmospheres according to "**ATEX**"
- Solenoid heads **"CSA"** approved (coil C22A - 4W)
- Oxygen service, catalog number **970 517**
- Connector with built-in indicator and electrical protection or prewired with cable length 2 m
- H Class coil available

INSTALLATION

- The solenoid valves can be mounted in any position
- These valves have 2 mounting holes in the body
- Pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1
- Other pipe threads are available on request
- Installation/maintenance instructions are included with each solenoid valve
- Replacement coils are available

DIMENSIONS (mm), WEIGHT (kg)





Coil Type	A	B	C	D	E	Weight (1)
C22A	68	49	11	22	78	0.17
C25A	76	56	15	30	82	0.23

(1) including coil and connector

① Manual operator (except dia. 4 and 5)

② Plug connectors:
- for coil C22A: rotatable by 180°, Pg 9P
- for coil C25A: rotatable by 90°, Pg 11P

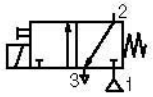
③ Mounting: two M4, depth 5 holes

** + 15 mm for plug removal.

SOLENOID VALVES

normally closed
direct operated
1/8"

NC



3/2
Series
107

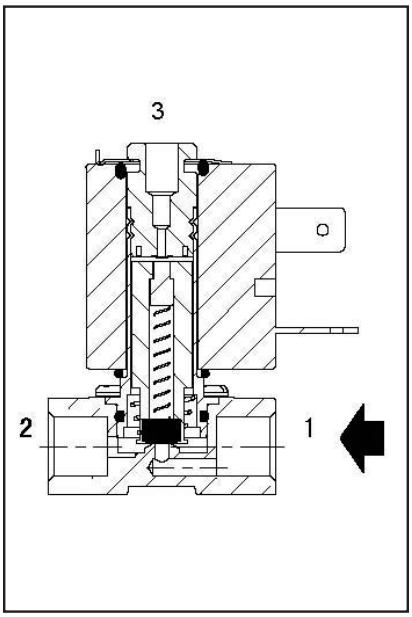
FEATURES

- *Solenoid valves satisfy all relevant EC directives*
- *Compact design and low weight for easy installation*
- *Standard manual operator*
- *Interchangeable solenoid heads, AC / DC and for potentialy explosive atmospheres*
- *Removable core tube assembly for easy maintenance and cost saving*

GENERAL

Differential pressure	0 to 15 bar [1 bar = 100 kPa]
Ambient temperature range	-10°C to +60°C
Maximum viscosity	40 cSt (mm^2/s)
Response time	5 - 10 ms (with air △P = 6 bar)

Fluids (*)	Temperature Ranges (TS)	Sealings (*)
water, air, inert gas & oil	- 10°C to + 80°C	NBR (nitrile / buna-n)



MATERIALS IN CONTACT WITH FLUID

(*) Ensure that the compatibility of the fluids in contact with the materials is verified

Body	Brass
Core tube	Brass
Internal parts	Stainless Steel
Spring	Stainless Steel
Seat	Brass
Sealings	NBR
Shading coil	Copper

ELECTRICAL CHARACTERISTICS

Coil insulation class	F
Spade plug connection coil	3 x DIN 43650
Connector	Spade plug
Electrical safety	IEC 335
Standard voltages	DC (=) : 24V
	AC (~) : 24V - 230V / 50 - 60 Hz

Coil Type	Nominal Power Ratings				Ambient Temperature Range (TS) (°C)	Protection
	Inrush AC	Holding AC		Hot / Cold DC		
	(VA)	(VA)	(W)	(W)		
C22A	12	6	4	4.5 / 5.5	-10 to +60	moulded IP65

SPECIFICATIONS

Pipe Size	Orifice Size		Flow Coefficient Kv				Operating Pressure Differential (bar)					Coil Type	(M)	Catalog Number (AC/ DC)	
							Min.	Maximum (PS)							
								Air (*)		Water, Oil (*)					
	1→2	2→3	1 → 2		2 → 3										
G	(mm)	(mm)	(m^3/h)	(l/min)	(m^3/h)	(l/min)		AC	DC	AC	DC	AC / DC		Sealings (NBR)	
1/8 (1)	1	1.2	0.030	0.5	0.06	1	0	15	15	15	15	C22A	●	107 00 001X	24029
	1.5	1.2	0.060	1.0	0.06	1	0	8	8	8	8	C22A	●	107 00 124X	24029
	2.5	1.2	0.108	1.8	0.06	1	0	3	3	3	3	C22A	●	107 00 003X	24029

(M) : Manual operator ● : screwdriver TPL 24029 : With removable core tube assembly

(1) Pipe size orifices 1 and 2 : G 1/8, orifice 3 : M5.

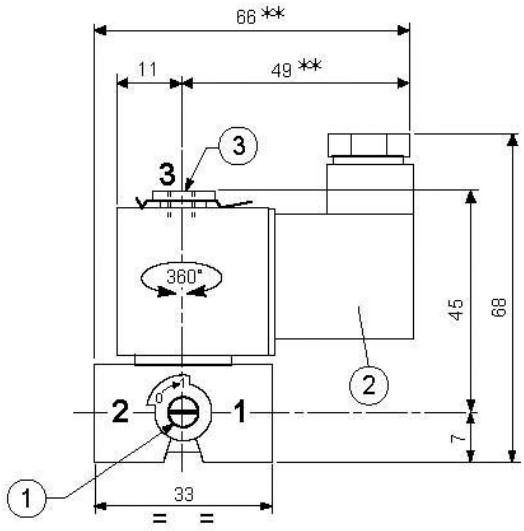
ACCESSORIES AND OPTIONS

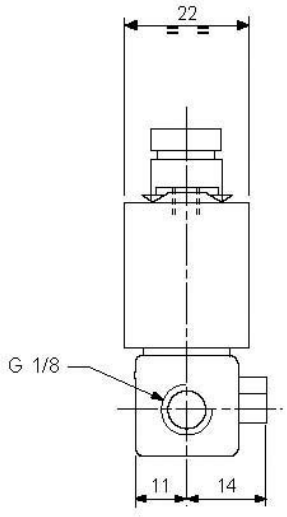
- Encapsulation, EEx **m** (coils C22A), for potentially explosive atmospheres according to "**ATEX**"
- Solenoid heads **"CSA"** approved
- Compliance with **"UL"** standard
- Magnetic latch executions
- Oxygen service, catalog number **970 517**
- Connector with built-in indicator and electrical protection or prewired with cable length 2 m
- Exhaust port regulator M5 adaptable on port 3, catalog number **346 00 380**
- H Class coil available

INSTALLATION

- The solenoid valves can be mounted in any position
- Mounting bracket are available, catalog number **976 00 327**
- Pipe connections G 1/8 have standard thread accoding to ISO 228/1
- Other pipe threads are available on request
- Installation/maintenance instructions are included with each solenoid valve
- Replacement coils are available

DIMENSIONS (mm), WEIGHT (kg)





Inlet pressure :
- NC operation = port 1

Coil Type	Weight (1)
C22A	0.138

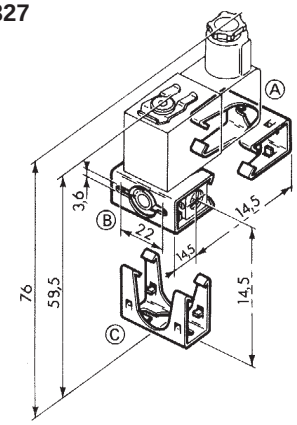
(1) including coil and connector

① Manual operator
② Plug connectors:
size 22 rotable by 180°, Pg 9P
③ Port 3 fitting M5, depth 5.5

** + 15mm for plug removal

SOLENOID VALVE WITH MOUNTING BRACKET

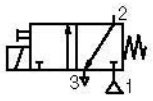
Mounting bracket catalog number: **976 00 327**



Ⓐ Side mounting at rear
Ⓑ Side mounting at front
Ⓒ Bottom mounting

SOLENOID VALVES

normally closed
direct operated
1/4"

NC 

3/2
Series
107

FEATURES

- *Solenoid valves satisfy all relevant EC directives*
- *Compact design and low weight for easy installation*
- *Manual operator as standard*
- *Interchangeability of magnetic heads, AC and DC*
- *Removable core tube assembly for easy maintenance and cost saving*

GENERAL

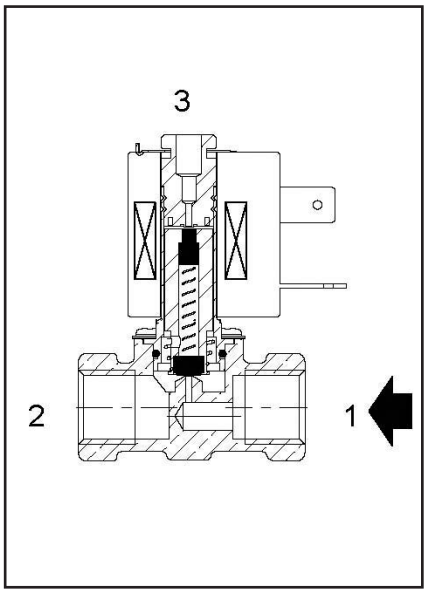
Differential pressure	See " SPECIFICATIONS" [1 bar =100 kPa]
Ambient temperature range	- 10°C to +60°C
Maximum viscosity	40 cSt (mm^2/s)
Response time	5 - 10 ms (with air △P = 6 bar)

Fluids (*)	Temperature Ranges (TS)	Sealings (*)
water, air, inert gas & oil	- 10°C to + 80°C	NBR (nitrile / buna-n)

MATERIALS IN CONTACT WITH FLUID

(*) Ensure that the compatibility of the fluids in contact with the materials is verified

Body	Brass
Core tube	Brass
Internal parts	Stainless Steel
Spring	Stainless Steel
Sealings	NBR
Shading coil	Copper



ELECTRICAL CHARACTERISTICS

Coil insulation class	F
Connector	Spade plug
Connector specification	ISO 4400
Electrical safety	VDE 0580
Standard voltages	DC (=) : 24V AC (~) : 24V - 115V - 230V / 50 - 60 Hz

Coil Type	Nominal Power Ratings				Ambient Temperature Range (TS) (°C)	Protection
	Inrush AC	Holding AC		Hot / Cold AC		
	(VA)	(VA)	(W)	(W)		
C25A	10.4	6	3.5	5 / 7	-10 to +60	moulded IP65

SPECIFICATIONS

Pipe Size	Orifice Size		Flow Coefficient Kv				Operating Pressure Differential (bar)					Coil Type	(M)	Catalog Number (AC / DC)
							Min.	Maximum (PS)						
								Air (*)		Water, Oil (*)				
	1→2	2→3	1 → 2		2 → 3									
G	(mm)	(mm)	(m^3/h)	(l/min)	(m^3/h)	(l/min)		AC	DC	AC	DC	AC / DC		Sealings (NBR)
1/4 (1)	1.5	1.5	0.060	1.0	0.075	1.25	0	12	12	12	12	C25A	●	107 00 207X 24029
	2.5	1.5	0.144	2.4	0.075	1.25	0	5	5	5	5	C25A	●	107 00 208X 24029

(M) : Manual operator ● : screwdriver TPL 24029 : With removable core tube assembly

(1) Pipe size orifices 1 and 2 : G 1/8, orifice 3 : M5.

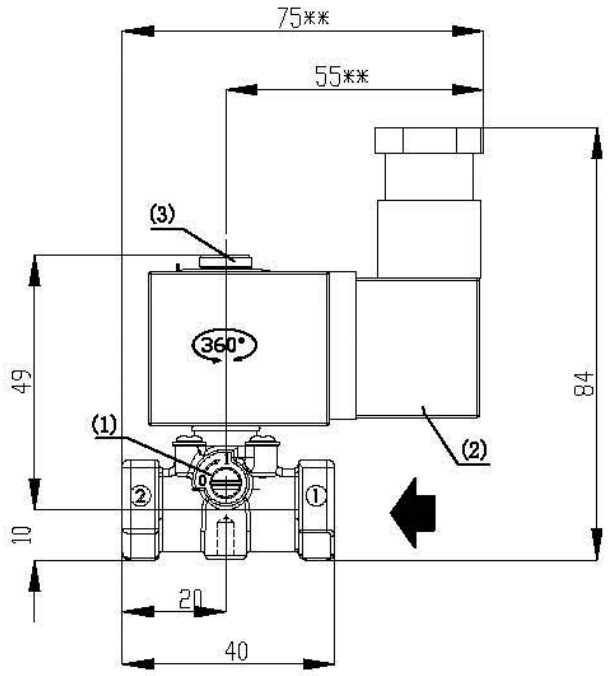
OPTIONS

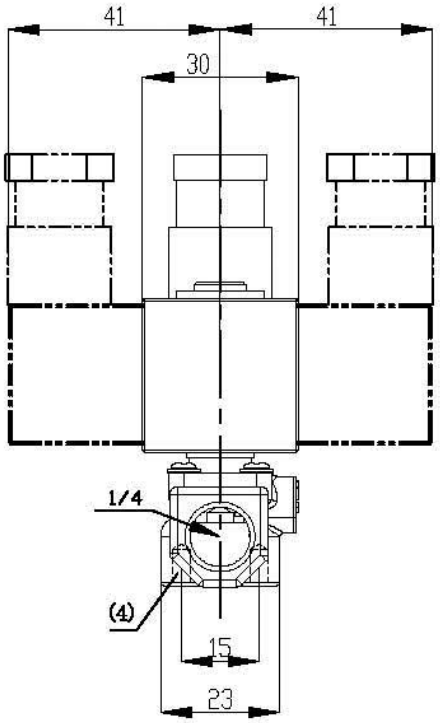
- Oxygen service, catalog number **970 517**
- Connector with built-in indicator and electrical protection or prewired with cable length 2 m
- Exhaust port regulator M5 adaptable on port 3, catalog number **346 00 380**
- H Class coil available

INSTALLATION

- The solenoid valves can be mounted in any position
- These valves have 2 mounting holes in the body
- Pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1
- Other pipe threads are available on request
- Installation/maintenance instructions are included with each solenoid valve
- Replacement coils are available

DIMENSIONS (mm), WEIGHT (kg)





Coil Type	Weight (1)
C25A	0.226

(1) including coil and connector

① Manual operator (except dia. 4 and 5)
② Plug connectors:
size 30 rotatable by 90°, Pg 11P

③ Port 3: fitting M5, depth 5.5

④ Mounting: two M4, depth 5 holes

** + 15 mm for plug removal.

SOLENOID VALVES
direct operated
multiple manifold sub-bases
1/8"

3/2
Series
HV293734

NC

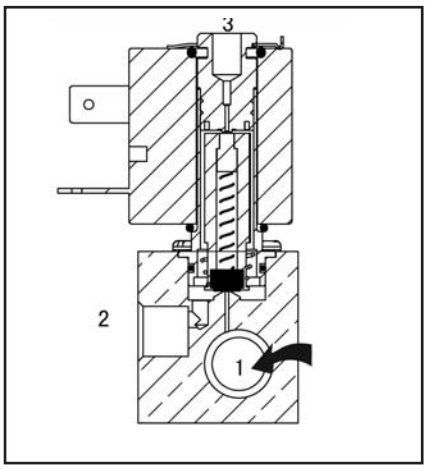
FEATURES
- *Very small size and easy assembly*
- *Mixing or distributing function*
- *AC/DC interchangeability of the solenoid without disassembling the valve*
- *Quick disassembly of core tube for easy maintenance of internal parts*
- *Compliance with UL and CSA standards*
- *The solenoid valves satisfy all relevant EC Directives*

GENERAL
Differential pressure See "SPECIFICATIONS" [1 bar =100 kPa]
Maximum viscosity 40 cSt (mm^2/s)
Response time 5 - 10 ms

Fluids (*)	Temperature Ranges (TS)	Sealings (*)
water, air, inert gas & oil	-10°C to +80°C	NBR (nitrile / buna-n)
	-10°C to +130°C	FPM (fluoroelastomer / viton)

MATERIALS IN CONTACT WITH FLUID
(*) Ensure that the compatibility of the fluids in contact with the materials is verified

Manifold body Aluminum
Core tube Brass
Core and plugnut Stainless Steel
Springs Stainless Steel
Seals NBR or FPM
Disc NBR or FPM
Shading coil Copper



ELECTRICAL CHARACTERISTICS
Coil insulation class F
Connector Spade plug (cable Ø 6 - 7 mm)
Connector specifications DIN 43650, 11mm, industry standard B
Electrical safety IEC 335
Electrical enclosure protection Moulded IP65 (EN60529)
Standard voltages (1) DC (=) : 24V
AC (~) : 24V - 48V - 115V - 230V / 50 Hz

(Other voltages and 60Hz on request.)
(1) Duty cycle: 50% (30min).

SPECIFICATIONS

Pipe Size G	Orifice Size (mm)	Flow Coefficient Kv (m^3/h)	Flow Coefficient Kv (l/min)	Operating Pressure Differential (bar) Min.	Maximum (PS) Air, Water (*) AC	Maximum (PS) Air, Water (*) DC	Maximum (PS) Oil (*) AC	Maximum (PS) Oil (*) DC	Power Coil (W) AC	Power Coil (W) DC	Number Of Valves	Catalog Number AC / DC	Options EPDM	Options FPM
NC - Normally Closed														
1/8 (2)	1.5	0.06	1	0	8	8	8	8	C22A - 4W	C22A - 5.5W	2	**HV293734-2-2**	**E**	**V**
											3	**HV293734-2-3**	**E**	**V**
											4	**HV293734-2-4**	**E**	**V**
											5	**HV293734-2-5**	**E**	**V**
											6	**HV293734-2-6**	**E**	**V**
											7	**HV293734-2-7**	**E**	**V**
											8	**HV293734-2-8**	**E**	**V**
											9	**HV293734-2-9**	**E**	**V**
											10	**HV293734-2-10**	**E**	**V**
	2.4	0.13	2.16	0	4	4	4	4	C22A - 4W	C22A - 5.5W	2	**HV293734-4-2**	**E**	**V**
											3	**HV293734-4-3**	**E**	**V**
											4	**HV293734-4-4**	**E**	**V**
											5	**HV293734-4-5**	**E**	**V**
											6	**HV293734-4-6**	**E**	**V**
											7	**HV293734-4-7**	**E**	**V**
											8	**HV293734-4-8**	**E**	**V**
											9	**HV293734-4-9**	**E**	**V**
											10	**HV293734-4-10**	**E**	**V**

(2) Pipe size 3 : M5

OPTIONS

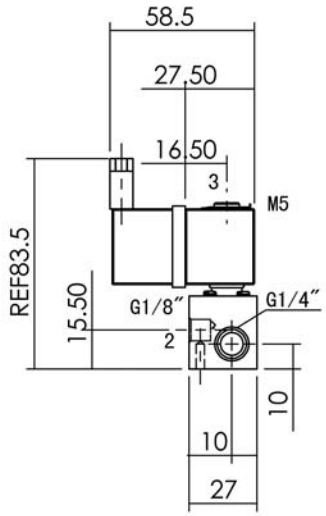
- Valves can also be supplied with EPDM (ethylene-propylene) seals and discs. Use the appropriate optional suffix letter for identification
- PTFE on request
- Flying leads coil, use prefix L
- Oxygen service with seals and disc in FPM, suffix NV
- Other pipe connections are available on request
- Plug with visual indication and peak voltage suppression or with cable length of 2m

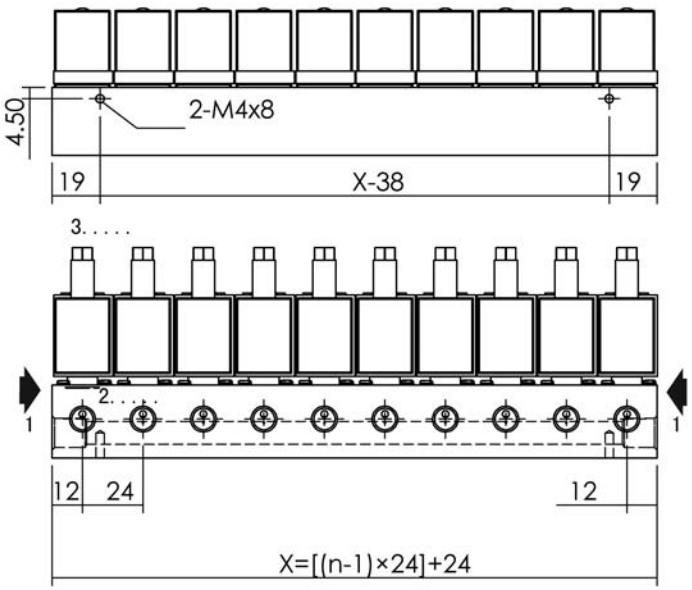
INSTALLATION

- The solenoid valves can be mounted in any position without affecting operation
- Multiple manifold solenoid valves have 2 mounting holes in body
- Pipe connection identifier is G = G (ISO 228/1)
- Installation/maintenance instructions are included with each valve manifold

DIMENSIONS (mm), WEIGHT (kg)

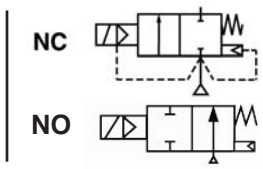
TYPE 01
Integrated in manifold
IEC 335 / DIN 43650
IP65





SOLENOID VALVES

built-in pilot, pilot operated
floating diaphragm
3/8" to 1"



2/2
Series
238

FEATURES

- *Solenoid valves satisfy all relevant EC directives*
- *Minimum operating pressure differential 0.3 / 0.35 bar*
- *Interchangeability of magnetic heads, AC and DC*

GENERAL

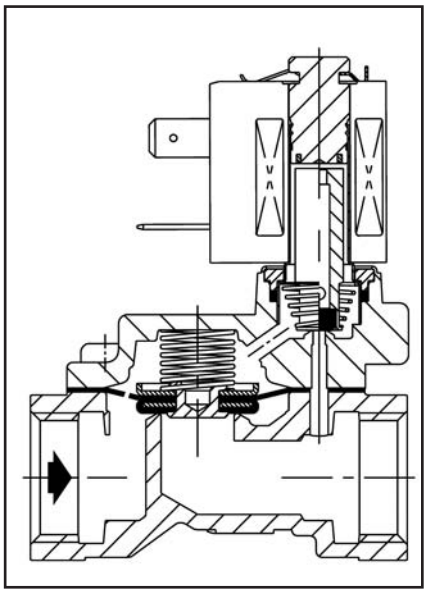
Differential pressure		See "SPECIFICATIONS" [1 bar =100 kPa]						
Ambient temperature range		-10°C to +60°C						
Maximum viscosity		40 cSt (mm²/s)						
Response time (Air operation, ΔP = 6bar)		3/8	1/2	3/4	1	1 1/4	1 1/2	2
opening time	(ms)	25	30	55	70	300	300	1500
closing time	(ms)	40	90	110	200	1000	1000	2000

Fluids (*)	Temperature Ranges (TS)	Sealings (*)
DN ≤ 25 : air, inert gas, oil & water DN > 25 : air & water	-10°C to +85°C	NBR (nitrile / buna-n)

MATERIALS IN CONTACT WITH FLUID

(*) Ensure that the compatibility of the fluids in contact with the materials is verified

Body	Brass
Internal parts	Stainless Steel and Brass
Springs	Stainless Steel
Seals, diaphragm and disc	NBR
Shading coil	Copper



ELECTRICAL CHARACTERISTICS

Coil insulation class	F
Connector	Spade plug
Connector specifications	
for C22A	3 x DIN 43650
for C25A	ISO 4400
Electrical safety	
for C22A	IEC 335
for C25A	VDE 0580
Standard voltages	DC (=) : 24V AC (~) : 24V - 115V - 230V / 50 Hz

(Other voltages and 60Hz available on request)

Coil Type	Nominal Power Rating				Ambient Temperature Range (TS) (°C)	Protection
	Inrush AC	Holding AC		Hot / Cold DC		
	(VA)	(VA)	(W)	(W)		
C22A	12	6	4	4.5 / 5.5	-10°C to +60°C	moulded IP65
C25A	10.4	6	3.5	5 / 7	-10°C to +60°C	

SPECIFICATIONS

Pipe Size	Orifice Size	Flow Coefficient Kv		Operating Pressure Differential (bar)					Coil Type	Catalog Number	
				Min.	Maximum (PS)						
					Air (*)		Water (*)				
(G)	(mm)	(m³/h)	(l/min)		AC	DC	AC	DC	AC / DC	NBR Sealings	
NC - Normally Closed											
G* 3/8	12	2.4	40	0.3	10	10	10	10	C22A	SCX E238A001	24029
G* 3/8	12	2.4	40	0.3	16	16	16	16	C25A	SCX E238A006	24029
G* 1/2	12	2.4	40	0.3	10	10	10	10	C22A	SCX E238A002	24029
G* 1/2	12	2.4	40	0.3	16	16	16	16	C25A	SCX E238A007	24029
G* 1/2	15	4.2	70	0.3	10	10	10	10	C22A	SCX E238A003	24029
G* 1/2	15	4.2	70	0.3	16	16	16	16	C25A	SCX E238A008	24029
G* 3/4	20	6.6	110	0.3	10	10	10	10	C22A	SCX E238A004	24029
G* 3/4	20	6.6	110	0.3	16	16	16	16	C25A	SCX E238A009	24029
G* 1	25	9.9	165	0.3	10	10	10	10	C22A	SCX E238A005	24029
G* 1	25	9.9	165	0.3	16	16	16	16	C25A	SCX E238A010	24029
NO - Normally Open											
3/8	13.5	1.68	28	0.35	12	12	12	12	C25A	SCX G238S414	24029
1/2	13.5	2.1	35	0.35	12	12	12	12	C25A	SCX G238S415	24029
3/4	18	4.98	83	0.35	12	12	12	12	C25A	SCX G238S416	24029
1	24	10.98	183	0.35	12	12	12	12	C25A	SCX G238S417	24029

TPL 24029 : With removable core tube assembly.

OPTIONS

- Valves can also be supplied with FPM (fluorelastomer / viton), EPDM (ethylene-propylene) sealings, diaphragm and disc. Use the appropriate optional suffix letter for identification
- Manual operator, suffix **MO**

Versions 3/8 to 1:

- Explosionproof EEx **m** coil for hazardous areas **ATEX/CENELEC** (only for versions with coil C22A)
- Compliance with "**UL**" and "**CSA**" standards (catalog numbers A001/A002/B003/A004/A005 only, optional)
- Magnetic latch execution for C22A coil type only

All versions:

- Connectors with built-in indicator and electrical protection or prewired with cable length 2 m

INSTALLATION

- Solenoid valves can be mounted in any position without affecting operation
- Pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1.
- The fourth digit in the catalog number indicates the standard pipe connection: E= ISO 228/1 and ISO 7/1
- Other pipe connections are available on request
- Installation/maintenance instructions are included with each valve
- Spare parts kits and replacement coils are available

DIMENSIONS (mm), WEIGHT (kg)

Fig. 1

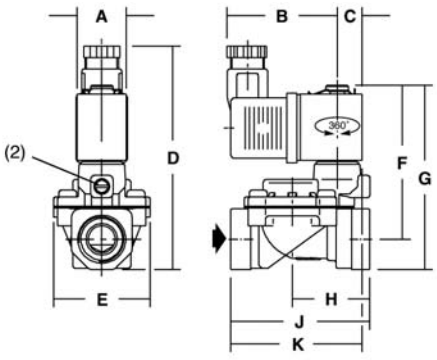


Fig. 2

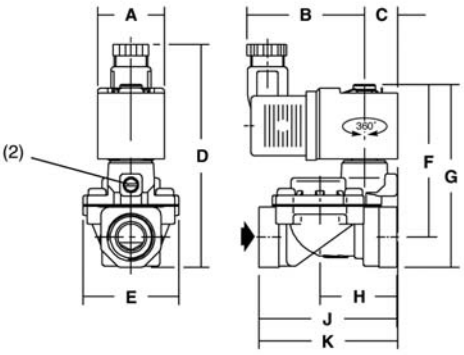
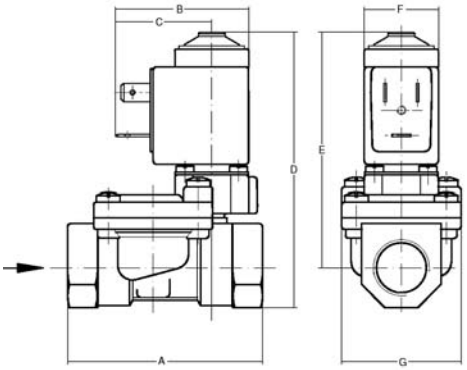


Fig. 3

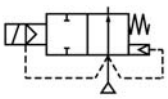


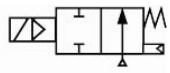
Catalog Number		Ø	A	B	C	D	E	F	G	H	J	K	Weight [1]	(C)
SCX E238A001	24029	3/8	22	49	11	95.0	43	68.5	82.0	34.5	62.0	58.5	0.4	
SCX E238A002	24029	1/2	22	49	11	95.0	43	68.5	82.0	34.5	62.0	58.5	0.4	
SCX E238A003	24029	1/2	22	49	11	97.0	57	71.0	84.5	45.5	81.5	74.5	0.5	Fig. 1
SCX E238A004	24029	3/4	22	49	11	108	68	79.5	95.5	53.0	95.0	86.5	0.8	
SCX E238A005	24029	1	22	49	11	118	87	84.5	105	58.0	105.5	94.0	1.0	
SCX E238A006	24029	3/8	30	57	15	96.5	43	68.5	82.0	34.5	62.0	62.5	0.5	
SCX E238A007	24029	1/2	30	57	15	96.5	43	68.5	82.0	34.5	62.0	62.5	0.5	
SCX E238A008	24029	1/2	30	57	15	99.0	57	71.0	84.5	45.5	81.5	78.5	0.6	Fig. 2
SCX E238A009	24029	3/4	30	57	15	110	68	79.5	95.5	53.0	95.0	90.5	0.9	
SCX E238A010	24029	1	30	57	15	119.5	87	84.5	105	58.0	105.5	98.0	1.1	
SCX G238S414	24029	3/8	60	34	21	89.0	79	25	40	-	-	-	0.32	
SCX G238S415	24029	1/2	66	34	21	94.0	80	25	40	-	-	-	0.38	Fig. 3
SCX G238S416	24029	3/4	79	34	21	103	86	25	50	-	-	-	0.52	
SCX G238S417	24029	1	105	34	21	121	100	25	71	-	-	-	1.08	

[1] including coil and connector (2) Manual operated (option) (C) Construction type

SOLENOID VALVES

built-in pilot, pilot operated
floating diaphragm
1 1/4" to 2"

NC 

NO 

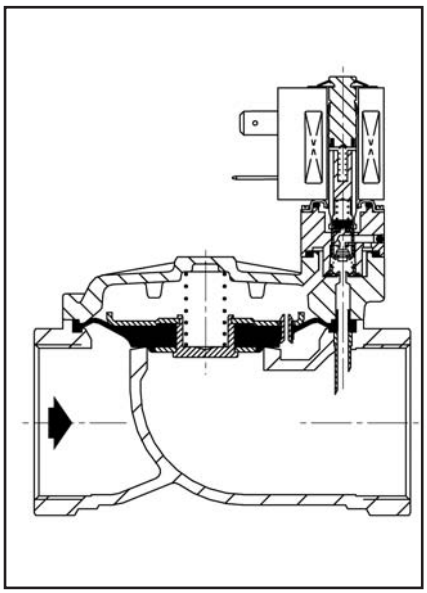
2/2
Series
238

FEATURES

- *Solenoid valves satisfy all relevant EC directives*
- *Two way valves for automatic control of water, air and inert gas and other gases / liquids compatible with the sealing materials used*
- *Minimum operating pressure differential 0.3 bar*
- *Interchangeability of magnetic heads, AC and DC*

GENERAL

Differential pressure		0.5 to 10 bar [1 bar = 100 kPa]		
Ambient temperature range		-10°C to +60°C		
Maximum viscosity		40 cSt (mm^2/s)		
Response time (Air operation, ΔP = 6bar)		1 1/4	1 1/2	2
opening time	(ms)	300	300	1500
closing time	(ms)	1000	1000	2000



Fluids (*)	Temperature Ranges (TS)	Sealings (*)
air & water	-10°C to +85°C	NBR (nitrile / buna-n)

MATERIALS IN CONTACT WITH FLUID

(*) Ensure that the compatibility of the fluids in contact with the materials is verified

Body	Brass
Internal parts	Stainless Steel and Brass
Springs	Stainless Steel
Seals, diaphragm and disc	NBR
Shading coil	Copper

ELECTRICAL CHARACTERISTICS

Coil insulation class	F
Connector	Spade plug
Connector specifications	ISO 4400
Electrical safety	VDE 0580
Standard voltages	DC (=) : 24V
(Other voltages and 60Hz available on request)	AC (~) : 24V - 115V - 230V / 50 Hz

Coil Type	Nominal Power Rating				Ambient Temperature Range (TS) (°C)	Protection
	Inrush AC	Holding AC		Hot / Cold DC		
	(VA)	(VA)	(W)	(W)		
ANX	23	14	8	7.5 / 9.0	-10 to +50	moulded IP65

SPECIFICATIONS

Pipe Size	Orifice Size	Flow Coefficient Kv		Operating Pressure Differential (bar)					Coil Type	Catalog Number	Options
				Min.	Maximum (PS)						FPM
					Air (*)		Water (*)				
(G)	(mm)	(m^3/h)	(l/min)		AC	DC	AC	DC	AC / DC	NBR Sealings	
NC - Normally Closed											
1 1/4	30	15	250	0.5	10	10	10	10	ANX	SC G238C016	V
1 1/2	45	27	450	0.5	10	10	10	10	ANX	SC G238C017	V
2	45	34	566	0.5	10	10	10	10	ANX	SC G238C018	V
NO - Normally Open											
1 1/4	30	15	250	0.5	10	10	10	10	ANX	SC G238C019	V
1 1/2	45	27	450	0.5	10	10	10	10	ANX	SC G238C020	V
2	45	34	566	0.5	10	10	10	10	ANX	SC G238C021	V

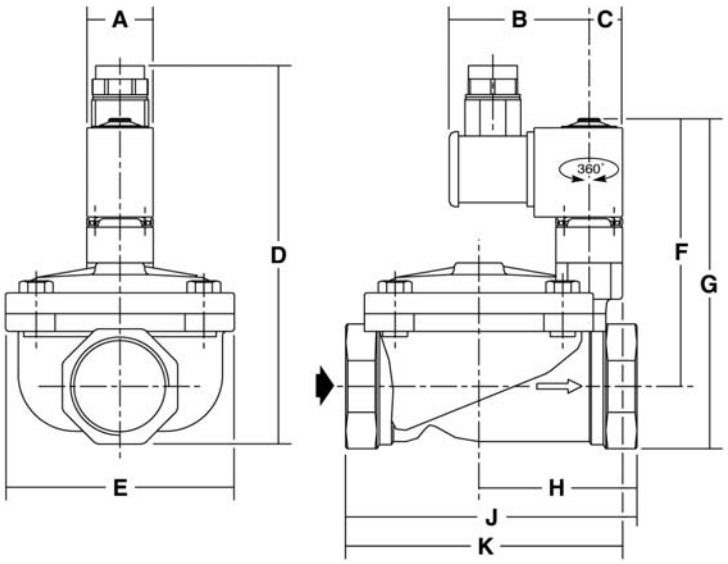
OPTIONS

- Valves can also be supplied with FPM (fluoroelastomer / viton) sealings, diaphragm and disc. Use the appropriate optional suffix letter for identification
- Connectors with built-in indicator and electrical protection or prewired with cable length 2 m

INSTALLATION

- Solenoid valves can be mounted in any position without affecting operation
- Pipe connections (G) have standard combination thread according to ISO 228/1
- The third digit in the catalog number indicates the standard pipe connection.
- Other pipe connections are available on request
- Installation/maintenance instructions are included with each valve
- Spare parts kits and replacement coils are available

DIMENSIONS (mm), WEIGHT (kg)

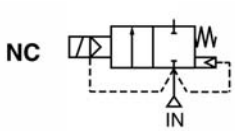


Catalog Number	(G)	A	B	C	D	E	F	G	H	J	K	Weight (1)
SC G238C016	1 1/4	30	57	20	148	81	107 (2)	133 (2)	63	113	106	1.7
SC G238C017	1 1/2	30	57	20	155	110	110 (2)	140 (2)	80	140	129	2.6
SC G238C018	2	30	57	20	166	110	115 (2)	151 (2)	85	157	129	3.1
SC G238C019	1 1/4	30	57	20	166	81	125	151	63	113	106	1.9
SC G238C020	1 1/2	30	57	20	173	110	128	158	80	140	129	3.0
SC G238C021	2	30	57	20	184	110	133	169	85	157	129	3.4

(1) including coil and connector (2) Manual operated, add +23mm

SOLENOID VALVES

normally closed, anti-water hammer
pilot operated, hung diaphragm
3/8" to 1"



2/2
Series
238

FEATURES

- *Solenoid valves satisfy all relevant EC directives*
- *Two way shut-off valves for automatic control of cold and hot water*
- *Zero bar minimum operating pressure*
- *Valves are designed to reduce water hammer*
- *Self-cleaning device located in the bleed orifice to guarantee an optimal performance*

GENERAL

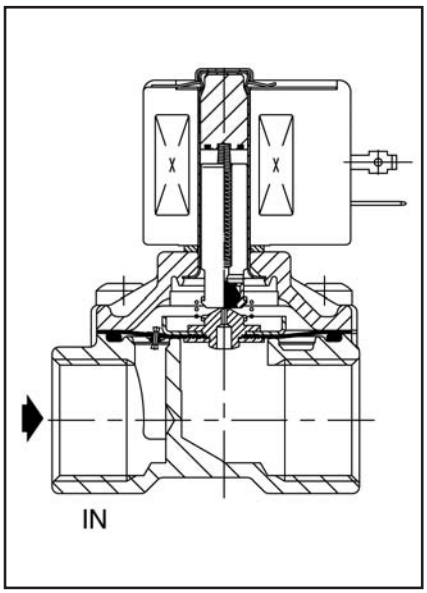
Differential pressure	0 to 10 bar [1 bar = 100 kPa]
Ambient temperature range	40 cSt (mm^2/s)

Fluids (*)	Temperature Ranges (TS)	Sealings (*)
air, water, oil & inert gas	-20°C to +85°C	NBR (nitrile / buna-n)

MATERIALS IN CONTACT WITH FLUID

(*) Ensure that the compatibility of the fluids in contact with the materials is verified

Body	Brass
Internal parts	Stainless Steel
Springs	Stainless Steel
Seals, diaphragm and disc	NBR
Shading coil (AC)	Copper



ELECTRICAL CHARACTERISTICS

Coil insulation class	F
Connector	Spade plug
Connector specifications	ISO 4400
Electrical safety	IEC 335
Standard voltages	DC (=) : 24V
(Other voltages and 60Hz available on request)	AC (~) : 24V - 115V - 230V / 50 Hz

Coil Type	Nominal Power Rating				Ambient Temperature Range (TS) (°C)	Protection
	Inrush AC	Holding AC		Hot / Cold DC		
	(VA)	(VA)	(W)	(W)		
CM6-FT	34	15.6	6	-	-20 to +75	moulded IP65
CM6-FB	30	22.5	9	9.5/15.3	-20 to +50	

SPECIFICATIONS

Pipe Size	Orifice Size	Flow Coefficient Kv		Operating Pressure Differential (bar)			Coil Type		Catalog Number
				Min.	Max (PS) Water (*)				
(G)	(mm)	(m^3/h)	(l/min)		AC	DC	AC	DC	
NC - Normally Closed									
3/8	12.5	2.1	35	0	10	10	CM6 - FT	CM6 - FB	SC G238A044
1/2	12.5	2.1	35	0	10	10	CM6 - FT	CM6 - FB	SC G238A046
3/4	19.0	4.5	75	0	10	10	CM6 - FT	CM6 - FB	SC G238A048
1	25.0	10.0	166	0	10	10	CM6 - FB	CM6 - FB	SC G238A050

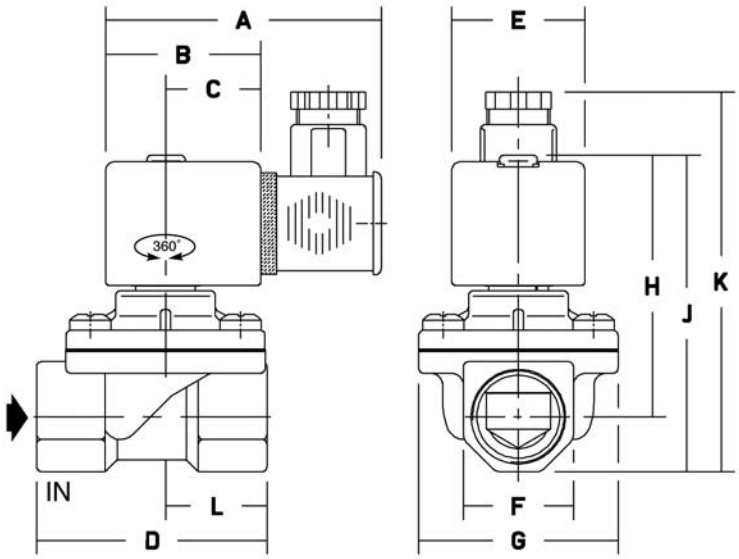
OPTIONS

- Approval WRC
- Connectors with built-in indicator and electrical protection or prewired with cable length 2 m

INSTALLATION

- Solenoid valves can be mounted in any position without affecting operation
- Pipe connections identifier is: G = G (ISO 228/1)
- The third digit in the catalog number indicates the standard pipe connection
- Installation/maintenance instructions are included with each valve
- Spare parts kits and replacement coils are available

DIMENSIONS (mm), WEIGHT (kg)



Catalog Number	A	B	C	D	E	F	G	H	J	K	L	Weight (1)
SC G238A044	80	45	27.5	52	39	27	37	72	85	104	23.0	0.55
SC G238A046	80	45	27.5	52	39	27	37	72	85	104	23.0	0.50
SC G238A048	80	45	27.5	67	39	32	58	76	92	111	29.5	0.70
SC G238A050	80	45	27.5	86	39	41	73	92	112	131	37.0	1.20

(1) including coil and connector

HOT WATER & STEAM VALVES

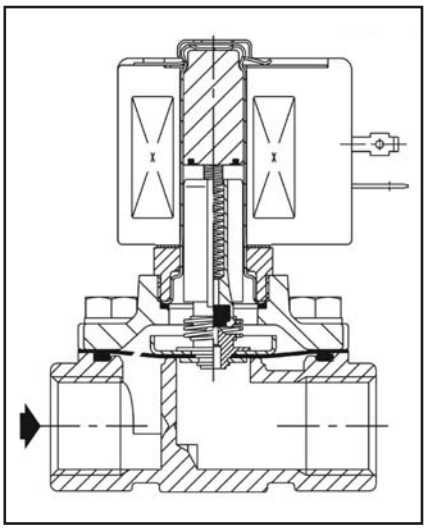
brass or stainless steel bodies
1/8" to 2 1/2"

NC
NO

2/2
Series
220/222/240/263

FEATURES

- *Handle the challenges of high temperature fluids*
- *PTFE and EPDM discs. Stainless steel seats. Plus high temperature coils help provide long, reliable service life*
- *Wide range of valve constructions*
- *Specify these valves for the high temperature applications found in laudries, moulding, steam atomization, sterilization, autoclaves and many others*
- *Series 220 : heavy duty, pilot operated piston valves have stainless steel pistons*
- *Series 222 : pilot operated diaphragm, piston and Y-body floating piston design*
- *Series 240 : pilot operated diaphragm*
- *Series 263 : direct acting miniature valves*



GENERAL

Nominal Ambient Temperature Ranges:

for USA operators

AC :	32°F to 125°F (0°C to 52°C)
RedHat II - DC :	32°F to 104°F (0°C to 40°C)
RedHat I - DC :	32°F to 77°F (0°C to 25°C); occassionally 104°F / 40°C

for European operators

-20°C to 40°C, moulded IP65

	Series 8220	Series 8222	Series 240	Series 263
Response time	40 - 120 ms	15 - 100 ms	100 - 150 ms	5 - 25 ms

MATERIALS IN CONTACT WITH FLUID

(*) Ensure that the compatibility of the fluids in contact with the materials is verified

Common Parts	
Body	Brass
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading coil	Copper
Series 8220	
Piston / Discs	PTFE
Seals	EPDM
Series 8222	
Seals, Discs & Diaphragms	EPDM and / or PTFE
Piston	Brass or PTFE
Series 240	
Seals & Diaphragm	Reinforced PTFE
Seat	Stainless Steel
Series 263	
Seals	EPDM
Discs	PTFE
Seat	Stainless Steel

ELECTRICAL CHARACTERISTICS

Connector	Spade plug
Connector specifications	ISO 4400
Electrical safety	IEC 335
Standard voltages	DC (=) : 24V (availability depends on models) AC (~) : 24V - 115V - 230V / 50 Hz

(Other voltages and 60Hz available on request)

SPECIFICATIONS

Pipe Size	Orifice Size (mm)	Kv Flow Factor	Operating Pressure Differential (bar)			Max. Fluid Temperature °C	Brass Body		Coil Type	
			Min.	Maximum (PS)						
				Steam	Hot Water	Steam & Hot Water	Catalog Number	Const. Ref.	AC	DC
PILOT OPERATED - NORMALLY CLOSED (CLOSED WHEN DE-ENERGISED) BRASS SEAT PTFE DISC										
NPT 1/2	16	3.5	0.35 (1)	10	10	184	SC B220A021	1	CMXX-HT	-
NPT 3/4	19	4.3	0.35 (1)	10	10	184	SC B220A023	1	CMXX-HT	-
NPT 1	25	11.6	0.35	10	10	184	SC B220.025	2	CMXX-HT	-
PILOT OPERATED - NORMALLY CLOSED (CLOSED WHEN DE-ENERGISED)										
NPT 3/8	9.5	2.2	0.07	6	10	165	SC B222A074	5	M6-FT	-
NPT 3/8	16	2.6	0	3.5	-	150	SC B222B093	3	CMXX-FT	CM12-FT
NPT 1/2	9.5	2.2	0.07	6	10	165	SC B222A076	5	M6-FT	-
NPT 1/2	16	3.3	0	9	9	184	SC B222D002	6	MXX-HB	-
NPT 1/2	16	3.5	0	3.5	-	150	SC B222B094	3	CMXX-FT	CM12-FT
NPT 3/4	19	5.1	0	9	9	184	SC B222E003	6	MXX-HB	-
NPT 3/4	19	4.3	0	3.5	-	150	SC B222B095	3	CMXX-FT	CM12-FT
PILOT OPERATED - NORMALLY CLOSED (CLOSED WHEN DE-ENERGISED)										
G 3/8	10	2	0.4	8	8	170	SC G240A100	7	BMX	-
PILOT OPERATED - NORMALLY CLOSED (CLOSED WHEN DE-ENERGISED)										
Rp 1/4	4.0	0.45	0	6	6	165 (AC) | 150 (DC)	SC E263A300	4	CMXX-FT	CM12-FT
Rp 1/4	5.6	0.62	0	5	-	160 (AC)	SC E263A301	4	CMXX-FT	CM12-FT
Rp 3/8	4.0	0.45	0	6	6	165 (AC) | 150 (DC)	SC E263A305	4	CMXX-FT	CM12-FT
Rp 3/8	5.6	0.62	0	5	-	160 (AC)	SC E263A306	4	CMXX-FT	CM12-FT

(1) Once opened, valve remains open till 0kPa at inlet

OPTIONS

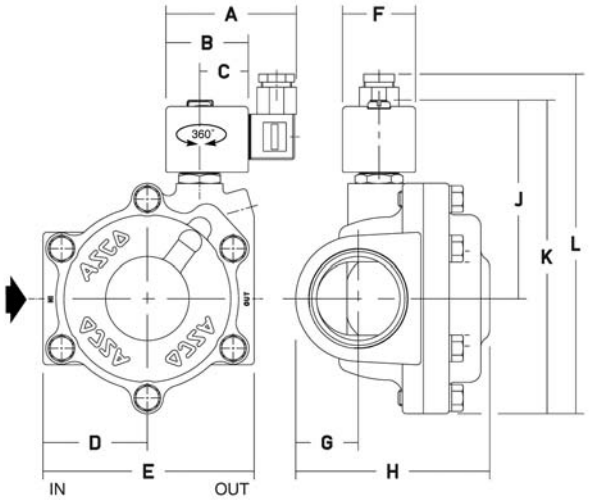
- Waterproof enclosure with embedded screw terminal coil according to protection class IP67, CEE-10
- Mounting brackets, suffix MB

INSTALLATION

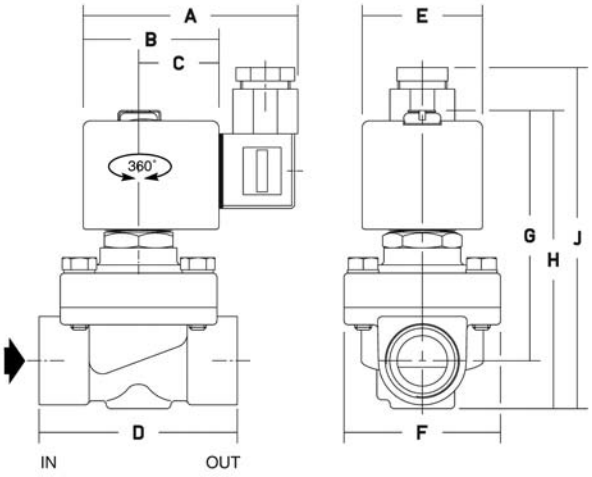
- Solenoid valves can be mounted in any position without affecting operation
- Other pipe connections are available upon request
- Plug with visual indication and peak voltage suppression or with cable length of 2m
- The third digit in the catalog number indicates the standard pipe connection
- Installation/maintenance instructions are included with each valve
- Spare parts kits and replacement coils are available

DIMENSIONS (mm)**, WEIGHT** (kg)

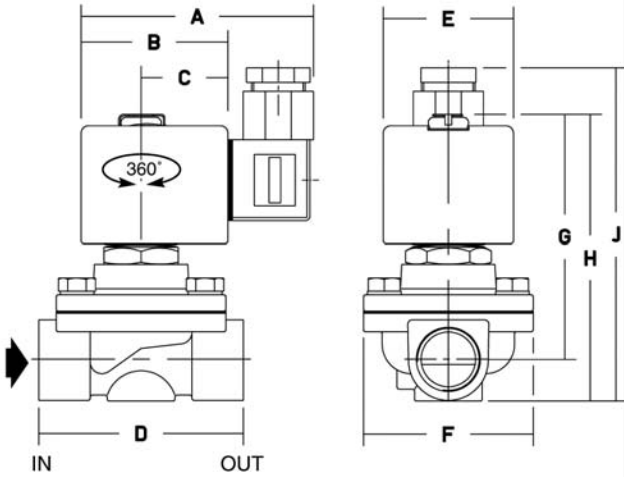
Const Ref. 1



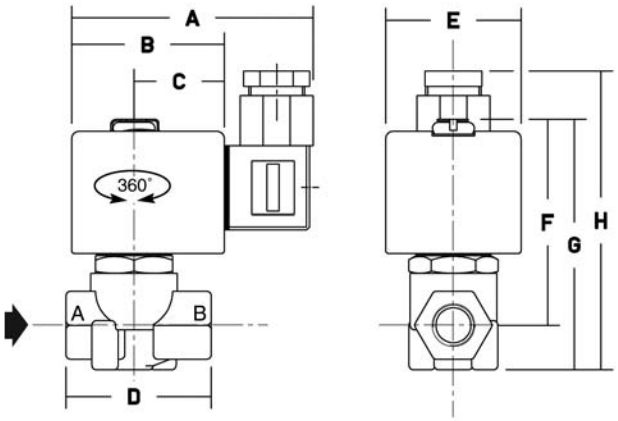
Const Ref. 2



Const Ref. 3



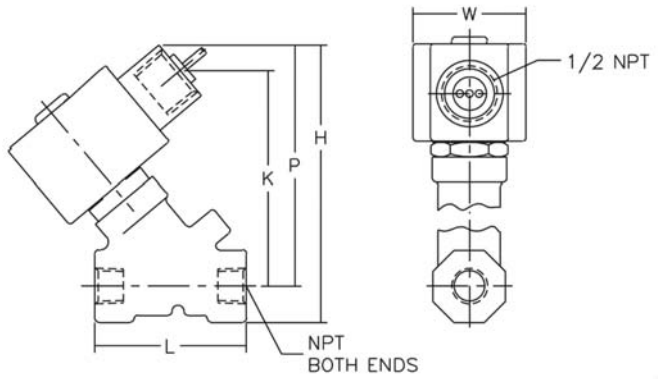
Const Ref. 4



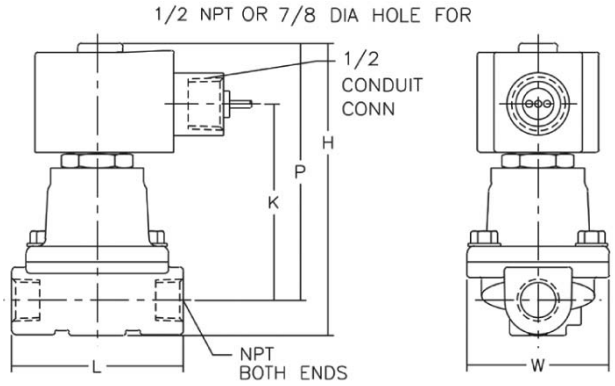
Const. Ref	Catalog Number	A	B	C	D	E	F	G	H	J	K	L	X	Weight (1)
1	SC B220A021	80	50	30	-	70	45	-	58	88	102	119	53	0.9
1	SC B220A023	80	50	30	-	73	45	-	58	92	109	122	59	1.0
2	SC B220.025	80	50	30	47	95	45	25	78	106	147	162	98	1.8
3	SC B222B093	86	56	33	-	70	50	-	58	91	103	102	-	1.2
3	SC B222B094	86	56	33	-	70	50	-	58	91	103	102	-	1.2
3	SC B222B095	86	56	33	-	71	50	-	58	94	111	113	-	1.3
4	SC E263A300	80	50	30	-	48	45	-	-	67	82	99	-	0.7
4	SC E263A301	80	50	30	-	48	45	-	-	67	82	99	-	0.7
4	SC E263A305	80	50	30	-	48	45	-	-	67	82	99	-	0.7
4	SC E263A306	80	50	30	-	48	45	-	-	67	82	99	-	0.7

(1) including coil and connector

Const Ref. 5



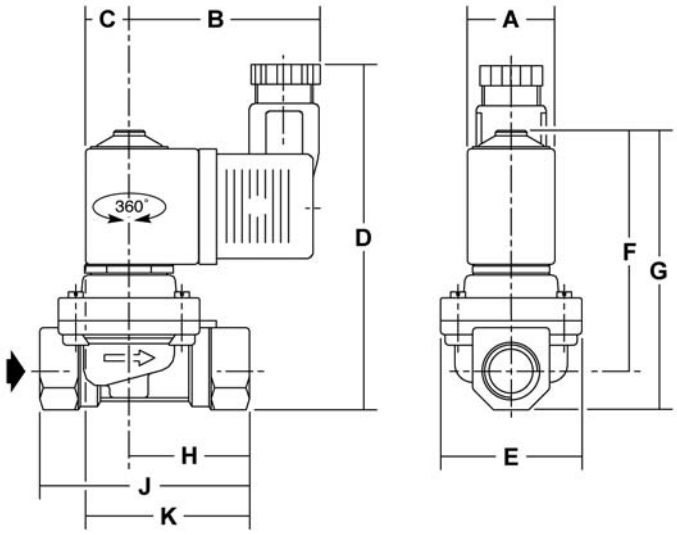
Const Ref. 6



Const. Ref	Catalog Number		H	K	L	P	W	Weight (1)
5	SC B222A074	mm	106	83	58	92	43	0.5
5	SC B222A076	mm	106	83	58	92	43	0.5
6	SC B222D002	mm	119	80	70	105	58	1.3
6	SC B222E003	mm	119	80	70	105	58	2.0

(1) including coil and connector

Const Ref. 7



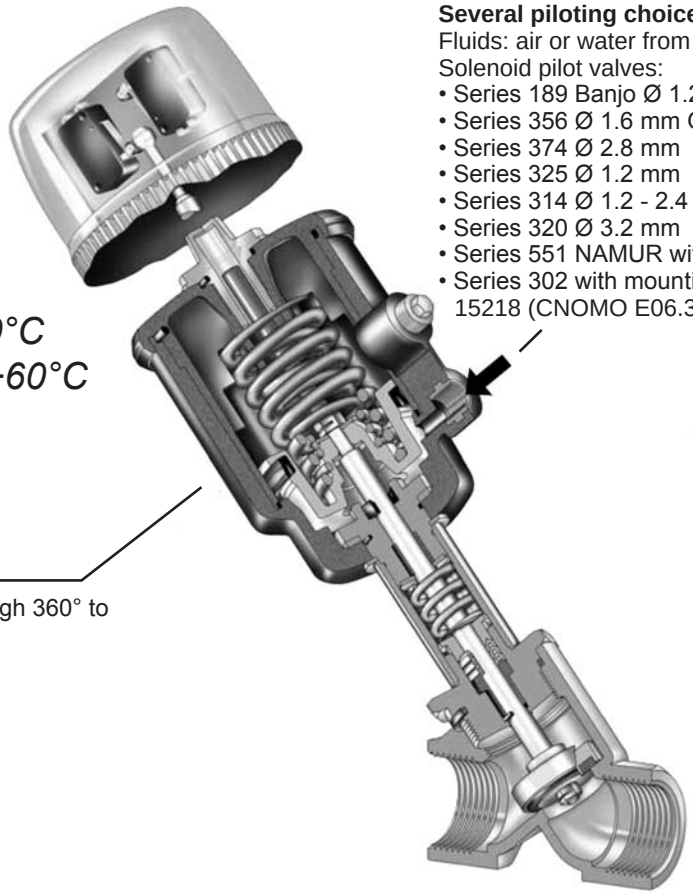
Const. Ref	Catalog Number	A	B	C	D	E	F	G	H	J	K	Weight (1)
7	SC G240A100	25	49	12.5	95	40	69	80	34.5	60	47	0.38

(1) including coil and connector

Reliability and long service life
Anti-waterhammer design Backpressure resistant

Angle-seat valves Series 290-390

- *Excellent flow rate*
- *PN16*
- *Max. fluid temperature +180°C*
- *Max. ambient temperature +60°C*

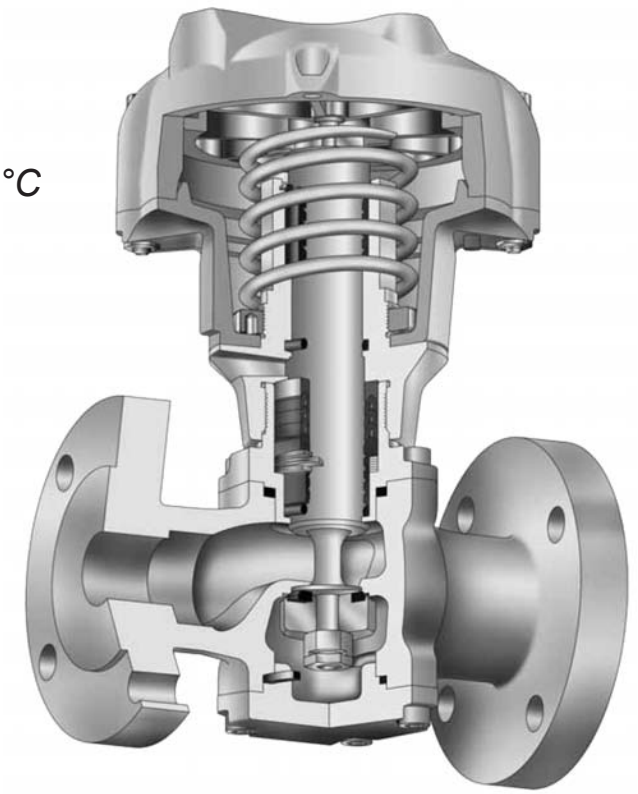


Several piloting choices :
Fluids: air or water from 1.5 to 10 bar
Solenoid pilot valves:
- Series 189 Banjo Ø 1.2 mm
- Series 356 Ø 1.6 mm G1/8
- Series 374 Ø 2.8 mm
- Series 325 Ø 1.2 mm
- Series 314 Ø 1.2 - 2.4 et 3.2 mm
- Series 320 Ø 3.2 mm
- Series 551 NAMUR with interface
- Series 302 with mounting pad to ISO 15218 (CNOMO E06.36.120N, size 15)

Easy assembly
Operator rotatable through 360° to position the piloting port

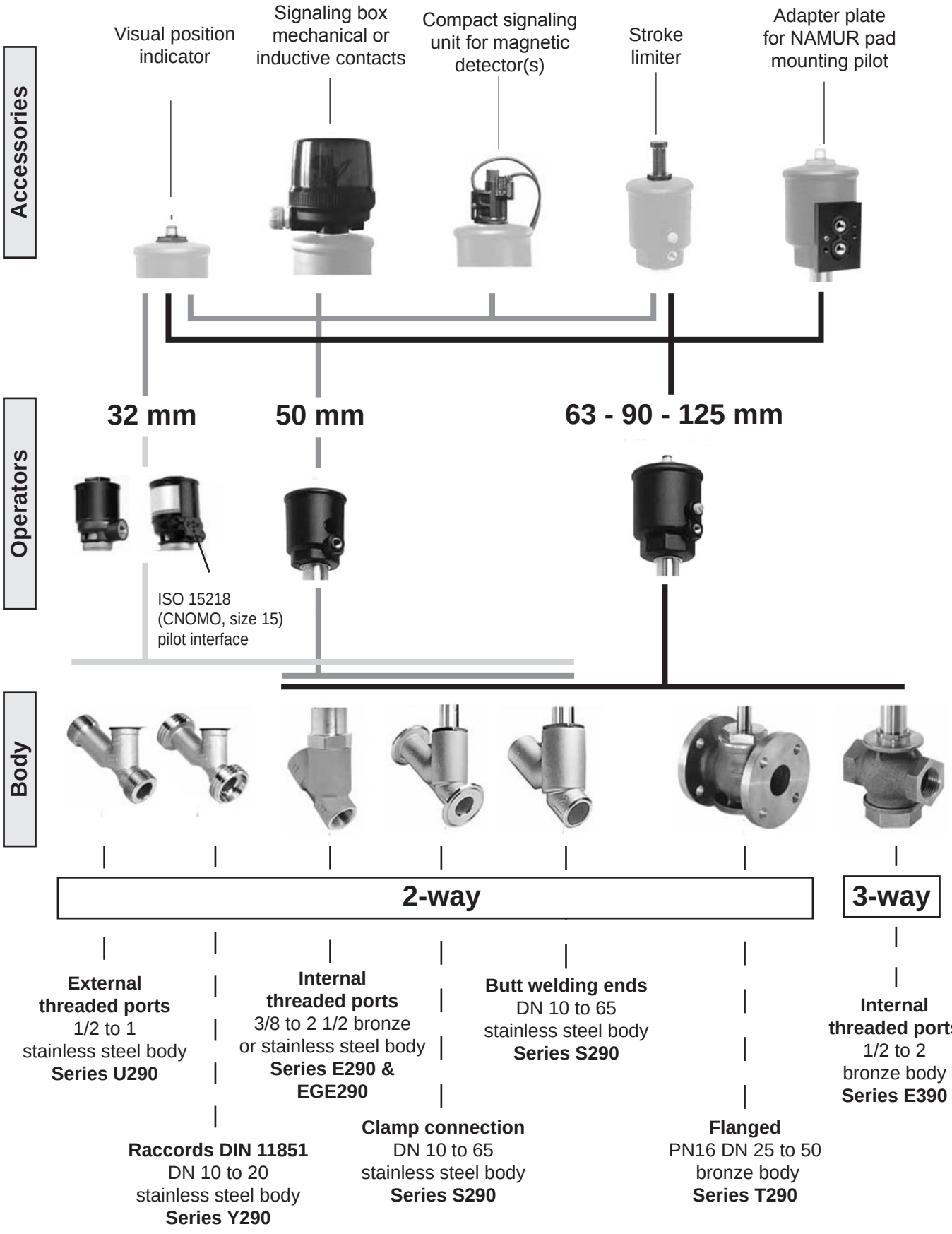
Globe valves Series 298-398

- *Thermal shock resistant*
- *PN40*
- *Max. fluid temperature +250°C*
- *Max. ambient temperature +180°C*
- *3/2 Universal*
- *Simple and easy maintenance, fully disassemblable valve*



Bi-directional fluid flow
Pressure can be applied to any orifice as required by the process

A wide range of valves for all fluid applications



For exact material selection and combinations, refer to the appropriate catalog pages.

A wide range of valves for all fluid applications

Accessories

Visual position indicator

Signaling box mechanical or inductive contacts

Operators

80 mm | **100 mm** | **150 mm** | **200 mm**

Body

2-way

Internal threaded ports
1/2 to 2
stainless steel body
Series E298

Flanged
PN 40 DIN and ANSI Class 300
DN 15 to 50
stainless steel body
Series T298

Socket welding ends
PN40 DN 15 to 50
stainless steel body
Series S298

3-way

Socket welding ends
PN40 1/2 to 2
stainless steel body
Series E398

Flanged
PN40 DIN & ANSI Class 300
DN 15 to 50
stainless steel body
Series T398

Socket welding ends
PN40 DN 15 to 50
stainless steel body
Series S398

For exact material selection and combinations, refer to the appropriate catalog pages.

GENERAL SPECIFICATIONS

2/2 VALVES **(Functions NC - NO)**						
series connection body	**E290** **compact** 1/2 to 1 **bronze**	**E290** **int. thread** 1/2 to 2 1/2 **bronze**	**E290** **int. thread** 3/8 to 2 1/2 **st. steel**	**U290** **ext. thread** 1/2 to 1 **st. steel** [1]	**Y290** **DIN 11851** DN 10 to 20 **all AISI 316L**	**S290 clamp/butt** **welding ends** DIN 10 to 65 **st. steel** [1]
Fluid : neutral aggressive steam **(10 bar max.)**	●	● ●	● ● ●	● ● ●		● ● ●
Fluid Temperature	-10°C to +95°C	-10°C to +184°C				
Differential Pressure	0 - 10 bar	0 - 16 bar				
Maximum Allowable Pressure	16 bar	16 bar				
Ambient Temperature	-10°C to +60°C	-10°C to +60°C				
Pilot Fluid	filtered air or water	filtered air or water				
Pilot Fluid Temperature	-10°C to +60°C	-10°C to +60°C				
Operator	50 & 63 mm	32, 50, 63, 90 & 125 mm				
Pilot Pressure NC (fluid entry under disc) NO (fluid entry under disc) NC (fluid entry above disc)	1.2 / 2.5 / 4 to 10 bar [2] see pg A11R1-27 -	1.2 / 2.5 / 4 to 10 bar [2] see pg A11R1-27 [2] see pg A11R1-27 [2]				

2/2 - 3/2 VALVES **(Functions NC - NO)**			
series connection body	**T290** **2/2, flanged** DN 25 to 50 **bronze**	**E390** **3/2, internal thread** 1/2 to 2 **bronze**	**EGE290** **gas service** 1/2 to 2 **bronze / stainless steel**
Fluids : neutral steam **(10 bar max.)** combustible gas (EN 161)	● ●	● ●	●
Fluid Tempature	-10°C to +184°C	-10°C to +184°C	-10°C to +60°C
Differential Pressure	0 - 16 bar	0 - 16 bar	0 - 10 bar
Maximum Allowable Pressure	16 bar	16 bar	-
Ambient Temperature	-10ºC to +60ºC	-10ºC to +60ºC	-
Pilot Fluid	filtered air or water	filtered air or water	air
Pilot Fluid Temperature	-10°C to +60°C	-10°C to +60°C	-10°C to +60°C
Operator	63, 90 & 125 mm	63, 90 & 125 mm	63 mm
Pilot Pressure NC (fluid entry under disc) NO (fluid entry under disc) NC (fluid entry above disc)	1.5 / 2.5 / 4 to 10 bar [2] see pg A11R1-27 [2] see pg A11R1-27 [2]	3 / 5 to 10 bar [2] see pg A11R1-27 [2] -	- - 5 to 9 bar

[1] All stainless steel AISI 316L versions on request.
[2] Pilot pressure lower than indicated manimum, contact ASCO local rep.

GENERAL SPECIFICATIONS

2/2 VALVES **(Functions NC - NO)**			
series	**E298** **internal thread** **PN40**	**T298** **flanged** **PN40, DIN & ANSI Class 300**	**S298** **socket welding ends** **PN40**
connection body	1/2 to 2 **stainless steel**	DN15 to 50 **stainless steel**	DN 15 to 50 **stainless steel**
Fluids : neutral	●	●	●
aggressive	●	●	●
superheated water	●	●	●
steam **(10 bar max.)**	●	●	●
Fluids Temperature	-10°C to +250°C		
Differential Pressure	0 - 40 bar		
Maximum Allowable Pressure	40 bar		
Allowable Backpressure	up to 40 bar		
Ambient Temperature	-25°C to +180°C (autoclavable valve)		
Pilot Fluid	filtered air		
Pilot Fluid Temperature	-10°C to +60°C		
Operator	80, 100, 150, 200 mm		
Pilot Pressure NC - NO	up to 10 bar [1]		

3/2 VALVES **(U, mixer / distributor functions)**			
series	**E398** **internal thread** **PN40**	**T398** **flanged** **PN40, DIN & ANSI Class 300**	**S398** **socket welding ends** **PN40**
connection body	1/2 to 2 **stainless steel**	DN 15 to 50 **stainless steel**	DN 15 to 50 **stainless steel**
Fluids : neutral	●	●	●
aggressive	●	●	●
superheated water	●	●	●
steam **(10 bar max.)**	●	●	●
Fluids Temperature	-10°C to +250°C		
Differential Pressure	0 - 40 bar		
Maximum Allowable Pressure	40 bar		
Ambient Temperature	-25°C to +180°C		
Pilot Fluid	filtered air		
Pilot Fluid Temperature	-10°C to +60°C		
Operator	80, 100, 150, 200 mm		
Pilot Pressure U	up to 10 bar [1]		

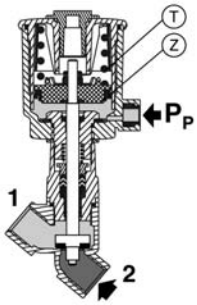
[1] See pilot pressure graphs on the respective catalog pages.

Selection and operation of a valve depend on two parameters:
- The maximum differential pressure (ΔP) across the valve in closed position
- The minimum pilot pressure necessary to control the valve

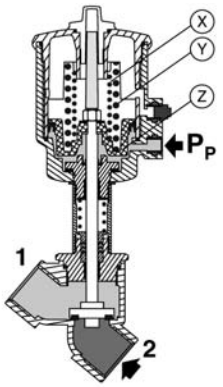
Series 290 - 390 valves can be equipped with diameter 32, 50, 63, 90 or 125 mm operators.

NC function
fluid entry under disc

32, 50 mm



63, 90, 125 mm



The valve is kept in the closed position by spring (T) (X) and/or (Y).
It is opened by pilot pressure (Pp) under the piston (Z).
The operators are standard available as follows:

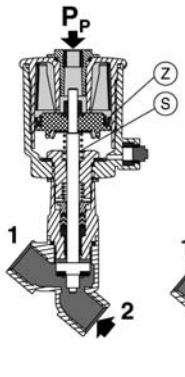
Operators	Return Spring	Pilot Pressure (bar)		Range Of Applications
		Min.	Max.	
32 - 50	T	4	10	high ΔP **typical applications**
63 - 90 - 125	X + Y	4	10	

To meet the requirements of different applications, 63-90-125 mm operators are available in two other versions:

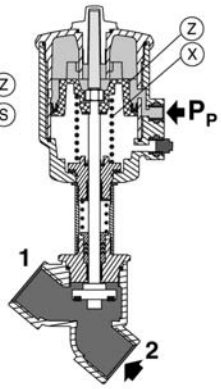
63 - 90 - 125	Y	2.5	10	average ΔP low pilot pressure
	X	1.5	10	low ΔP very low pilot pressure

NO function
fluid entry under disc

32, 50 mm



63, 90, 125 mm



The valves are kept in the open position by return spring (S) or (X).

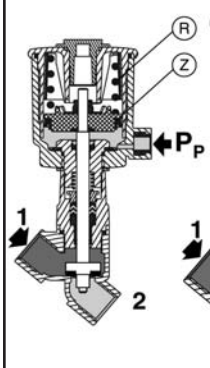
The valve is closed by pilot pressure (Pp) on piston (Z).

In the closed position, the pilot pressure must overcome the force of the return spring and that created by the ΔP under the disc.

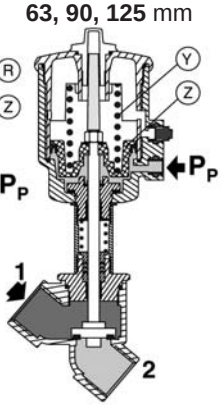
The minimum pilot pressure varies as a function of the ΔP to which the valve is subjected.

NC function
fluid entry above disc

32, 50 mm



63, 90, 125 mm



This function is recommended for steam systems (184°C max.) with high cycling rates.

Not to be used with liquids as waterhammer may occur.

Valves are maintained in the closed position by spring (R) or (Y).

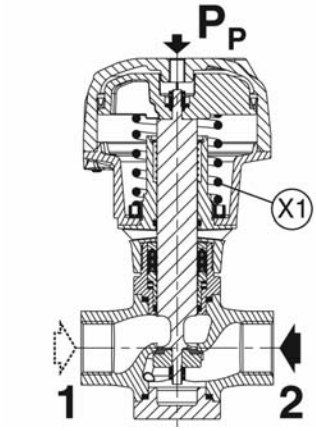
The valve is opened by pilot pressure (Pp) under piston (Z).

The pilot pressure must overcome the force of the return spring and that generated by the ΔP on the disc.

The minimum pilot pressure varies as a function of the ΔP to which the valve is subjected.

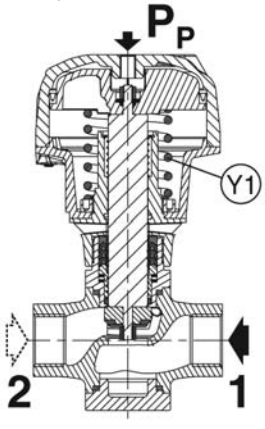
Series 298 - 398 valves can be equipped with diameter 80, 100, 150 or 200 mm operators.
The minimum pilot pressure varies as a function of the ΔP to which the valve is subjected. Low pilot pressure operation is standard on all 298 - 398 valves.

NC function
fluid entry under / above disc



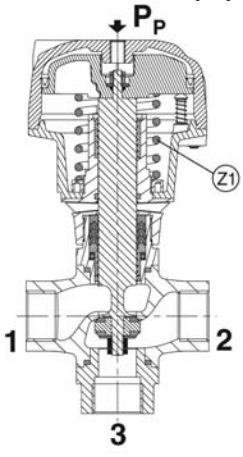
The valve is kept in the closed position by spring (X1). It is opened by pilot pressure (Pp).

NO function
fluid entry under / above disc



The valves are kept in the open position by return spring (Y1).
It is closed by pilot pressure (Pp).

U function (32)

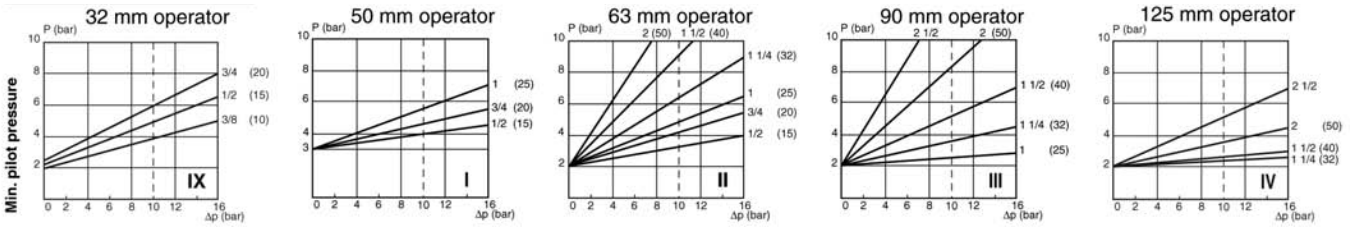


The valves are held in position by return spring (Z1). Pilot pressure (Pp).

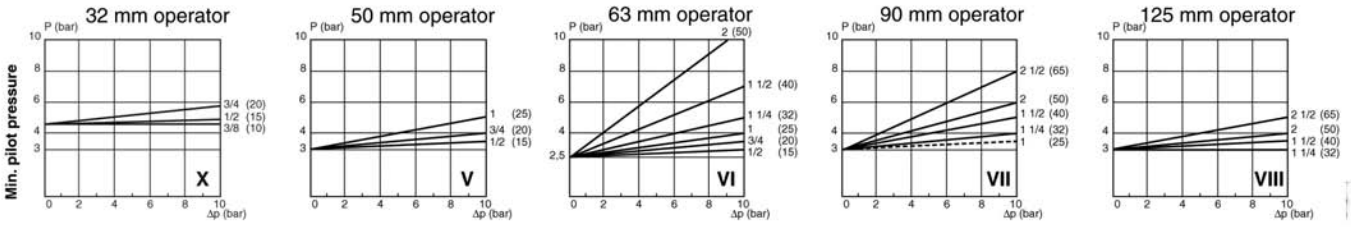
SELECTION OF THE MINIMUM PILOT PRESSURE

Series 290 / 390

For NO valves, fluid entry under disc



For NC valves, fluid entry above disc with backpressure



SELECTION OF PILOT VALVE TYPE FOR REQUIRED RESPONSE TIMES

Response times of valves depend on the Kv of the pilot valve or positioner used and the size of the valve, as shown in the following tables.

Series 290 / 390	Response time (in seconds) for NC valve series 290/390 (6 bar pilot air)																					
	32mm Operator		50mm Operator				63mm Operator				90mm Operator						125mm Operator					
	O (1)	C (1)	O (1)		C (1)		O (1)		C (1)		O (1)			C (1)			O (1)			C (1)		
	Pilots		Pilots		Pilots		Pilots		Pilots		Pilots			Pilots			Pilots			Pilots		
Ø (DN)	B	B	C1	F1	C1	F1	C1	F1	C1	F1	D	E	F1	D	E	F1	D	E	F1	D	E	F1
3/8 (10)	0.11	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/2 (15)	0.11	0.1	0.09	0.9	0.22	0.9	0.16	-	0.44	-	-	-	-	-	-	-	-	-	-	-	-	-
3/4 (20)	0.11	0.1	0.09	0.9	0.22	0.9	0.20	1	0.34	1	-	-	-	-	-	-	-	-	-	-	-	-
1 (25)	-	-	0.10	-	0.22	-	0.32	2	0.48	2	0.2	0.73	2	0.29	1.1	2.5	-	-	-	-	-	-
1 1/4 (32)	-	-	-	-	-	-	0.32	2	0.48	2	0.2	0.73	2	0.29	1.1	2.5	0.67	1.35	4.6	0.78	2.51	4.9
1 1/2 (40)	-	-	-	-	-	-	0.32	2	0.48	2	0.2	0.73	2	0.29	1.1	2.5	0.67	1.35	5	0.78	2.51	6
2 (50)	-	-	-	-	-	-	0.32	2	0.48	2	0.2	0.73	2	0.29	1.1	2.5	0.67	1.35	5	0.78	2.51	6
2 1/2 (65)	-	-	-	-	-	-	-	-	-	-	0.2	0.73	2	0.29	1.1	2.5	0.67	1.35	5	0.78	2.51	6

The times indicated for opening (O) and closing (C) of the valve corresponds to:

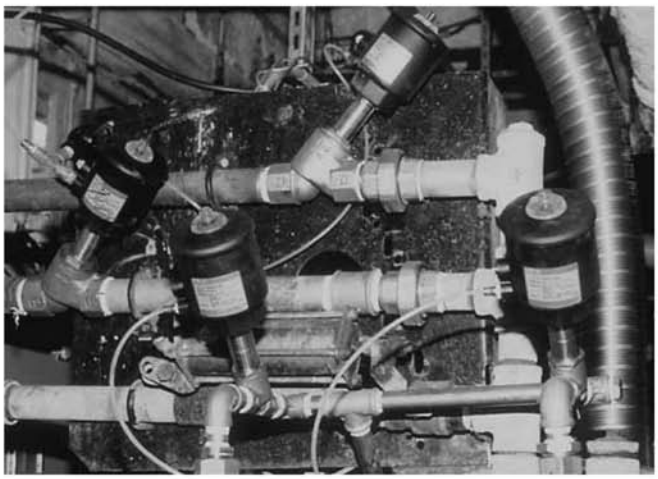
- **1/8, 32-50-63 mm operators, 3/2 pilots:**
  - C1: series 107 & HV293734 1/8 - Ø1.5 mm, max. pilot pressure 8 bar
  - F1: Positioner[D]: max. pilot pressure 8 bar
- **1/4, 90-125 mm operators, 3/2 pilots:**
  - D: series 374 1/4 - Ø2.8 mm, max. pilot pressure 10 bar
  - E: series 107 1/4 - Ø1.5 mm, max. pilot pressure 10 bar
- **Pad mounting to ISO 15218 (CNOMO E06.36.120N, size 15):**
  - B: series 302, Ø1.1 mm, max. pilot pressure 10 bar

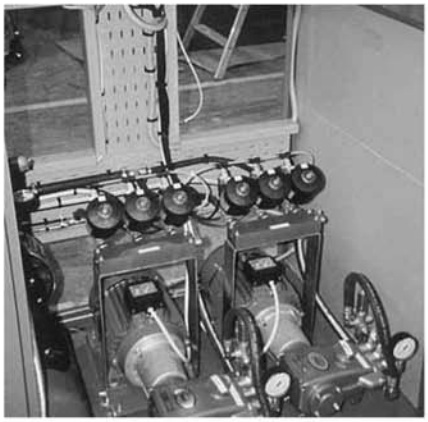
Series 298 / 398	Response time (in seconds) for NC valve series 298/398 (6 bar pilot air)															
	80mm Operator				100mm Operator				150mm Operator				200mm Operator			
	O		C		O		C		O		C		O		C	
	Pilots		Pilots		Pilots		Pilots		Pilots		Pilots		Pilots		Pilots	
	C1		C1		C1		C1		D		D		D		D	
Ø (DN)	2/2 NC (1)	3/2 U	2/2 NC (1)	3/2 U	2/2 NC (1)	3/2 U	2/2 NC (1)	3/2 U	2/2 NC (1)	3/2 U	2/2 NC (1)	3/2 U	2/2 NC (1)	3/2 U	2/2 NC (1)	3/2 U
1/2 (15)	0.05	0.07	0.74	0.69	-	-	-	-	-	-	-	-	-	-	-	-
3/4 (20)	-	-	-	-	0.12	0.13	0.77	0.98	-	-	-	-	-	-	-	-
1 (25)	-	-	-	-	0.08	0.11	0.92	1.59	-	-	-	-	-	-	-	-
1 1/4 (32)	-	-	-	-	-	-	-	-	0.08	0.09	0.48	0.77	-	-	-	-
1 1/2 (40)	-	-	-	-	-	-	-	-	0.08	0.09	1.02	1.15	-	-	-	-
2 (50)	-	-	-	-	-	-	-	-	-	-	-	-	0.13	0.23	1.43	2.05

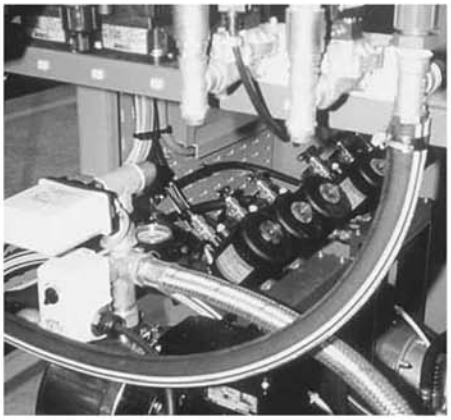
The times indicated for opening (O) and closing (C) of the valve corresponds to:

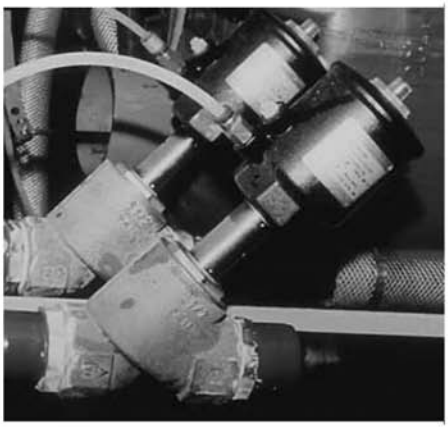
- **1/8, 80-100 mm operators, 3/2 pilots :**
  - C1: series 107 1/8 - Ø1.5 mm, max. pilot pressure 10 bar
- **1/4, 150-200 mm, operators 3/2 pilots :**
  - D: series 374 1/4 - Ø2.8 mm, max. pilot pressure 10 bar

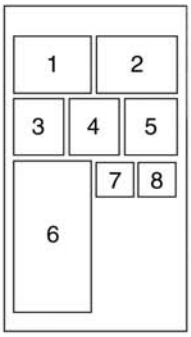
(1) Values for NC valves. For NO valves, interchange O and C values.











Series 290 - 390

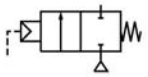
1 Industrial laundry (steam circuit)
2 Special machinery
3 Special machinery with steam circuit
4 Food processing
5 Chemical product processing

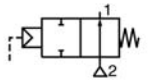
Series 298 - 398

6 Autoclaves and industrial boilers
7 Tyre press or rubber parts applications (vulcanisation)
8 Iron and steel industry

VALVES

pressure operated
bronze or stainless steel body
threaded ports, 3/8" to 2 1/2"

NC 

NO 

2/2
Series
E290

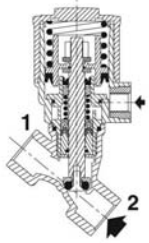
FEATURES

- *High flow due to angled seat*
- *Anti-waterhammer design (fluid entry under the disc)*
- *Vacuum operation up to 102^{-2}mbar*
- *Wide range of piston-type operators (32 - 50 - 63 - 90 - 125 mm dia.) rotatable through 360°, for maximum performance at different minimum pilot pressures*
- *High performance, maintenance-free stuffing box.*
- *290 series valves satisfy pressure equipment directive 97/23/EC*

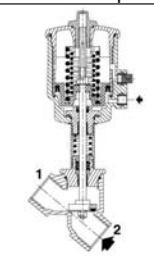
GENERAL

Differential pressure	See <<SPECIFICATIONS>> [1 bar = 10kPa]
Maximum allowable pressure	16 bar
Ambient temperature range	-10°C to +60°C
Maximum viscosity	600 cSt (mm^2/s)
Pilot fluid	Filtered air or water (1)
Max. pilot pressure	10 bar
Min. pilotaperature	-10°C to +60°C
Response time	See page A11R1-27

Fluids (*)	Temperature Ranges (TS)	Sealings (*)
DN ≤ 50 : air & gas group 1 & 2 DN 65 : air & gas group 2 All DN : water, oil, liquids groups 1 & 2 and steam	-10°C to +184°C	PTFE



NC function, entry under the disc, 32 and 50 mm operators



NC function, entry under the disc, 63, 90 and 125 mm operators

MATERIALS IN CONTACT WITH FLUID

(*) Ensure that the compatibility of the fluids in contact with the materials is verified

	Bronze Body	Stainless Steel Body
Valve body	Bronze	AISI 316L
Stuffing box housing	Brass	AISI 316L
Stem	Stainless Steel	Stainless Steel
Disc	Brass	Stainless Steel
Stuffing box packing	PTFE chevrons	PTFE chevrons
Wiper seal	FPM	FPM
Disc seal	PTFE	PTFE
Valve body seal	PTFE	PTFE

OTHER MATERIALS

Operator	Glass fibre filled PA
Optical position indicator	PA 12, supplied standard on valves with 63, 90 and 125 mm operators

(1) For dia. 32, 50 and 63 mm operators: At service fluid temperarures inside the valve body above 100°C, it is prohibited to pilot the valve with water.

SPECIFICATIONS

Piping (ISO 6708)		Flow Coefficient Kv		Pilot Pressure (bar)		Operating Pressure Differential (bar)				Operator Diameter (mm)	Catalog Number	
						Min.	Maximum (PS)					
Pipe Size (G)	DN	(m^3/h)	(l/min)	Min.	Max.		Air, Inert Gas, Aggressive Fluids (*)	Water, Oil, Liquids, Aggressive Liquids (*)	Steam (*) (≤ 184°C)		Bronze	Stainless Steel
NC - Normally Closed, entry under the disc (2)												
3/8	10	2.8	47	4	10	0	16	16	10	32	-	E290A791
1/2	15	4.1	68				12	12	10	32	-	E290A792
		4.9	82				16	16	10	50	E290A384	E290A393
3/4	20	6.5	108				6	6	6	32	-	E290A793
		9.4	157				10	10	10	50	E290A385	E290A374
1	25	12.8	213				6	6	6	50	E290A386	E290A395
		16.5	275				10	10	10	63	E290B010	E290B053
							16	16	10	90	E290B011	E290B054
1 1/4	32	27	450				6	6	6	63	E290A016	E290A059
							12	12	10	90	E290A017	E290A060
		29	482				16	16	10	125	E290A642	E290A646
1 1/2	40	45	750				4	4	4	63	E290A020	E290A063
							8	8	8	90	E290A021	E290A064
		48	800				16	16	10	125	E290A482	E290A495
2	50	59	983				2.5	2.5	2.5	63	E290A024	E290A067
							6	6	6	90	E290A025	E290A068
		66	100				10	10	10	125	E290A485	E290A498
2 1/2	65	94	1567				2	2	2	90	E290A487	E290A500
		111	1850				6	6	6	125	E290A488	E290A501

SPECIFICATIONS

Piping (ISO 6708)		Flow Coefficient Kv		Pilot Pressure (bar)		Operating Pressure Differential (bar)				Operator Diameter (mm)	Catalog Number	
						Min.	Maximum (PS)					
Pipe Size (G)	DN	(m^3/h)	(l/min)	Min.	Max.		Air, Inert Gas, Aggressive Fluids (*)	Water, Oil, Liquids, Aggressive Liquids (*)	Steam (*) (≤ 184°C)		Bronze	Stainless Steel
NO - Normally Open, entry under the disc												
3/8	10	2.8	47	I X (*)	10	0	16	16	10	32	-	E290A794
1/2	15	4.1	68	I X (*)			16	16	10	32	-	E290A795
		4.9	82	I (*)			16	16	10	50	E290A387	E290A396
3/4	20	6.5	108	I X (*)			16	16	10	32	-	E290A796
		9.4	157	I (*)			16	16	10	50	E290A388	E290A397
1	25	12.8	213	I (*)			16	16	10	50	E290A389	E290A398
		16.5	275	I I I (*)			16	16	10	90	E290B029	E290B072
1 1/4	32	27	450	I I (*)			16	16	10	63	E290A030	E290A073
				I I I (*)			16	16	10	90	E290A031	E290A074
		29	483	I V (*)			16	16	10	125	E290A643	E290A647
1 1/2	40	45	750	I I (*)			11	11	10	63	E290A032	E290A075
				I I I (*)			16	16	10	90	E290A033	E290A076
		48	800	I V (*)			16	16	10	125	E290A489	E290A502
2	50	59	983	I I (*)			7	7	7	63	E290A034	E290A077
				I I I (*)			13	13	10	90	E290A035	E290A078
		66	1100	I V (*)			16	16	10	125	E290A490	E290A503
2 1/2	65	94	1567	I I I (*)			7	7	7	90	E290A491	E290A504
		111	1850	I V (*)			16	16	10	125	E290A492	E290A505
NC - Normally Closed, entry above the disc (version recommended for rapid-cycling steam applications)												
3/8	10	2.8	47	X (*)	10	0	10	-	10	32	-	E290A797
1/2	15	4.1	68	X (*)			10	-	10	32	-	E290A798
		4.9	82	V (*)			10	-	10	50	E290A390	E290A399
3/4	20	6.5	108	X (*)			10	-	10	32	-	E290A799
		9.4	157	V (*)			10	-	10	50	E290A391	E290A400
1	25	12.8	213	V (*)			10	-	10	50	E290A392	E290A401
1 1/4	32	27	450	V I (*)			10	-	10	63	E290A039	E290A082
				VII(*)			10	-	10	90	E290A136	E290A137
1 1/2	40	45	750	V I (*)			10	-	10	63	E290A040	E290A083
				VII(*)			10	-	10	90	E290A041	E290A084
2	50	59	983	VI(*)			9	-	9	63	E290A042	E290A085
				VII(*)			10	-	10	90	E290A043	E290A086
2 1/2	65	94	1567	VII(*)			10	-	10	90	E290A623	E290A625
		111	1850	VIII(*)			10	-	10	125	E290A624	E290A626

(*) Minimum pilot pressure varies with differential pressure see page A11R1-27.

(2) Calculation of the minimum pilot pressure at a ΔP of max. 10 bar with allowable backpressure (backpressure not recommended with liquids as waterhammer may occur).

- 32 and 50mm operators, 4 bar minimum pilot pressure version: add 2 bar to the minimum pilot pressure of chart V or X, page A11R1-27.
- 63, 90 and 125 mm operators, 4 bar minimum pilot pressure version: add 1.5 bar to the minimum pilot pressure of chart VI, VII or VIII, page A11R1-27.

OPTIONS

- Signaling box of compact signaling unit
- Stroke limiter for opening
- Manual safety device
- Optical position indicator on 32 - 50 mm operators, NC function (32mm visual indicator - refer to ASCO local rep for confirmation)
- Adaptor plate for NAMUR pad mounting pilot (63-90-125 mm operators only)
- Oxygen service (except DN 65), pressure limited to 15 bar, temperature limited to + 60°C
- Vacuum applications up to 1.33 10^{-3} mbar
- ATEX 94/9/EC versions for potentially explosive atmospheres
- Other pipe connections are available upon request

INSTALLATION

- The valves can be mounted in any position without affecting operation
- Compatible with ASTM 1, 2 and 3 oils
- Pipe connections have standard combination thread according to ISO 228/1 and ISO7/1
- Installation/maintenance instructions are included with each valve

SPARE PARTS KITS

DN	Spare Part Kits No.	
	Ø 32 mm	Ø 50 - 63 - 90 - 125 mm
10	C140100	-
15	C140101	C131204 (1)
20	C140102	C131205 (1)
25	-	C131206 (1)
32	-	C131207 (1)
40	-	C131208 (1)
50	-	C131209 (1)
65	-	C131622 (1)

(1) Standard suffix VM also applies to kits. - Not available.

ORDERING EXAMPLES:

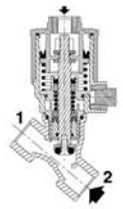
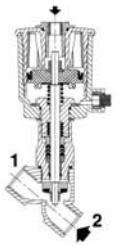
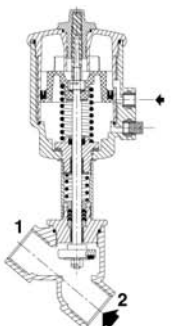
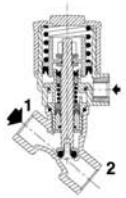
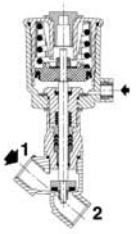
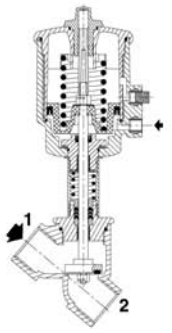
E 290 **A** 792
E 290 **B** 002 **SM2**
E 290 **A** 791 **SU**
E 290 **A** 082

pipe thread
basic number
suffix

ORDERING EXAMPLES KITS:

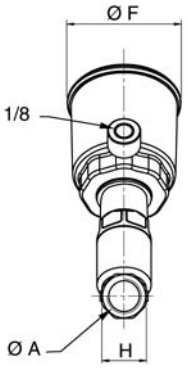
C140100
C140205
C140205 **VM**

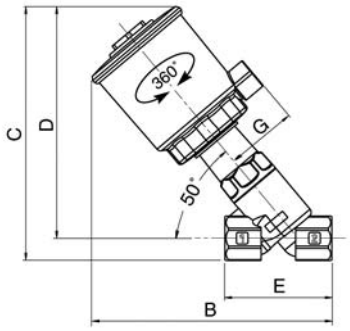
basic number
suffix

32 mm Operator	50 mm Operator	63, 90 and 125 mm Operators
NO Function		
		
NC Function, fluid entry above disc		
		

DIMENSIONS (mm)**, WEIGHT** (kg)

TYPE 01-02
32 and 50 mm operators
Fluid entry:
under the disc at 2
above the disc at 1

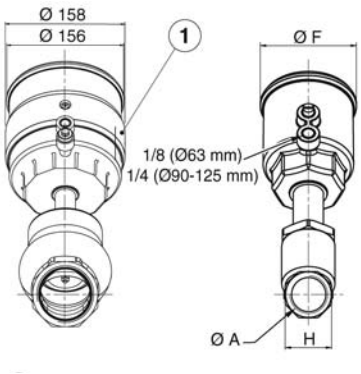


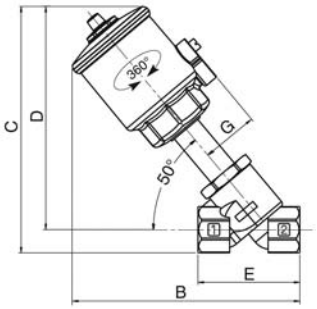


Type	Operator Diameter	Ø A	B	C	D	E	Ø F	G	Ø H	Weight (1)
01	32 mm	3/8	92	93	81.5	55	43.5	27	23.5	0.35
		1/2	99	97	83.5	65	43.5	27	28	0.4
		3/4	107	104.5	88	75	43.5	27	30	0.45
02	50 mm	1/2	142	154.5	141	65	69	43	24	0.9
		3/4	150.5	159	143	75	69	43	32	1
		1	155	165	145	90	69	43	41	1.4

(1) Weight of valve without pilot.

TYPE 03-04-05
63, 90 and 125 mm operators
Fluid entry:
under the disc at 2
above the disc at 1





① Operator dia. 125 mm, NO function

Type	Operator Diameter	Ø A	B	C	D	E	Ø F	G	Ø H	Weight (1)
03	63 mm	1	179	192	172	90	85	50.5	41	1.7
		1 1/4	217	229	204	110	85	50.5	50	2.1
		1 1/2	224	245	215	120	85	50.5	60	2.9
		2	249	259	224	150	85	50.5	70	3.7
04	90 mm	1	197	209	189	90	118	67	41	2.3
		1 1/4	236	246	221	110	118	67	50	2.7
		1 1/2	243	262	232	120	118	67	60	3.5
		2	267	276	241	150	118	67	70	4.3
		2 1/2	299	300	257	190	118	67	86	6.3
05	125 mm	1 1/4	284	298	273	110	156	86	50	5.2
		1 1/2	291	313.5	283.5	120	156	86	60	6.0
		2	315	328	293	150	156	86	70	6.8
		2 1/2	347	352	308	190	156	86	86	8.9

(1) Weight of valve without pilot, add 0.2 for dia. 125 mm operator NO.

VALVES
pressure operated
stainless steel body
CLAMP or butt welding connection
DN 10 to 65

NC
NO

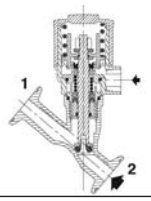
2/2
Series
S290

FEATURES
- *Valve with clamp type connection to ISO 2852 for quick disconnection, a system commonly used in the food processing industry or with butt welding connection to ISO 6761 for stainless steel pipe to ISO 1127*
- *CLAMP valve body pickled in nitric/fluoric acid bath (NET-INOX passivatio treatment)*
- *High flow due to angled seat design*
- *Anti-waterhammer design (fluid entry under the disc)*
- *Vacuum operation up to 10^{-2} bar*
- *Wide range of piston-type operators (32 - 50 - 63 - 90 - 125 mm dia.) rotatable through 360°, for maximum performance at different minimum pilot pressures*
- *High performance, maintenance-free stuffing box.*
- *The valves satisfy Pressure Equipment Directive 97/23/EC, category 1 (DN > 25) or article 3.3 (DN ≤ 25)*

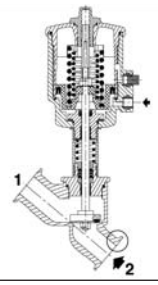
GENERAL

Differential pressure	See <<SPECIFICATIONS>> [1 bar = 10kPa]
Maximum allowable pressure	16 bar
Ambient temperature range	-10°C to +60°C
Maximum viscosity	600 cSt (mm^2/s)
Pilot fluid	Filtered air or water (1)
Max. pilot pressure	10 bar
Min. pilot pressure	As listed
Pilot fluid temperature	-10°C to +60°C
Response time	See page A11R1-27

Fluids (*)	Temperature Ranges (TS)	Sealings (*)
DN ≤ 50 : air & gas group 1 & 2 DN 65 : air & gas group 2 All DN : water, oil, liquids groups 1 & 2 and steam	-10°C to +184°C	PTFE



NC function, entry under the disc, 32 and 50 mm operators

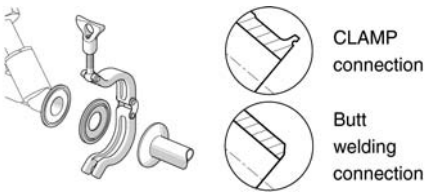


NC function, entry under the disc, 32 and 50 mm operators

MATERIALS IN CONTACT WITH FLUID
(*) Ensure that the compatibility of the fluids in contact with the materials is verified

	Stainless Steel Body	All AISI 316L
Valve body CLAMP connection Butt welding connection	 AISI 316L + NET-INOX treatment AISI 316L	 AISI 316L + NET-INOX treatment AISI 316L
Stuffing box housing	AISI 316L	AISI 316L
Stem	Stainless Steel	AISI 316L
Disc	Stainless Steel	AISI 316L
Stuffing box packing	PTFE chevrons	PTFE chevrons
Wiper seal	FPM	FPM
Disc seal	PTFE	PTFE
Valve body seal	PTFE	PTFE

"CLAMP Connection (not supplied)"



OTHER MATERIALS
Operator Glass fibre filled PA
Optical position indicator PA 12, supplied standard on valves with 63, 90 and 125 mm operators
(1) For dia. 32, 50 and 63 mm operators: At service fluid temperarures inside the valve body above 100°C, it is prohibited to pilot the valve with water.

SPECIFICATIONS

DN	O.D. of Stub (clamp) (mm)	O.D. of Stub (butt) (mm)	Flow Coefficient Kv		Pilot Pressure (bar)		Operating Pressure Diffential (bar)				Operator Diameter (mm)	Catalog Number			
							Min.	Maximum (PS)				Clamp Connection		Butt Welding Connection	
			(m^3/h)	(l/min)	Min.	Max.		Air, Inert Gas, Aggressive Fluids (*)	Water, Oil, Liquids, Aggressive Liquids (*)	Steam (*) (≤ 180°C)		Stainless Steel	All AISI 316L	Stainless Steel	All AISI 316L
NC - Normally Closed, entry under the disc (1)															
10	34	17.2	2.8	47	4	10	0	16	16	10	32	S290A800	S290A868	S290A802	S290A870
15	34	21.3	4.1	68	4			12	12	10	32	S290A804	S290A872	S290A806	S290A874
			4.9	82	4			16	16	10	50	S290A408	S290A426	S290A417	S290A432
20	50.5	26.9	6.5	108	4			6	6	6	32	S290A808	S290A876	S290A810	S290A878
			9.4	157	4			10	10	10	50	S290A409	S290A427	S290A418	S290A433

SPECIFICATIONS

DN	O.D. of Stub (clamp) (mm)	O.D. of Stub (butt) (mm)	Flow Coefficient Kv		Pilot Pressure (bar)		Operating Pressure Diffential (bar)				Operator Diameter (mm)	Catalog Number			
							Min.	Maximum (PS)				Clamp Connection		Butt Welding Connection	
			(m^3/h)	(l/min)	Min.	Max.		Air, Inert Gas, Aggressive Fluids (*)	Water, Oil, Liquids, Aggressive Liquids (*)	Steam (*) (≤ 180°C)		Stainless Steel	All AISI 316L	Stainless Steel	All AISI 316L
NC - Normally Closed, entry under the disc [1]															
25	50.5	33.7	12.8	213	4	10	0	6	6	6	50	S290A410	S290A428	S290A419	S290A434
			16.5	275	4			10	10	10	63	S290B145	S290B182	S290B211	S290B240
					4			16	16	10	90	S290B146	S290B183	S290B212	S290B241
32	64	42.4	27	450	4			6	6	6	63	S290A151	S290A188	S290A215	S290A244
					4			12	12	10	90	S290A152	S290A189	S290A216	S290A245
			29	483	4			16	16	10	125	S290A654	S290A662	S290A670	S290A678
40	64	48.3	45	750	4			4	4	4	63	S290A155	S290A192	S290A217	S290A246
					4			8	8	8	90	S290A156	S290A193	S290A218	S290A247
			48	800	4			16	16	10	125	S290A521	S290A547	S290A573	S290A599
50	77.5	60.3	59	983	4			2.5	2.5	2.5	63	S290A687	S290A749	S290A719	S290A773
					4			6	6	6	90	S290A688	S290A750	S290A720	S290A774
			66	1100	4			10	10	10	125	S290A689	S290A751	S290A721	S290A775
65	91	76.1	94	1567	4			2	2	2	90	S290A691	S290A753	S290A722	S290A776
			111	1850	4			6	6	6	125	S290A690	S290A752	-	-
NO - Normally Open, entry under the disc															
10	34	17.2	2.8	47	I X (*)	10	0	16	16	10	32	S290A812	S290A880	S290A814	S290A882
15	34	21.3	4.1	68	I X (*)			16	16	10	32	S290A816	S290A884	S290A818	S290A886
			4.9	82	I (*)			16	16	10	50	S290A411	S290A429	S290A420	S290A435
20	50.5	26.9	6.5	108	I X (*)			16	16	10	32	S290A820	S290A888	S290A822	S290A890
			9.4	157	I (*)			16	16	10	50	S290A412	S290A430	S290A421	S290A436
25	50.5	33.7	12.8	213	I (*)			16	16	10	50	S290A413	S290A431	S290A422	S290A437
32	64	42.4	27	450	II (*)			16	16	10	63	S290A164	S290A201	S290A224	S290A253
40	64	48.3	45	750	II (*)			11	11	10	63	S290A165	S290A202	S290A225	S290A254
50	77.5	60.3	59	983	II (*)			13	13	10	63	S290A693	S290A755	S290A724	S290A778
					III (*)			16	16	10	90	S290A694	S290A756	S290A725	S290A779
65	91	76.1	94	1567	III (*)			7	7	7	90	S290A695	S290A757	S290A726	S290A780
			111	1850	IV (*)			16	16	10	125	S290A696	S290A758	S290A727	S290A781
NC - Normally Closed, entry above the disc (version recommended for rapid-cycling steam applications)															
10	34	17.2	2.8	47	X (*)	10	0	10	-	10	32	S290A824	-	S290A826	-
15	34	21.3	4.1	68	X (*)			10	-	10	32	S290A828	-	S290A830	-
			4.9	82	V (*)			10	-	10	50	S290A414	-	S290A423	-
20	50.5	26.9	6.5	108	X (*)			10	-	10	32	S290A832	-	S290A834	-
			9.4	157	V (*)			10	-	10	50	S290A415	-	S290A424	-
25	50.5	33.7	12.8	213	V (*)			10	-	10	50	S290A416	-	S290A425	-
32	64	42.4	27	450	VI (*)			10	-	10	63	S290A170	-	S290A230	-
					VII (*)			10	-	10	90	S290A256	-	S290A258	-
40	64	48.3	45	750	VI (*)			10	-	10	63	S290A171	-	S290A231	-
					VII (*)			10	-	10	90	S290A257	-	S290A259	-
50	77.5	60.3	59	983	VI (*)			9	-	9	63	S290A697	-	S290A728	-
					VII (*)			10	-	10	90	S290A698	-	S290A729	-
65	91	76.1	94	1567	VII (*)			10	-	10	90	S290A699	-	S290A730	-

(*) Minimum pilot pressure varies with differential pressure see page A11R1-27.
[1] Calculation of the minimum pilot pressure at a ΔP of max. 10 bar with allowable backpressure (backpressure not recommended with liquids as waterhammer may occur).
- 32 and 50mm operators, 4 bar minimum pilot pressure version: add 2 bar to the minimum pilot pressure of chart V or X, page A11R1-27.
- 63, 90 and 125 mm operators, 4 bar minimum pilot pressure version: add 1.5 bar to the minimum pilot pressure of chart VI, VII or VIII, page A11R1-27.

OPTIONS AND ACCESSORIES

- Signaling box or compact signaling unit
- Stroke limiter for opening
- Manual safety device
- Optical position indicator on 32-50 mm operators, NC function
- Adapter plate for NAMUR pad mounting pilot (63-90-125 mm operators only)
- Oxygen service (except DN 65), pressure limited to 15 bar, temperature limited to + 60°C
- Vacuum applications up to 1.33 10^{-3} mbar
- NET-INOX passivation treatment on valve body with butt welding connection
- ATEX 94/9/EC versions for potentially explosive atmospheres

INSTALLATION

- The valves can be mounted in any position without affecting operation
- On clamp connection version: The connection stubs comply with ISO 2852.
  The strength of the quick-disconnect connection clamp must be compatible with the maximum pressure applied to the valve
- On butt welding version: Compatible with ASTM 1, 2 and 3 oils
  Butt welding connections comply with ISO 6761 and are compatible with pipe to ISO 1127
- Installation/maintenance instructions are included with each valve

SPARE PARTS KITS

DN	Spare Part Kits No.	
	Ø 32 mm	Ø 50 - 63 - 90 - 125 mm
10	C140100	-
15	C140101	C131204 (1)
20	C140102	C131205 (1)
25	-	C131206 (1)
32	-	C131207 (1)
40	-	C131208 (1)
50	-	C131209 (1)
65	-	C131622 (1)

(1) Standard suffix VM also applies to kits see page A11R1-43 to A11R1-51. - Not available.

ORDERING EXAMPLES:

S 290 **A** 804
S 290 **B** 137 **SM2**
S 290 **A** 801 **SU**
S 290 **A** 170

pipe thread
basic number
suffix

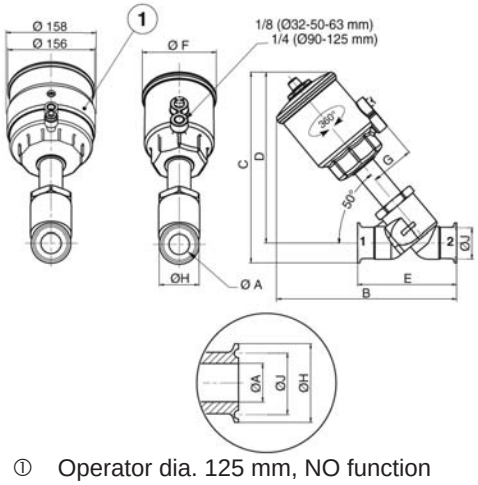
ORDERING EXAMPLES KITS:

C140100
C140205
C140205 **VM**

basic number
suffix

DIMENSIONS (mm), WEIGHT (kg)

TYPE 01-02-03-04-05
32, 50, 63, 90 and 125 mm operators
Fluid entry:
under the disc at 2
above the disc at 1



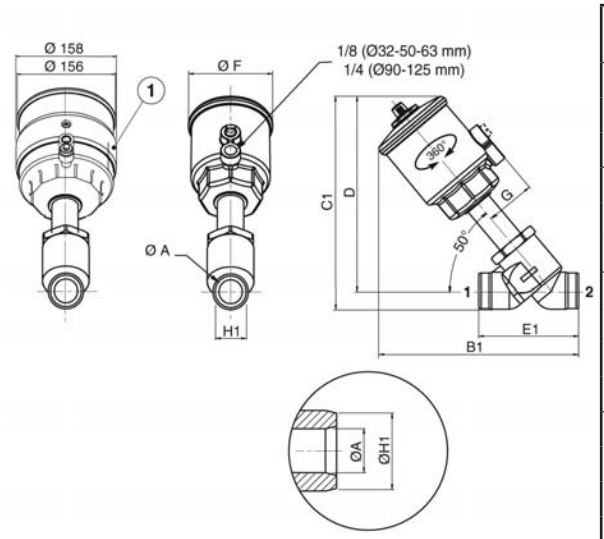
① Operator dia. 125 mm, NO function

Type	Operator Diameter	DN	Ø A	B	C	D	E	Ø F	G	Ø H	Ø J	Weight (1)
01	32	10	10	102.5	104.7	87.7	80	43.5	27	34	27.5	0.4
		15	16	110.7	105.8	88.8	101.6	43.5	27	34	27.5	0.43
		20	20	111.6	113.6	88.4	114	43.5	27	50.5	43.5	0.59
02	50	15	15.5	153	158.5	141	102	69	43	34	27.5	0.9
		20	21.5	158	168	143	114	69	43	50.5	43.5	1
		25	26	167	170.5	145	129	69	43	50.5	43.5	1.4
03	63	25	26	191	197	172	129	85	50.5	50.5	43.5	1.7
		32	35	226	236	204	140	85	50.5	64	56.5	2.1
		40	41	235	247	215	159	85	50.5	64	56.5	2.8
		50	50	257	263	224	180	85	50.5	77.5	70.5	3.7
04	90	25	26	209	214	189	129	118	67	50.5	43.5	2.2
		32	35	245	253	221	140	118	67	64	56.5	2.7
		40	41	254	264	232	159	118	67	64	56.5	3.4
		50	50	275	280	241	180	118	67	77.5	70.5	4.2
		65	65	302	302.5	257	205	118	67	91	83.5	6.2
05	125	32	35	291	307	273	140	156	86	64	56.5	5.2
		40	41	301	316	284	159	156	86	64	56.5	5.9
		50	50	322.5	332	293	180	156	86	77.5	70.5	6.7
		65	65	349.5	353.5	308	205	156	86	91	83.5	8.8

(1) Weight of valve without pilot, add 0.2 for dis. 125 mm operator NO.

DIMENSIONS (mm)**, WEIGHT** (kg)

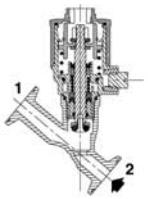
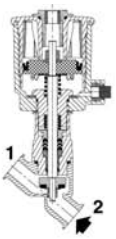
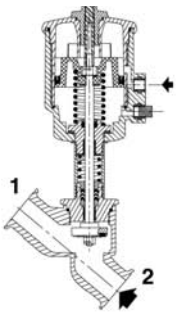
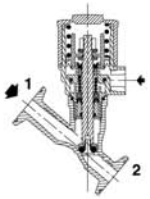
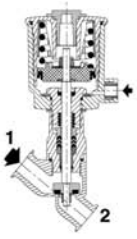
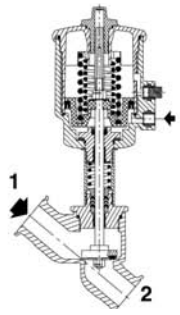
TYPE 01-02-03-04-05
32, 50, 63, 90 and 125 mm operators
Fluid entry:
under the disc at 2
above the disc at 1



① Operator dia. 125 mm, NO function

Type	Operator Diameter	DN	Ø A	B1	C1	D	E1	Ø F	G	Ø H1	Weight (1)
01	32	10	10	102.5	96.9	87.7	80	43.5	27	17.2	0.37
		15	16	101.9	100.5	88.8	84	43.5	27	21.3	0.4
		20	20	103.6	102.4	88.4	98	43.5	27	26.9	0.45
02	50	15	15.5	144	152	141	84	69	43	21.3	0.9
		20	21.5	150	157	143	98	69	43	26.9	1
		25	26	159	162	145	113	69	43	33.7	1.3
03	63	25	26	183	190	172	113	85	50.5	33.7	1.6
		32	35	218	226	204	124	85	50.5	42.4	2
		40	41	227	240	215	143	85	50.5	48.3	2.7
		50	50	249	254	224	164	85	50.5	60.3	3.6
04	90	25	26	201	207	189	113	118	67	33.7	2.1
		32	35	237	243	221	124	118	67	42.4	2.6
		40	41	246	257	232	143	118	67	48.3	3.3
		50	50	267	271	241	164	118	67	60.3	4.1
		65	65	294	295	257	189	118	67	76.1	6.1
05	125	32	35	283	295	273	124	156	86	42.4	5.1
		40	41	294	308	284	143	156	86	48.3	5.8
		50	50	314.5	323	293	164	156	86	60.3	6.7
		65	65	341.5	346	308	189	156	86	76.1	8.7

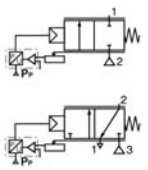
(1) Weight of valve without pilot, add 0.2 for dia. 125 mm operator NO.

32 mm Operator	50 mm Operator	63, 90 and 125 mm Operators
NO Function		
		
NC Function, entry above the disc		
		

PROPORTIONAL VALVES WITH POSITIONER[D]

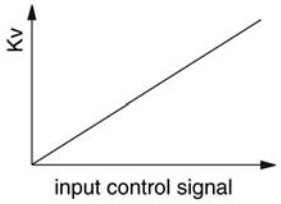
pressure operated
all standard connection

NC

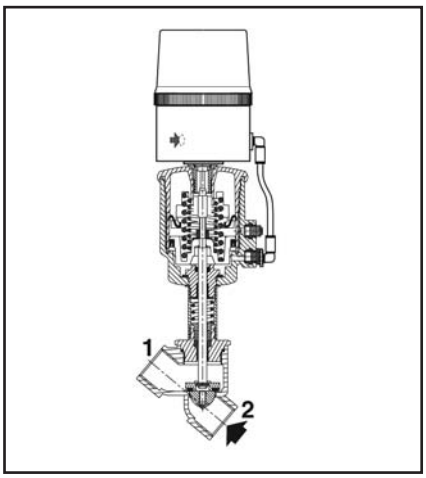


2 way
3 way
Series
290/
390

FEATURES



- *Precise, quick-acting and robust valve suitable for use in outside industrial environment*
- *Exceptional long service life*
- *Variable flow proportional to the control signal*
- *Real-time control*
- *Ready-to-use valve*
- *The positioner can be directly connected to an external sensor (double loop control)*
- *Power saving function and no air-consumption when position is reached*
- *Manual valve operator*
- *LED indicators for valve status display*



GENERAL

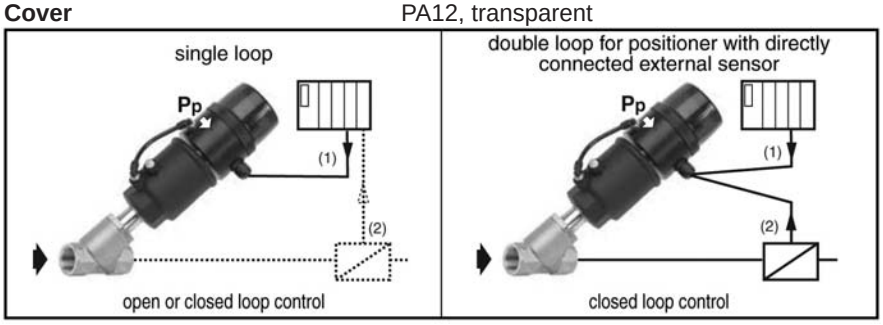
Differential pressure	0 to 16 bar [1 bar = 100kPa]
Maximum allowable pressure	16 bar
Ambient temperature range	0°C to +50°C
Maximum viscosity	600 cSt (mm^2/s)
Pilot fluid	Air or inert gas, filtered 50 µm, lubricated or not
Pilot pressure	4 to 8 bar
Pilot fluid temperature	0°C to +50°C
Response time	See page A11R1-27
Fluids	For type, temperature and materials compatibility, see the catalogs pages for the desired valves

ELECTRICAL CHARACTERISTICS

Setpoint reached output	ON / OFF, 24V PNP / max. 500 mA
Analog position feedback signal	0 - 10V / 4-20 mA
Analog setpoint	0 - 10V (R_{in} = 200kΩ) ; 4-20 mA (R_{in} = 250 Ω)
Nominal supply voltage	24VDC ± 10%, max. ripple 10%
Power	7.6W (3.6W, setpoint reach)
Connection	Screw terminals, cable gland (cable Ø 5 - 10mm) or connection M12 (CNOMO E03.62.520.N)
Degree of protection	IP66 (EN 60529)
Electromagnetic compatibility	EMC 2004/108/EC
Regulation characteristics	Hysteresis < 2%; Accuracy < 2%; Repeatability < 1%

CONSTRUCTION

Valve construction	See respective catalog pages
Valve disc (2/2)	Profiled disc, stainless steel and PTFE
Valve disc (3/2)	Standard disc
Positioner body	Aluminium, anodised
Cover	PA12, transparent



(1) Setpoint
(2) Value measured by the process sensor

SPECIFICATIONS (NC valves, fluid entry under the disc)

Analog Setpoint	Suffix For Proportional Valve and Positioner (3)							
	Fail Position Maintained (4)				Fail Close delivered assembled (5)			
	2 way		3 way		2 way		3 way	
	Cable Gland	M12	Cable Gland	M12	Cable Gland	M12	Cable Gland	M12
Postioner[D], Single Loop								
0 - 10 V DC	PDB64	PDB68	B64	B68	PDB66	PDB70	B66	B70
4 - 20 mA	PDB65	PDB69	B65	B69	PDB67	PDB71	B67	B71
Postioner[D], Double Loop								
0 - 10 V DC	-	-	-	-	PDB72	PDB74	B72	B74
4 - 20 mA	-	-	-	-	PDB73	PDB75	B73	B75

(3) Place the indicated suffix after the catalog number of the valve selected. (4) Fail position of the valve disc maintained on loss of power (5) Fail close : valve returns to closed position on loss of power

VALVE SPECIFICATIONS

Pipe Size (DN)	Orifice Size (mm)	Pilot Pressure (bar)			Operator Diameter (mm)	Flow Coefficient (Kv) Programmable Opening of Proportional Valve							
		Min.		Max		2 way, Threaded				2 way, Flanged		3 way, Threaded	
						Compact Valve (E290) (Bronze)		Bronze, Stainless Steel or All AISI 316L (E290) Clamp / Butt Welding (S290)		Bronze (T290)		Bronze (E390)	
		2 way	3 way			(m^3/h)	(l/min)	(m^3/h)	(l/min)	(m^3/h)	(l/min)	(m^3/h)	(l/min)
NC - Normally Closed, entry under the disc													
1/2 (15)	15	4	-	8	50	4.6	77	4.6	77	-	-	-	-
		-	3	8	63	-	-	-	-	-	-	6	100
3/4 (20)	20	4	-	8	50/63	7.1	118	7.1	118	-	-	-	-
		-	5	8	90	-	-	-	-	-	-	9.6	160
1 (25)	25	4	5	8	63/90	15	250	15	250	11	183	16.2	270
1 1/4 (32)	32	4	5	8	63/90	-	-	21	350	14	233	24	400
		4	-	8	125	-	-	22	367	15	250	-	-
1 1/2 (40)	40	4	5	8	63/90	-	-	29	483	21	350	42.9	715
		4	5	8	125	-	-	44	733	32	533	42.9	715
2 (50)	50	4	5	8	63/90	-	-	40	667	26.5	442	52.8	880
		4	5	8	125	-	-	66	1100	44	733	52.8	880
2 1/2 (65)	65	4	-	8	90	-	-	68	1133	-	-	-	-
		4	-	8	125	-	-	74	1233	-	-	-	-

OPTIONS AND ACCESSORIES

- Standard 2/2 NC valve, fluid entry under the disc, with profiled disc only, use suffix PD, example : E290A016PD
- Female M12 connector: Straight Right-Angle
  - 5 pins, with screw terminals, Catalog Number: 88100256 88100725
  - Supply cable 2 m, 5 x 0.25 mm^2 Catalog Number: 88100726 88100727
  - Supply cable 5 m, 6 x 0.5 mm^2 Catalog Number: 88100728 88100729
  - Supply cable 10 m, 6 x 0.5 mm^2 Catalog Number: 88100730 88100731
- APC software for modification of control parameters (software required for double loop control) available for download at : www.asconumatics.eu
- RS-232 converter, 2 m cable with 9 pin Sub-D connector for PC link, catalog number 88100732
- Oxygen service (except DN 65), pressure limited to 15 bar, temperature limited to + 60°C, suffix N
- Vacuum applications up to 1.33 10^{-3} mbar, suffix VM
- Other pipe connections are available upon request

INSTALLATION

- Pilot port G 1/8 according to ISO 228/1
- Compatible with ASTM 1, 2 and 3 oils
- Installation/maintenance instructions are included with each valve
- LED indicators for operating status display and diagnostic functions (Unit can be rotated through 360° around the centerline of the valve operator)

Electrical connection:

Positioner^{D}, single loop
screw terminals

1	+ 24VDC, supply	1
2	GND supply	3
3	+ setpoint (0-10 V or 4-20 mA)	2
4	GND setpoint	3
6	disc position feedback	4
7	+ 24V ON/OFF output	5

Positioner^{D}, double loop
screw terminals

1	+ 24VDC, supply	1
2	GND supply	3
3	+ setpoint (0-10 V or 4-20 mA)	2
4	GND setpoint	3
5	external sensor input	4
7	+ 24V ON/OFF output	5

Status	hold position
	valve OPEN
	valve CLOSED
	valve moves to open
	valve moves to close
	positioner in initialisation mode
	positioner in manual mode
Diagnostics	setpoint > 20.5 mA / 10.25 V
	setpoint < 3.5 mA
	positioner not initialised
	component error

SPARE PARTS KITS

	Spare Part Kit Nnumber Positioner[D] only	
	Cable Gland (cable Ø 5-10 mm)	**Connection M12**
Fail position maintained, single loop		
0-10 V	60568108	60569108
4-20 mA	60568308	60569308
Fail closed, single loop		
0-10 V	60568118	60569118
4-20 mA	60568318	60569318
Fail closed, double loop		
0-10 V	60568418	60569418
4-20 mA	60568518	60569518
Mounting kit		
all	C140423	C140423

ORDERING EXAMPLES:

E 290 **A** 016 **PDB64**
E 390 **A** 016 **B64**
E 290 **A** 059 **PDB68**
E 290 **A** 102 **PDB71**

pipe thread
basic number
suffix

ORDERING EXAMPLES KITS:

C131201
C140206
C140205 **VM**

basic number
suffix

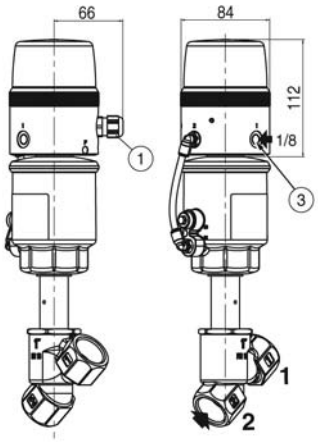
Pipe Size (DN)	Spare Parts Kit Number			
	Compact Valve (Bronze) (E290)	**Bronze, Stainless Steel or All AISI 316L (E290) Clamp / Butt Welding (S290)**	**Bronze (T290)**	**Bronze (E390)**
Valve disc seals				
1/2 (15)	C131201	C131204 (1)	-	C140021 (1)
3/4 (20)	C131202	C131205 (1)	-	C140022 (1)
1 (25)	C131203	C131206 (1)	C140017 (1)	C140023 (1)
1 1/4 (32)	-	C131207 (1)	C140018 (1)	C140024 (1)
1 1/2 (40)	-	C131208 (1)	C140019 (1)	C140025 (1)
2 (50)	-	C131209 (1)	C140020 (1)	C140026 (1)
2 1/2 (65)	-	C131622 (1)	-	-

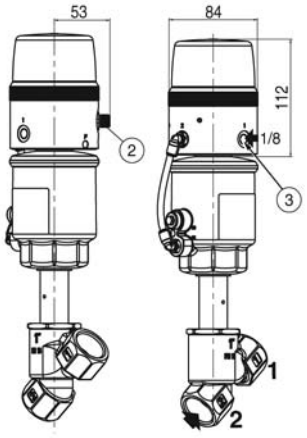
(1) Standard suffix VM also applies to kits (see page A11R1-41 to A1R1-48).
- Not available.

DIMENSIONS (mm), WEIGHT (kg)

TYPE 01
Enclosure with cable gland
50 to 125 mm operators
Fluid entry:
under the disc at 2

TYPE 02
Enclosure with M12 connection
50 to 125 mm operators
Fluid entry:
under the disc at 2





① M16 x 1.5 mm cable gland (cable Ø 5-10 mm)
② M12 connection
③ G 1/8 pilot connection

Weight of positiner without valve: 0.3kg

CHOICE OF OPTIONS AND ACCESSORIES

	Construction Type		See page				NC	NO	NC	Operator Diameter Compatibility (mm)					Body			
				A11R1-29	A11R1-33		fluid entry under the disc	fluid entry under the disc	fluid entry above the disc	32	50	63	90	125	Bronze	Stainless Steel	All AISI 316L	Cast Iron
01		Signaling box, with mechanical or inductive contacts	A11R1-43	⊞	⊓	⊐	●		●		●				✓	✓	✓	
				⊞	⊓	⊐	●	●	●			●	●	●	✓	✓	✓	✓
02		Compact signaling unit for dia. 32 mm operators, with reed switch or magneto-resistive (MR) detectors	A11R1-45	⊞	⊓	⊐	●		●	●						✓	✓	
03		Compact signaling unit for dia. 50 to 125 mm operators, with reed switch or magneto-resistive (MR) detectors	A11R1-47	⊞	⊓	⊐	●		●		●				✓	✓	✓	
				⊞	⊓	⊐	●	●	●			●	●	●	✓	✓	✓	✓
04		Stroke limiter for opening	A11R1-42	⊞	⊓	⊐	●		●		●				✓	✓	✓	
				⊞	⊓	⊐	●	●				●	●	●	✓	✓	✓	✓
05		Manual safety device	A11R1-42	⊞	⊓	⊐	●		●		●	●	●	●	✓	✓	✓	✓
06		Optical position indicator (Standard on dia. 63, 90 and 125 mm operators)	A11R1-42	⊞	⊓	⊐	●		●	●	●				✓	✓	✓	
				⊞	⊓	⊐	●	●	●			●	●	●	✓	✓	✓	✓
07		Adaptor plate for NAMUR pad-mount pilot	A11R1-42	⊞	⊓	⊐	●	●	●			●	●	●	✓	✓	✓	✓
08		Oxygen service (max. limits: 15 bar, +60oC)	A11R1-42	⊞	⊓	⊐	●	●	●	●	●	●	●	●	✓	✓	✓	
09		Vacuum applications up to 1.33 103 mbar	A11R1-42		⊓	⊐	●	●	●	●	●	●	●	●	✓	✓	✓	
10		NET-INOX treatment	A11R1-42			⊐	●	●	●	●	●	●	●	●		✓		
11		All stainless steel AISI 316L version (Recommended for aggressive environments) For valve catalog number = see catalog pages)	A11R1-42		⊓	⊐	●	●			●	●	●	●			✓	

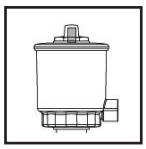
⊞ Valves with female threaded ports ⊐ Valves with butt welding connection ⊓ Valves with CLAMP connection

CONSTRUCTION 04
Stroke limiter for opening
- Fluid entry under the disc only
- Operator diameters 50 (NC), 63, 90 and 125 mm

To order (compatibility, see page 1)
- Add suffix **M**

ORDERING EXAMPLE:

E 290B005 **M**
pipe thread
basic number
suffix



CONSTRUCTION 06
Optical position indicator
- Visual indication of open or closed position of NC valves with Ø 32 or 50 mm operator (standard with dia. 63, 90 and 125 mm operators)

To order (compatibility, see page 1)
- Add suffix **VI**

ORDERING EXAMPLE:

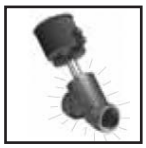
E 290B005 **VI**
pipe thread
basic number
suffix

CONSTRUCTION 08
Oxygen service
- Special grease and cleaning
- **Pressure limited to 15 bar / temperature limited to +60°C**

To order (compatibility, see page 1)
- Add suffix **N**

ORDERING EXAMPLE:

E 290B048 **N**
pipe thread
basic number
suffix

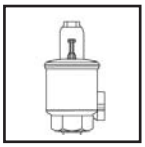


CONSTRUCTION 10
NET-INOX treatment
- Stainless steel valve body pickled in nitric hydrofluoric acid bath
- Treatment recommended for aggressive environments
- Standard on valves with CLAMP-type connections and all stainless steel AISI 316L valves

To order (compatibility, see page 1)
- Add suffix **NI**

ORDERING EXAMPLE:

E 290B048 **NI**
pipe thread
basic number
suffix



CONSTRUCTION 05
Manual safety device
- Allows opening of a de-energised valve
- For normally closed (NC) valves only

To order (compatibility, see page 1)
- Add suffix **MS**

ORDERING EXAMPLE:

E 290B005 **MS**
pipe thread
basic number
suffix

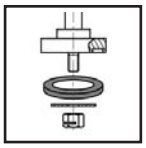
CONSTRUCTION 07
Adaptor plate for NAMUR pad-mount pilot
- Adaptable on diameter Ø 63, 90 and 125 mm operators
- Aluminium or stainless steel AISI 316L
- Solenoid pilot valves, series 551, 3/2 NC:
  - aluminium body, catalog number SCG551A001
  - stainless steel body, AISI 316L, catalog numbers SCG551A409 (1)

To order (compatibility, see page 1)
- Add suffix

aluminium	**AP1**	**(dia. 63 mm operator)**
aluminium	**AP2**	**(dia. 90 and 125 mm operator)**
stainless steel AISI 316L	**AP3**	**(dia. 63 mm operator)**
stainless steel AISI 316L	**AP4**	**(dia. 90 and 125 mm operator)**

ORDERING EXAMPLE:

E 290B005 **AP1**
pipe thread
basic number
suffix



CONSTRUCTION 09
Vacuum applications to 1.33 10^{-3} mbar
- FPM disc for use with medium vacuum

To order (compatibility, see page 1)
- Add suffix **VM**

ORDERING EXAMPLE:

E 290B005 **VM**
pipe thread
basic number
suffix

(1) Consult our <<Pilot Valves for the Process Industry>> catalog at www.asconumatics.eu

SIGNALING BOX

for series 290 and 390 valves
with mechanical, inductive contacts

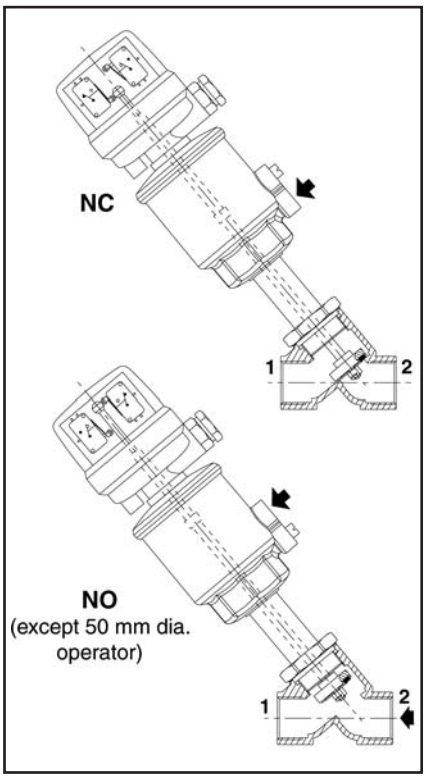
Series
885

FEATURES

- *The signaling box fits all series 290 (2/2) and 390 (3/2) valves with 50 mm (NC) and 63 to 125 mm (NC/NO) operators to indicate whether the valve is open or closed*
- *It is rotatable through 360° and equipped with two mechanical or inductive contacts*
- *The signaling box is supplied pre-installed and pre-adjusted on the valve. It can be delivered separately for on-site installation on any valve already in service*
- *The version with mechanical contacts can be used with up to max. 250V AC and in magnetic field environments.*

GENERAL / OPERATION

At both end-of-travel positions (open and closed) of the valve stem, cams on the signaling box plunger operate contacts which provide an electrical signal indicating that the end position is reached.



CONSTRUCTION

Body PA
Cover PA, transparent
Protection rating IP65
Unit can be rotated through 360° around the centreline of the valve operator (set screw)

ELECTRICAL CHARACTERISTICS

Mechanical Contacts	Inductive Contacts
Breaking capacity of contacts: • resistive circuit: 3.2 A at 250 V AC • inductive circuit: 1.8 A under 250 V AC (cos Ø= 0.8)	• 10 to 30 V DC power supply • load current 200 mA max. • built-in electrical protection

Electrical connection
mechanical contacts 1 terminal strip with 6 screw terminals
inductive contacts 2 terminal strips with 2 screw terminals
Max. grip 2.5 mm^2
Cable entry 1 cable gland (cable Ø 5-10 mm)

SPECIFICATIONS

Operator	Suffix [1] Signaling Box Supplied Installed on Valve	
	2 mechanical contacts	2 inductive contacts
Ø 50 mm (NC)	SM2	SI2
Ø 63, 90, 125 mm (NC-NO)		

[1] Add the appropriate suffix after the catalog number of the selected valve, example:
- catalog number of valve alone = E290B010
- catalog number of valve + pre-installed inductive contacts box = E290B010 SI2
The inductive contacts box is supplied installed on the valve and **pre-adjusted**.

NOTE: The signaling box can be supplied separately for on-site installation on any valve already in service, please contact your ASCO local rep.

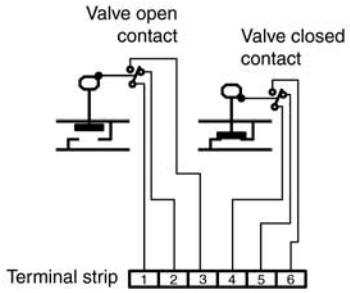
OPTIONS

• Other types of contacts: contact your ASCO local rep.

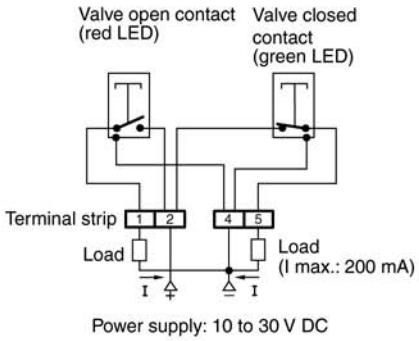
INSTALLATION

• The signaling box can be installed in any position
• Electrical connection:

Mechanical contacts



inductive contacts
(valve closed)

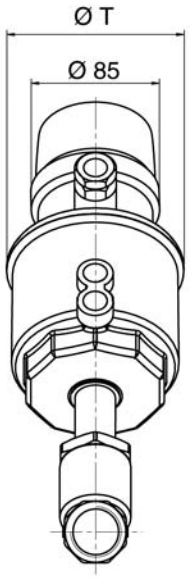


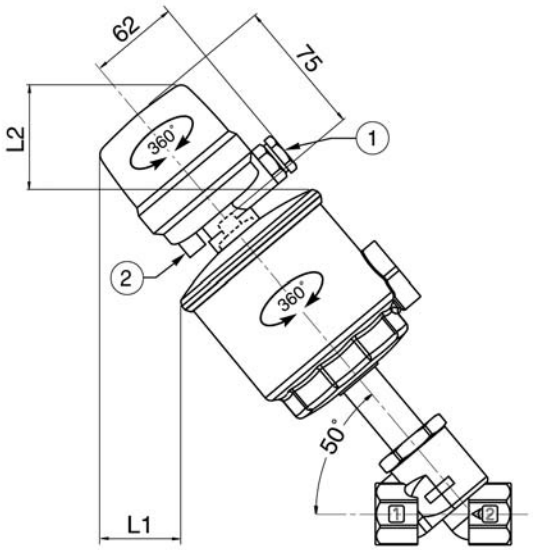
• Installation / maintenance instructions are included with each signaling box

DIMENSIONS (mm), WEIGHT (kg)

Weight of unit alone : 0.31

INSTALLATION ON SERIES 290 & 390
with dia. 50 (NC), 63, 90 or 125 mm operator



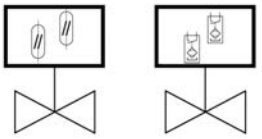


Operator Diameter	50 mm	63 mm	90 mm	125 mm
L1	60	58	46	32
L2	71	69	60	49
Ø T	65	85	118	156

① 1 Cable gland (Pg 11P)
② Unit rotation lock set screw (orientable through 360°)

COMPACT SIGNALING UNIT

for series 290 valves with 32 mm dia. operator and reed switch or magneto-resistive (MR) COMPACT-type detectors



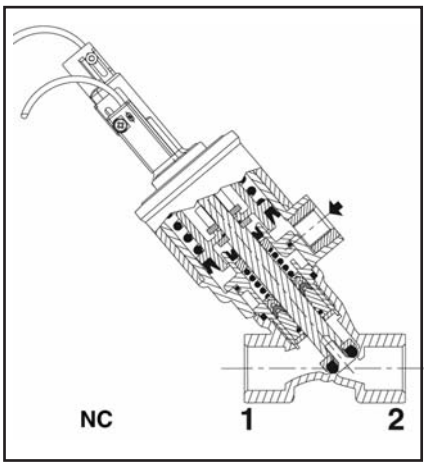
Series **881**

FEATURES

- *The compact signaling unit fits all 290 (2/2 NC) valves with 32 mm operator and electrically and visually indicates whether the valve is open or closed*
- *Due to its small size, the signaling unit fits in confined spaces*
- *Easy installation without the need of any special tools*
- *One standard detector support is suitable for both reed switch and magneto-resistive (MR) COMPACT-type detectors*

GENERAL / OPERATION

The magnet support of the compact signaling unit is attached to the stem of the valve and contains the permanent magnet. The extreme positions of the valve stem can therefore be detected by either the reed switch or the magneto-resistive detectors. **It is possible to install one or two detectors to monitor one or both extreme positions of a valve.**



CONSTRUCTION

Support PA, transparent
Detector encapsulation PA, epoxy moulded

CHARACTERISTICS	Reed switch detector	Magneto-resistive detector
Max. breaking power	10VA (AC) - 3W (DC)	3W (DC)
Switching voltage	12 to max. 30 V DC / AC	10 to 30 V DC
Max. switching current	100 mA	100 mA
Voltage drop (EN 60947-5-2)	< 2.6 V (I = 100 mA)	< 1.1 V (I = 50 mA) < 1.2 V (I = 100 mA)
Insulation resistance	2.10^{10} ohm at 500 V	2.10^{10} ohm at 500 V
Contact resistance	max. 0.1 ohm	-
Max. leakage current	-	10 µA
Max. allowable overvoltage	-	max. 40 V (10 sec.)
Dielectric strength	AC/DC = 140V	-
Sensitivity	min. 2 mTesla (20 Gauss)	min. 2 mTesla (20 Gauss)
Response time opening closing	 0.2 ms 0.5 ms	 0.2 ms 0.1 ms
Repeatability	± 0.5 mm	± 0.1 mm
Life	2.10^7 operations	5.10^7 operations
Temperature range	-25°C to +70°C	-25°C to +70°C
Degree of protection (IEC 529)	IP67	IP67
Signal indication	Yellow diode (LED) which lights up when contact is established	

CHOICE OF EQUIPMENT

Indicate when ordering a compact signaling unit:
- suffix of signaling support (delivered mounted on valve) **1**
- catalog number of detector and required quantity (depending on model) **2**

1 SIGNALING SUPPORT

Description	Suffix
• Signaling support supplied installed on valve series 290 (2/2) with 32 mm dia operator (NC only)	SU (1)

2 MAGNETIC POSITION DETECTOR

Description	(C)	Catalog Number (2)	
		Reed Switch Detector	MR Detector
• 2 m PVC cable, 0.14 mm² conductors, stripped ends	1	88144201	88144205
• 5 m PVC cable, 0.14 mm² conductors, stripped ends	1	88144202	88144206
• 0.8 m PVC cable, 3-pin M8 plug-in male connector	2	88144203	88144207
• 0.8 m PVC cable, 3-pin M8 screw-type male connector	3	88144209	88144210
• 0.8 m PUR(3) cable, 3-pin M12 screw-type male connector	4	88144204	88144208

(1) For the support alone, delivered mounted on the valve, add the suffix "SU" after the catalog number of the selected valve.
Example :
- catalog number of valve alone E290A793
- catalog number of valve + pre-installed signaling support E290A0793SU

(2) Each catalog number corresponds to one single detector.
(3) PUR cable resistant to cutting fluids.
(C) Type of construction, configuration: see following page.

TYPE OF AVAILABLE DETECTOR CONNECTIONS

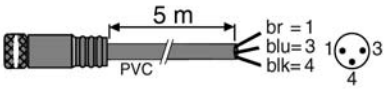
Construction **1**	Construction **2**	Construction **3**	Construction **4**
PVC lead, 2 or 5 m long, 2 wires, 0.14mm², stripped ends	0.8 m PVC lead + 3-pin plug-in male connector and Ø M8	0.8 m PVC lead + 3-pin screw-type male connector and Ø M8	0.8 m PUR lead + 3-pin screw-type male connector, Ø M12
			

INSTALLATION

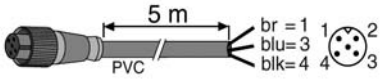
- To avoid disturbance, do not install compact signaling unit in areas with a large magnetic field
- Mounting screws and nuts for detectors are supplied with the signaling support
- Polarised magneto-resistive (MR) detector with output protected against possible short-circuits on load at an output current lower than or equal to 0.1 A. In case of inductive load, use a diode in parallel with the load
- Installation/maintenance instructions are supplied with each compact signaling unit

ACCESSORIES

- PVC extension cord, length 5 m, 3-wire conductors 0.25 mm² with 1 screw-type **female M8** connector (other end plain) (1) (2), catalog number **88100239**

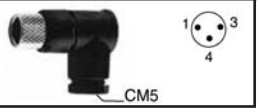


- PVC extension cord, length 5 m, 3-wire conductors 0.25 mm² with 1 screw-type **female M12** connector (other end plain) (2), catalog number **88100238**



- **Straight** 3-pin female connector Ø M8, IP67, catalog number **88100202**

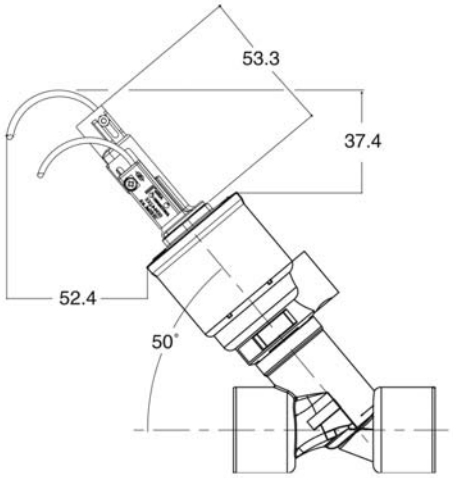
- **Right angle** 3-pin female connector Ø M8, orientable 90° x 90°, IP67, catalog number **88100203**



(1) Extension for integral M8 connector detectors. Coupling to plug-in dia. 8 male connectors is **not advised**.
(2) Detector connection
Reed switch type: brown wire and black wire (non-polarised detector), blue wire not used
Magneto-resistive type: brown wire = +, blue wire = -, black wire = load

DIMENSIONS (mm), WEIGHT (kg)

Weight of signaling support: 0.3
Weight of one single detector: 0.023 to 0.061 depending on connector configuration and cable length



COMPACT SIGNALING UNIT

for series 290/390 valves
with 50 - 125 mm dia. operator
and reed switch or magneto-resistive (MR)
UNI-type detectors

Series **881**

FEATURES

- *The compact signaling unit fits all 290 (2/2 NC) and 390 (3/2) valves with 32 mm (NC), 63 to 125 mm (NC/NO) operators and electrically and visually indicates whether the valve is open or close*
- *Due to its small size, the signaling unit fits in confined spaces*
- *Easy installation without the need of any special tools*
- *One standard detector support is suitable for both reed switch and magneto-resistive (MR) UNI-type detectors*

GENERAL / OPERATION

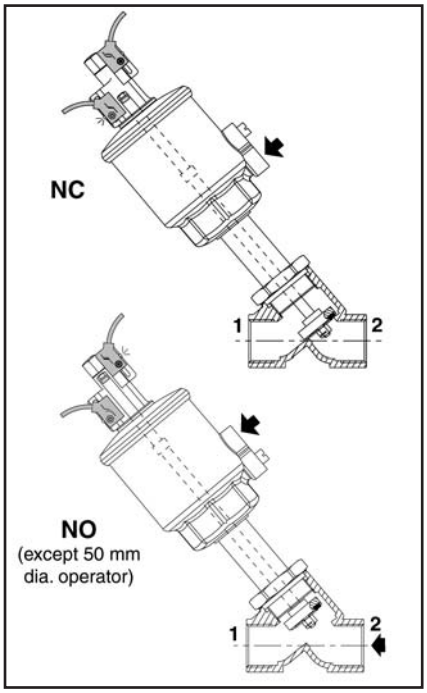
The magnet support of the compact signaling unit is attached to the stem of the valve and contains the permanent magnet. The extreme positions of the valve stem can therefore be detected by either the reed switch or the magneto-resistive detectors. **It is possible to install one or two detectors to monitor one or both extreme positions of a valve.**

CONSTRUCTION

Support PA
Detector encapsulation PPS

CHARACTERISTICS

	Reed switch detector	Magneto-resistive detector
Max. breaking power	12VA (AC) -10W (DC)	6W (DC)
Switching voltage	10 to 60 V max. (3)	10 to 30 V DC
Max. switching current	500 mA	200 mA
Voltage drop	< 2.7 V (I = 200 mA) < 2.9 V (I = 500 mA)	< 1.1 V (I = 50 mA) < 1.4 V (I = 200 mA)
Insulation resistance	10^{10} ohm	10^{10} ohm
Contact resistance	max. 0.1 ohm	-
Max. leakage current	-	10 µA
Max. allowable overvoltage	-	50 V (10 seconds)
Dielectric strength	AC = 600V - DC = 470V	-
Sensitivity	min. 3 mTesla (30 Gauss)	min. 3 mTesla (30 Gauss)
Response time opening closing	 0.2 ms 0.6 ms	 0.2 ms 0.1 ms
Repeatability	± 0.1 mm	± 0.1 mm
Life	107 operations	107 operations
Temperature range	-20°C to +70°C	-20°C to +70°C
Degree of protection	IP67	IP67
Signal indication	Green diode (LED) which lights up when contact is established	



CHOICE OF EQUIPMENT

Indicate when ordering a compact signaling unit:
• suffix of signaling support (delivered mounted on valve or alone) **1**
• catalog number of detector and required quantity (depending on model) **2**
Detectors are always delivered separately.

1 SIGNALING SUPPORT

Description	Suffix
• Signaling support **supplied installed on valve** **290 (2/2)** with dia 50 mm (NC only), 63, 90 or 125 mm (NC/NO) operator **390 (3/2)** with dia. 63, 90 or 125 mm operator	SU (1)

2 MAGNETIC POSITION DETECTOR

Description	(C)	Catalog Number (2)	
		Reed Switch Detector	MR Detector
• Integral 3-pin M8 screw-type male connector	1	88100140	88100141
• 2 m PVC cable, 0.14 mm² conductors, stripped ends	2	88100142	88100143
• 5 m PVC cable, 0.14 mm² conductors, stripped ends	2	88100144	88100145
• 0.8 m PVC cable, 3-pin M8 plug-in male connector	3	88100146	88100147
• 0.8 m PUR(3) cable, 3-pin M12 screw-type male connector	4	88100148	88100149
• 5 m PVC cable, 3-pin M8 screw-type male connector	5	88100594	88100595

(1) For the support alone, delivered mounted on the valve, add the suffix "SU" after the catalog number of the selected valve.
example :
- catalog number of valve alone E290A010
- catalog number of valve + pre-installed signaling support E290A010 SU

(2) Each catalog number corresponds to one single detector.

(3) Max. 230 V AC/DC (50 mA - 11.5 VA) version with 2 m PUR cable on request, catalog number: 88100418
(C) Type of construction, configuration: see following page.

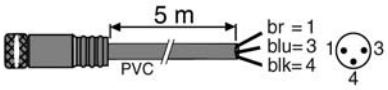
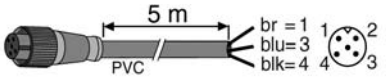
TYPE OF AVAILABLE DETECTOR CONNECTIONS

integral connector	45° cable outlet protected by grommet			
Construction **1**	Construction **2**	Construction **3**	Construction **4**	Construction **5**
3-pin screw-type male connector, **Ø M8**	PVC cable, **2 or 5 m** long, 2 or 3 wires 0.14 mm², with stripped ends	0.8 m PVC cable + 3-pin plug-in male connector, **Ø 8**	0.8 m PVC cable + 3-pin screw-type male connector, **Ø M12**	5 m PVC cable + 3-pin screw-type male connector, **Ø M8**
				

INSTALLATION

- To avoid disturbance, do not install compact signaling unit in areas with a large magnetic field
- Mounting screws and nuts for detectors are supplied with the signaling support
- Installation/maintenance instructions are supplied with each compact signaling unit

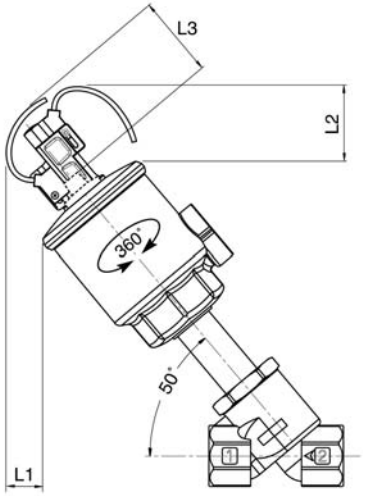
ACCESSORIES

• PVC extension cord, length 5 m, 3-wire conductors 0.25 mm² with 1 screw-type **female M8** connector (other end plain) (1) (2), catalog number **88100239**	
• PVC extension cord, length 5 m, 3-wire conductors 0.25 mm² with 1 screw-type **female M12** connector (other end plain) (2), catalog number **88100238**	
• **Straight** 3-pin female connector Ø M8, IP67, catalog number **88100202**	
• **Right** angle 3-pin female connector Ø M8, orientable 90° x 90°, IP67, catalog number **88100203**	

(1) Extension for integral M8 connector detectors. Coupling to plug-in dia. 8 male connectors is **not advised.**
(2) Detector connection
Reed switch type: brown wire and black wire (non-polarised detector), blue wire not used
Magneto-resistive type: brown wire = +, blue wire = -, black wire = load

DIMENSIONS (mm), WEIGHT (kg)

Weight of signaling support: 0.3
Weight of one single detector: 0.006 to 0.086 depending on connector configuration and cable length

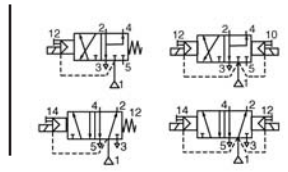


Reed switch / magneto-resistive detectors with cable entry (with or without connector)				
Operator Diameter	**50 mm (NC)**	**63 mm**	**90 mm**	**125 mm**
L1	27	20	10	0
L2	51	45	35	22
L3	59	50	50	50

Reed switch / magneto-resistive detectors with integral M8 connector				
Operator Diameter	**50 mm (NC)**	**63 mm**	**90 mm**	**125 mm**
L1	58	50	40	0
L2	81	75	65	52
L3	98	80	80	80

SOLENOID VALVES

integrated pilot operated, spool type
single / dual solenoid
aluminium body, 1/4", Namur and Threaded style



3/2 - 5/2
Series
531

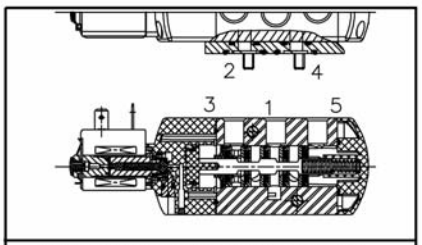
FEATURES

- *The "Namur" style spool valve have threaded port connection and Namur interface and "Threaded "style spool valve have threaded port connections*
- *All the exhaust ports of this spool valve are connectable, providing better environmental protection, particularly recommended for sensitive areas such as clean rooms, and applications in the pharmaceutical and food processing sectors*
- *The valve offers environmental protection against the ingress of liquids, dusts or any other foreign matter (environmentally-protected construction)*
- *The solenoid valves satisfy all relevant EC Directives*

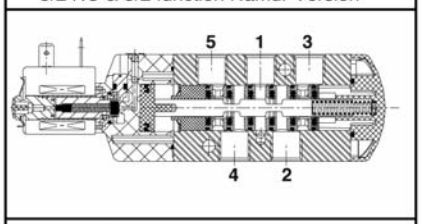
GENERAL

Differential pressure 2 - 10 bar [1 bar = 100 kPa]
Flow (Qv at 6 bar) 1100 l/min (ANR)

Fluids (*)	Temperature Ranges (TS)	Seal Materials (*)
air, inert gas, filtered	- 10°C to +60°C	NBR (nitrile) + PUR (polyurethane)



3/2 NC & 5/2 function Namur Version



5/2 function Threaded Version

MATERIALS IN CONTACT WITH FLUID

(*) Ensure that the compatibility of the fluids in contact with the materials is verified

Body Aluminium, black anodized
End cover (spring) Glass-filled PA
Internal parts Zamak, stainless steel, (POM), aluminium
Seals NBR+PUR
Core and plugnut Stainless steel
Shading coil Copper

SPECIFICATIONS

Pipe Size	Orifice Size	Flow Coefficient (Kv)		Operating Pressure Differential (bar)			Power Level	Prefix Optional Solenoids		Catalog Number
				Min.	Maximum (PS)			ATEX / IECEX / NEPSI	IP 65	
					Air			Ex m		
(G)	(mm)	(m^3/h)	(l/min)		AC	DC	AC / DC	PV	SC	
NAMUR 3/2 NC - 5/2 - Solenoid air pilot operated - spring return (Single Solenoid)										
1/4	6	0.95	15.5	2	10	10	2.5W	-	●	G531D001 MS
1/4	6	0.95	15.5	2	10	10	4W	●	-	G531D001 MS
NAMUR 3/2 NC - 5/2 - Solenoid air pilot operated - spring return (Double Solenoid)										
1/4	6	0.95	15.5	2	10	10	2.5W	-	●	G531D002 MS
1/4	6	0.95	15.5	2	10	10	4W	●	-	G531D002 MS
THREADED 5/2 - Solenoid air pilot operated - spring return (Single Solenoid)										
1/4	6	0.95	15.5	2	10	10	2.5W	-	●	G531B017 MS
1/4	6	0.95	15.5	2	10	10	4W	●	-	G531B017 MS
THREADED 5/2 - Solenoid air pilot operated - spring return (Double Solenoid)										
1/4	6	0.95	15.5	2	10	10	2.5W	-	●	G531B018 MS
1/4	6	0.95	15.5	2	10	10	4W	●	-	G531B018 MS

RP - Reduced Power, MP - Medium Power

● Available feature - Not available

ORDERING EXAMPLES:

SC	G	531	D001	MS	230V/50Hz
SC	G	531	D002	MS	230V/50Hz
PV	G	531	B017	MS	24V/DC
PV	G	531	B018	MO	24V/DC

pipe thread
basic number
suffix

EXPLANATION OF TEMPERATURE RANGES OF SOLENOID VALVES

Valve temperature range The valve temperature range is determined by the selected seal material, the temperature range for proper operation of the valve and sometimes by the fluid (e.g. steam)

Operator ambient temperature range The operator ambient temperature range is determined by the selected power level (LP, RP, MP or BP) and the ATEX safety code

Total temperature range The temperature range of the complete solenoid valve is determined by the limitations of both temperature range above

ELECTRICAL CHARACTERISTICS

Coil insulation class F
Electrical safety IEC 335
Standard voltages DC 24V - 48V
AC 24V - 48V - 115V - 230V/50Hz; other voltages and 60Hz are available on request

Prefix Option	Power Rating				Operator Ambient Temperature Range (TS) °C	Safety Code	Electrical Enclosure Protection (EN60529)	Replacement Coil		Type [1]
	Inrush AC	Holding AC		Hot / Cold DC				AC	DC	
	(VA)	(VA)	(W)	(W)	AC / DC			230V/50Hz	24 VDC	
Medium Power (MP)										
PV	9	5	4	3.5/4.0	-40 to +60	IECEx / Ex II 2 G Ex mb II T6.. T3	Moulded IP67	- [2]	- [2]	02 / 04
						IECEx / Ex II 2 Ex mD 21 IP67 T85 .. T200				
						NEPSI Ex mb II T3 - T5				
Reduced Power (RP)										
SC	6	3.5	2.5	2.5/3.0	-10 to +60	EN60730	Moulded IP65	43005428	43005412	01 / 03

[1] Refer to the dimensional drawings [2] Multiple coil kits available under ATEX, contact your ASCO local rep

ELECTRICAL CONNECTIONS

Prefix	Connection
SC	Spade plug connector with cable gland DIN 43650, 11 mm, industry standard B, for cables with an outer diameter from 6 to 8 mm (type 01)
PV	Moulded – in cable, standard length 2 m (type 02)

ADDITIONAL OPTIONS

- Other pipe threads are available on request
- Plug with visual indication and peak voltage suppression or with cable length of 2m, SC prefix only
- H class coil available upon request, SC prefix only
- EEx m (prefix "PV") execution can be supplied in various cable lengths

INSTALLATION

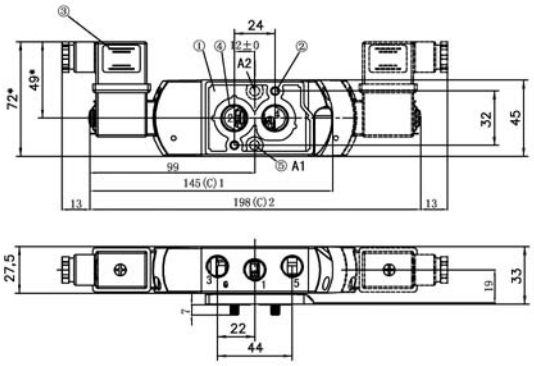
- Installation/maintenance instructions are included with each valve
- The solenoid valves can be mounted in any position without affecting operation
- Spool valve supplied with two interface plates with NAMUR mating surfaces. Depending on function (NC 3/2 or 5/2), positionone of the two plates on the spool valve body before installing on actuator
- It is necessary to connect pipes or fittings to the exhaust ports to protect the internal parts of the spool valve and its pneumatic operator if used outside or in harsh environments (dusts, liquids etc.)
- Dowel pin (if necessary), bolts and gaskets are standard supplied
- Threaded pipe connection identifier is: 8 = NPT (ANSI 1.20.3); G = G (ISO 228/1)

DIMENSIONS (mm), WEIGHT (kg)

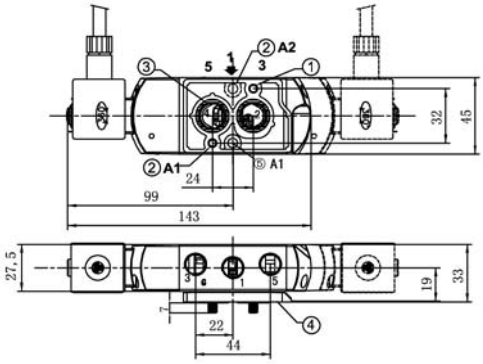
SERIES 531 NAMUR 3/2 - 5/2 WAY

TYPE 01: Prefix SC
Moulded IP65
Reduced power
IEC 335 / DIN 43650
G531D001 MS / G531D002 MS

TYPE 02: Prefix PV
IECEx / Ex II 2 G Ex mb II T6 .. T3
IECEx / Ex II 2 Ex mD 21 IP67 T85 .. T200
NEPSI Ex mb II T3 – T5
Medium power
Epoxy moulded
EN60079-18 and EN 61241-18
G531D001 MS / G531D002 MS



(C)1 : monostable
(C)2 : bistable
Port 1 , 3 and 5 : G1/4

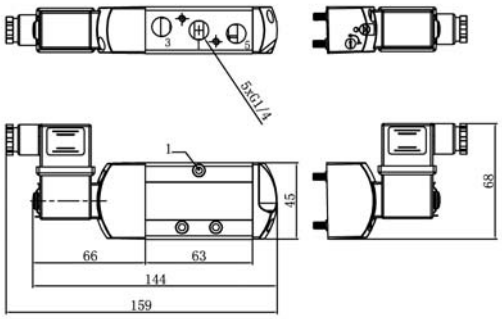


1. EM5 SOLENOID
2. 3 mounting holes 4.2 mm

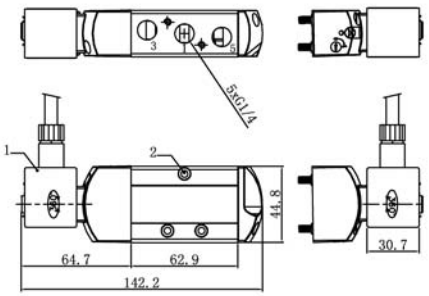
SERIES 531 THREADED 5/2 WAY

TYPE 03: Prefix SC
Moulded IP65
Reduced power
IEC 335 / DIN 43650
G531B017 MS / G531B018 MS

TYPE 04: Prefix PV
IECEx / Ex II 2 G Ex mb II T6 .. T3
IECEx / Ex II 2 Ex mD 21 IP67 T85 .. T200
NEPSI Ex mb II T3 – T5
Medium power
Epoxy moulded
EN60079-18 and EN 61241-18
G531B017 MS / G531B018 MS



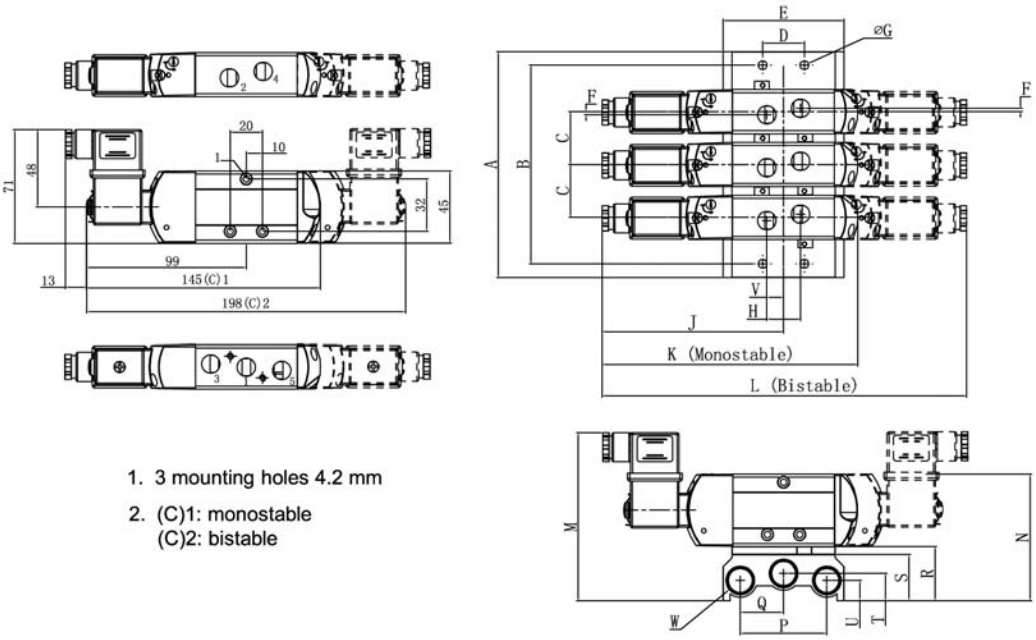
1. 3 mounting holes 4.2 mm



2 mounting holes:
① 5.3 mm dia. (Spotfacing : 9 mm dia., depth 5 mm
② One 5 mm dia hole for dowel pin:
- in position A1 : 3/2 NC function plate
- in position A2 : 5/2 function plate
③ 2 O-ring seals (supplied)
④ Interface plate

DIMENSIONS (mm), WEIGHT (kg)

SERIES 531 THREADED 5/2 WAY (MANIFOLD ASSEMBLY)



1. 3 mounting holes 4.2 mm
2. (C)1: monostable
   (C)2: bistable

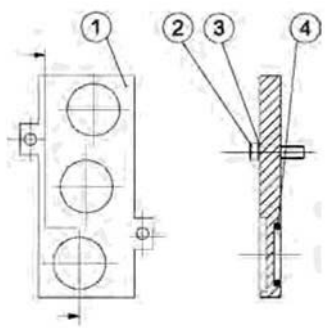
DIMENSIONS (mm)

A	See chart below	**M**	105.5
B	See chart below	**N**	78
C	33	**P**	54
D	26	**Q**	27
E	75	**R**	33.5
F	2	**S**	28.5
G	5.5	**T**	17
H	20.5	**U**	12.5
J	112	**V**	10.25
K	145	**W**	G 3/8
L	198		

Manifold of Stations	DIM A	DIM B	Part Number
2 stations	107	90	M531-1-2-P
3 stations	140	123	M531-1-3-P
4 stations	173	156	M531-1-4-P
5 stations	206	189	M531-1-5-P
6 stations	239	222	M531-1-6-P
7 stations	272	255	M531-1-7-P

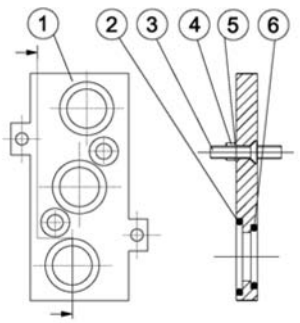
Manifold of Stations	DIM A	DIM B	Part Number
8 stations	305	288	M531-1-8-P
9 stations	338	321	M531-1-9-P
10 stations	371	354	M531-1-10-P
11 stations	404	387	M531-1-11-P
12 stations	437	40	M531-1-12-P
Adaptor Kit	**SJ200115**		

BLANK STATION PLATE KIT SJ200116



DET. No.	No. Required	Part Name
1	1	Blank Station Plate
2	2	Screw
3	2	Lockwasher
4	3	O-ring

ADAPTOR KIT SJ200115



DET. No.	No. Required	Part Name
1	2	Adaptor
2	2	O-ring
3	2	Screw
4	2	Screw
5	2	Lockwasher
6	3	O-ring

FEATURES

• Two types of connectors (types 22 and 30) fitting the moulded coils of the following ASCO/JOUCOMATIC solenoid valves:

Connector Type	Standard	Compatible Coils
22	spade plug connection coil: 3 x DIN 46244	CM5 - CM22
30	ISO 4400	CM6 - CMXX - CM12 - CM25 - CM30 - CM40

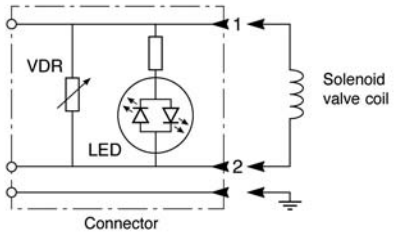
These connectors are available in three versions:
- *standard*
- *with a three-core 2 m cable*
- *with a integrated electrical power indication and protection*

The type 30 connector has a removable upper lid allowing access to the wiring for easy checking of the electrical power supply **without unplugging** the connector, and hence **without interrupting operation** of the solenoid valve (see next page)

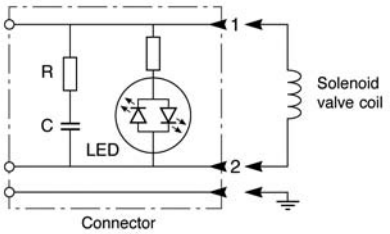
ELECTRICAL CHARACTERISTICS

	type 22	type 30
Number of contacts	2 + earth	2 + earth
Cable entry	Pg 9P	Pg 11P
Cable diameter		
- standard version	6 to 8 mm	6 to 10 mm
- Led version	6 to 8 mm	8 to 10 mm
Protection rating	IP65	IP65
Cable connection	screw	screw
Max. core cross-sectional area	1.5 mm²	1.5 mm²

Electrical indication and protection diagram



VDR - Varistor absorbing the self-inductance of the coil
LED - Green light-emitting diode, bidirectional, signaling the presence of voltage across the coil terminals



RC - RC circuit absorbing the self-inductance of the coil
LED - Green light-emitting diode, bidirectional, signaling the presence of voltage across the coil terminals

CONFIGURATION OF TYPES 22 AND 30

Housing with or without cover

• standard version	Glass fibre reinforced polyamide (PA + FG)
• version with cable	Lead moulded onto polyamide connector
• with indication + protection	Transparent polyamide (PA)
Connectors	removable
Electrical safety	VDE 0580

SPECIFICATIONS

Description		(C)	Catalog Number	
			Type 22	Type 30
Standard connector		1	881 22 404	881 22 602
Connector with 2 m lead (not rotatable)		2	881 22 413	881 22 612
Connectors with integrated electrical indication and protection	12V DC/AC (50/60Hz)	1	-	881 22 611
	24V DC/AC (50/60Hz)		881 22 405	881 22 603
	48V DC/AC (50/60Hz)		881 22 406	881 22 604
	115V DC/AC (50/60Hz)		881 22 407	881 22 605
	230V DC/AC (50/60Hz)		881 22 410	881 22 608
Standard connector with silicon seal (VMQ)		1	-	881 22 625 (*)

(*) For use within the Class H temperature limits
Note: For connectors > 250 V - AC / 300 V - DC, consult ASCO local rep.

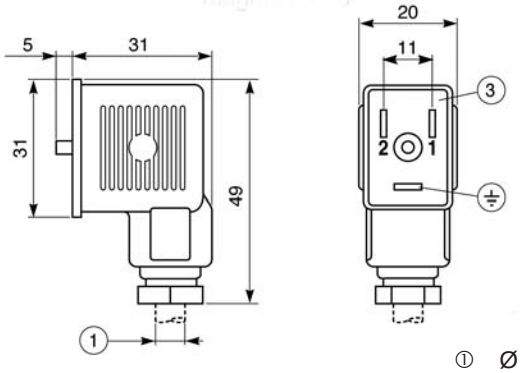
DIMENSIONS (mm)**, WEIGHT** (kg)

Standard connectors and connectors with indicators have the same dimensions

Construction 1

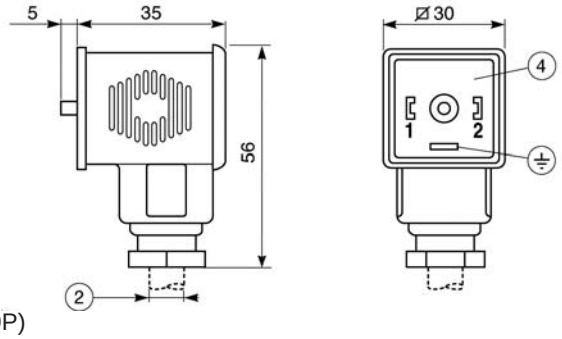
type 22

Weight: 0.02



type 30

Weight: 0.03

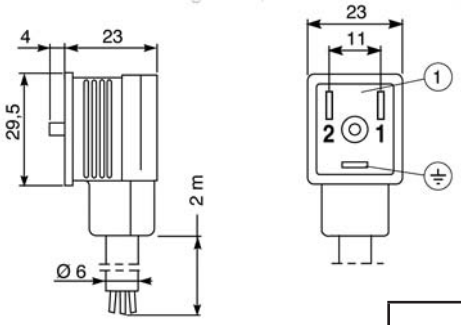


① Ø 8 mm (Pg 9P)
② Ø 6 to 10 mm (Pg 11P)
③ Terminal blade rotable through 180° x 180°
④ Terminal blade rotable through 90° x 90°

Construction 2

type 22

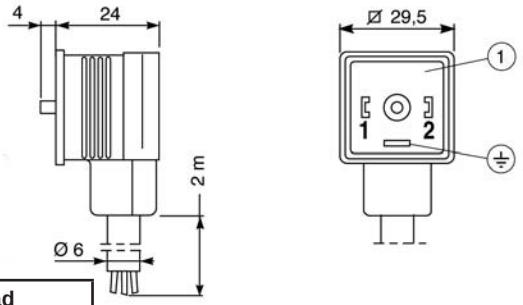
Weight: 0.155



type 30

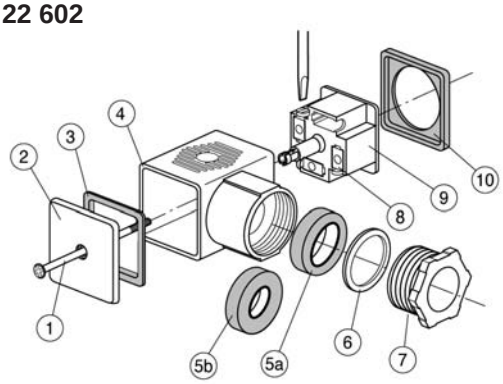
Weight: 0.155

① **Non-rotatable** connector



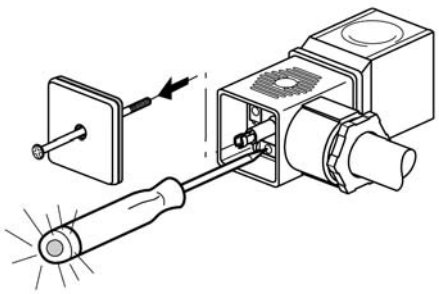
connectors with lead		
brown wire	:	terminal 1 (+)
blue wire :	:	teriminal 2 (-)
green/yellow wire	:	earth

FITTING TO A TYPE 30 STANDARD CONNECTOR : 881 22 602



① Fastening screw
② Cover
③ Cover Seal
④ Housing
⑤ Connector with 2 seals for:
8 to 10 mm diameter cable (5a)
or 6 to 8 mm cable 5(b)
⑥ Washer
⑦ Packing nut
⑧ Cable connection terminal
⑨ Terminal blade
⑩ Connector seal

CHECKING POWER UP

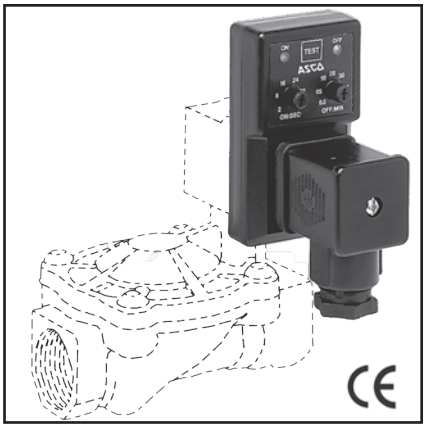


Easy checking of power supply to the coil without unplugging the connector and hence **without interrupting operation** of the solenoid.

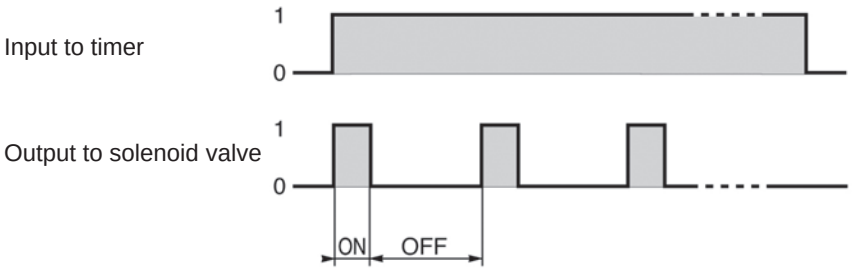
ELECTRONIC TIMER
adjustable pulse generator
suitable for solenoid valves

Series **881**

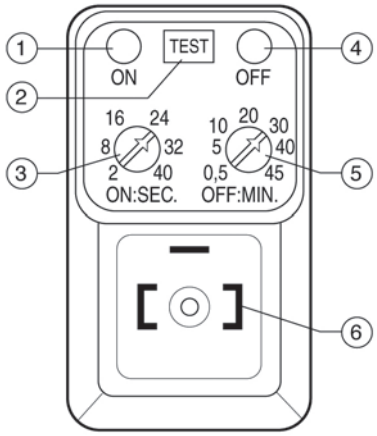
FEATURES
- *This electronic timer, which generates adjustable pulses, is particularly suited for automatic control of draining of an air dryer or compressor as, when energised, it can initiate operation of the solenoid valve for the time necessary for draining condensates at regular adjustable intervals*
- *Other applications include irrigation, air blasting etc.*
- *Fits directly to any solenoid valve with standardised ISO 4400 / DIN connection, between coil and power connector*



GENERAL / OPERATION
Converts a continuous power input into a succession of on-periods (ON), adjustable between 0.5 to 10 seconds and off-periods (OFF), adjustable between 0.5 to 45 minutes.



ON: adjustable between 0.5 and 10 seconds
OFF: adjustable between 0.5 and 45 minutes



① "Solenoid valve energised" light
② Test button
③ Adjust on-period (ON)
④ "Solenoid valve de-energised" light
⑤ Adjust off-period (OFF)
⑥ ISO 4400 pin input connection

CONSTRUCTION
Housing [1]	ABS Plastic
Electrical connection	2 pins + earth to ISO 4400 for use with a connector to ISO 4400 (connector not supplied)

ELECTRICAL CHARACTERISTICS
Standard voltages	24 V to 240 V DC or AC (50/60 Hz)
Consumption	4 mA max.
Repeatability	± 0.1%
Scale accuracy	± 10%

Electrical Connection	Maximum Power (I max. = 1A)	Ambient Temperature Range (°C)	Protection Degree
ISO 4400	24 VA (with 24 V) to 240 VA (with 240 V)	-20 to +60	IP65

SPECIFICATIONS

Description	Catalog Number
Electronic timer with auxiliary manual control for solenoid valve with ISO 4400 pin coil	881 22 627 - 30

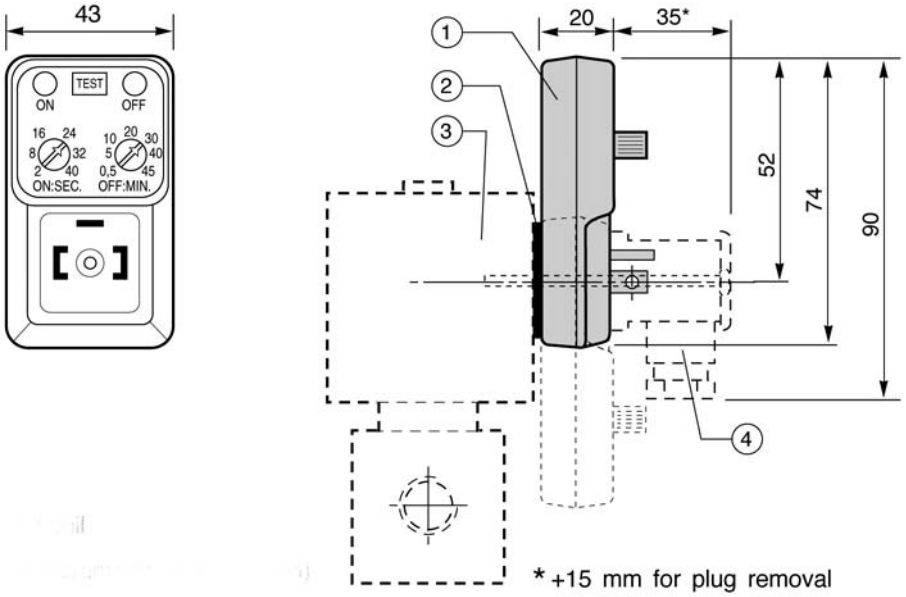
[1] The pin arrangement of the timer enables rotation by increments of 180°C in relation to the solenoid valve to which it is connected.

INSTALLATION

- If the width of the solenoid valve permits, the timer can be rotated about the connection axis by 180° increments
- Take care to fit properly the coil/timer seal and the connector seal
- Observe maximum power rating
- ISO 4400 connection

DIMENSIONS (mm), WEIGHT (kg)

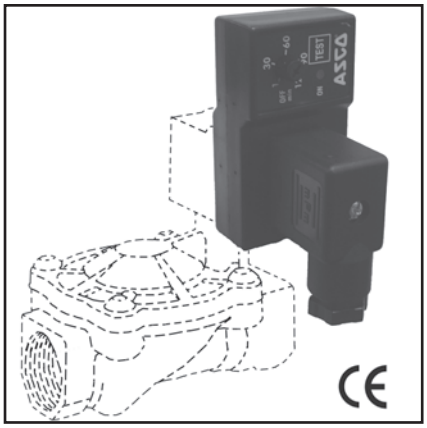
Weight: 0.056 (without connector)



① Timer rotatable by 180° increments
② Seal
③ Solenoid valve with ISO 4400 standardised pin coil
④ ISO 4400 connector, Pg 11P, rotatable by 90° increments (not supplied)

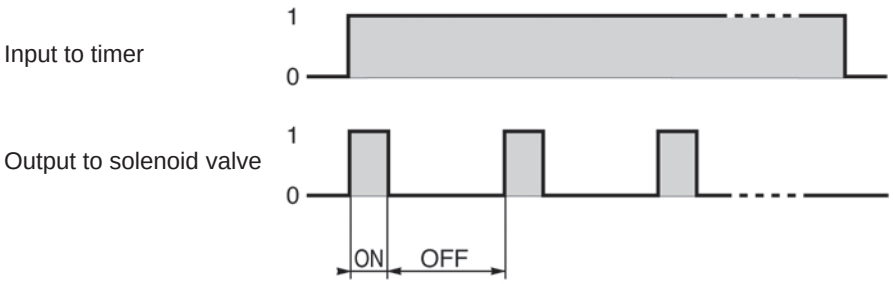
ELECTRONIC TIMER
adjustable pulse generator
suitable for solenoid valves

Series **881**

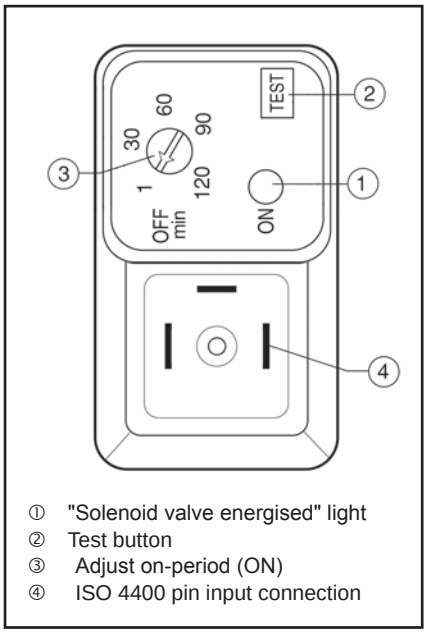


FEATURES
- *This electronic timer, which generates adjustable pulses, is particularly suited for automatic control of draining of an air dryer or compressor as, when energised, it can initiate operation of the solenoid valve for the time necessary for draining condensates at regular adjustable intervals*
- *Other applications include irrigation, air blasting etc.*
- *Fits directly to any solenoid valve with standardised DIN 46244 connection, between coil and power connector*

GENERAL / OPERATION
Converts a continuous power input into a succession of on-periods (ON), 2 to 8 seconds and off-periods (OFF), adjustable between 1 to 120 minutes.



ON: fixed 2 and 8 seconds
OFF: adjustable between 1 to 120 minutes



① "Solenoid valve energised" light
② Test button
③ Adjust on-period (ON)
④ ISO 4400 pin input connection

CONSTRUCTION
Housing [1]	ABS Plastic
Electrical connection	2 pins + earth to DIN 46244 for use with a connector to DIN 46244 (connector not supplied)

ELECTRICAL CHARACTERISTICS
Standard voltages	24 V to 240 V DC or AC (50/60 Hz)
Consumption	4 mA max.
Repeatability	± 0.1%
Scale accuracy	± 10%

Electrical Connection	Maximum Power (I max. = 1A)	Ambient Temperature Range (°C)	Protection Degree
DIN 46244	24 VA (with 24 V) to 240 VA (with 240 V)	-20 to +60	IP65

SPECIFICATIONS
Description	Catalog Number
Electronic timer with auxiliary manual control for solenoid valve with DIN 46244 pin coil	881 22 627 - 22 - 2 [2]
	881 22 627 - 22 - 8 [3]

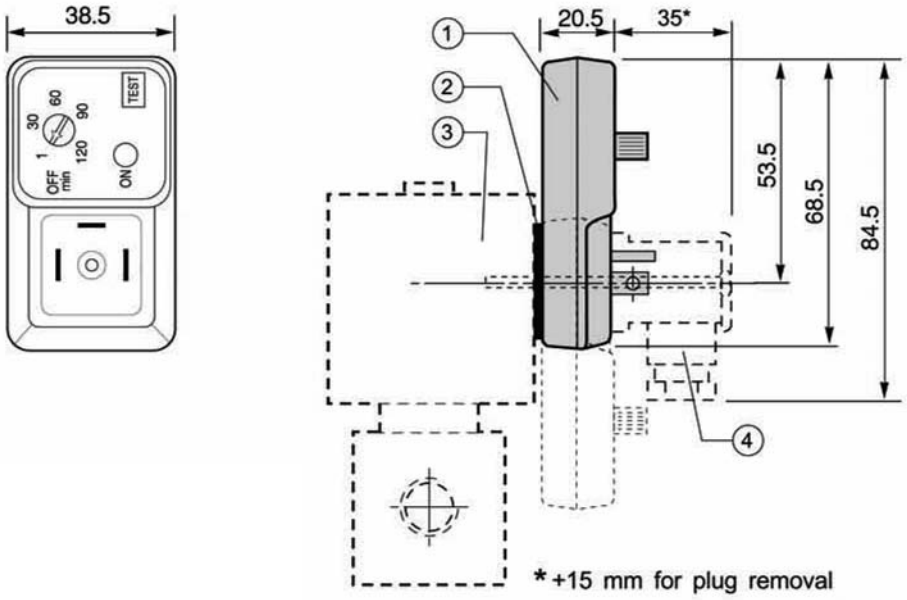
[1] The pin arrangement of the timer enables rotation by increments of 180°C in relation to the solenoid valve to which it is connected.
[2] Timer with 2 seconds on time.
[3] Timer with 8 seconds on time.

INSTALLATION

- If the width of the solenoid valve permits, the timer can be rotated about the connection axis by 180° increments
- Take care to fit properly the coil / timer seal and the connector seal
- Observe maximum power rating
- DIN 46244 connection

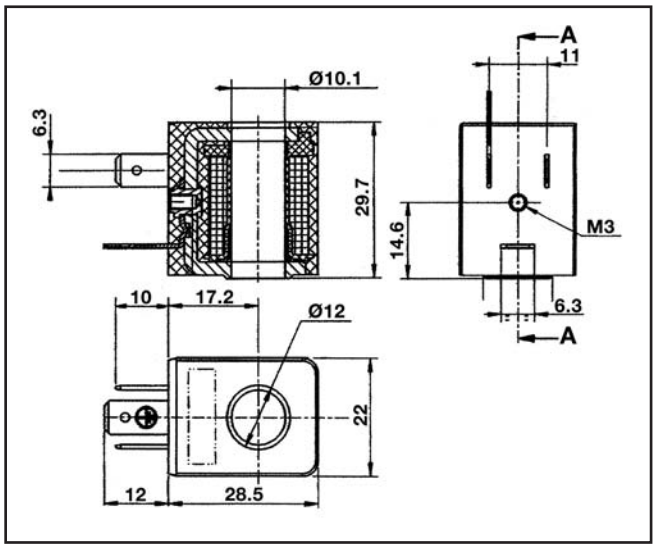
DIMENSIONS (mm), WEIGHT (kg)

Weight: 0.041 (without connector)



① Timer rotatable by 180° increments
② Seal
③ Solenoid valve with DIN 46244 standardised pin coil
④ DIN 46244 connector, Pg 11P, rotatable by 90° increments (not supplied)

Size C22A Coil - 4W & 2.5W



Construction: rated for continuous duty. Class H copper wire, moulded in polyethylene terephtalate.

Ambient Temperature: -10°C to + 60°C

Insulation Class: F (155°C)
H (180°c) - Optimal

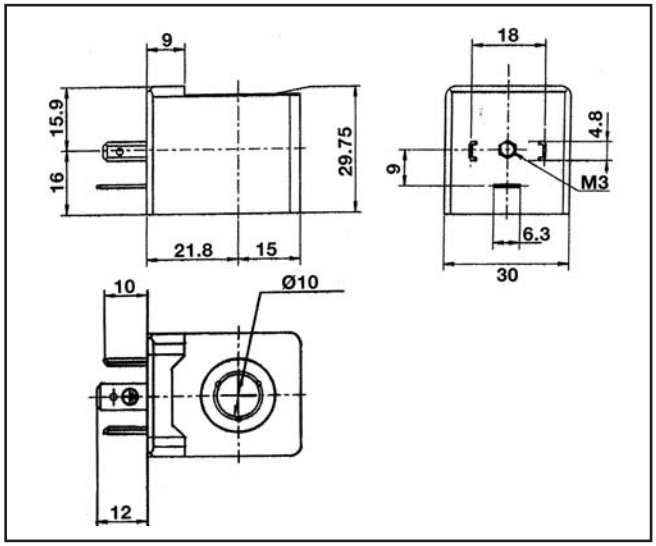
Protection: IP65 to EN60529, when fitted with connector

Electric Connections: Spade terminal for DIN 43650, 11mm connector plug (Pg 9P)

Wattages: AC - 4 watts / 12 VA inrush, DC - 5.5 watts
Wattages: AC - 2.5 watts / 6 VA inrush, DC - 2.5 watts

Standard Voltages	4W Coil Part Number	2.5W Coil Part Number
24/50-60	430 05 421	430 05 420
120/60	430 05 427	430 05 424
115/50	430 05 425	430 05 424
230/50-60	430 05 429	430 05 428
24/DC	430 05 413	430 05 412

Size C25A Coil



Construction: rated for continuous duty. Class H copper wire, moulded in polyethylene terephtalate.

Ambient Temperature: -10°C to + 60°C

Insulation Class: F (155°C)

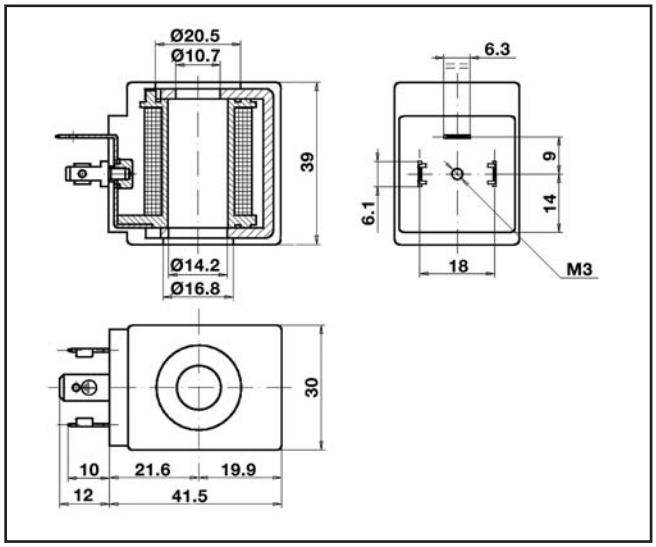
Protection: IP65 to EN60529, when fitted with connector

Electric Connections: Spade terminal for ISO 4400 connector plug (Pg 11P)

Wattages: AC - 3.5 watts / 10.4 VA inrush, DC - 7 watts

Standard Voltages	Coil Part Number
115/50 - 120/60	430 05 537
230/50-60	430 05 540
24/DC	430 05 533

Size ANX Coil



Construction: rated for continuous duty. Class H copper wire, moulded in polyethylene terephtalate.

Ambient Temperature: -10°C to + 60°C

Insulation Class: F (155°C)

Protection: IP65 to EN60529, when fitted with connector

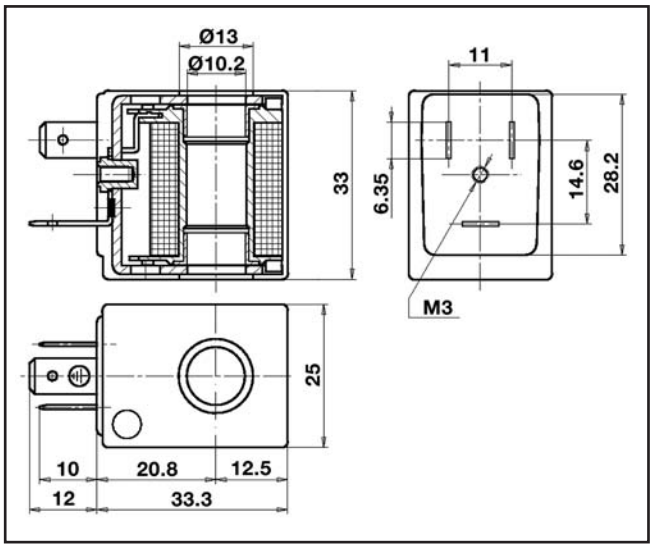
Electric Connections: Spade terminal for ISO 4400 connector plug (Pg 11P)

Wattages: AC - 9 watts / 23 VA inrush, DC - 7.5 watts

Standard Voltages	Coil Part Number
24/50	430 05 273
115/50	430 05 274
230/50	430 05 275
24/DC	430 05 272

COILS
Size BMX, MXX, M6

Size BMX Coil - H Class



Construction: rated for continuous duty. Class H copper wire, moulded in thermoplastic.

Ambient Temperature: -10°C to +80°C

Insulation Class: H (180°C)

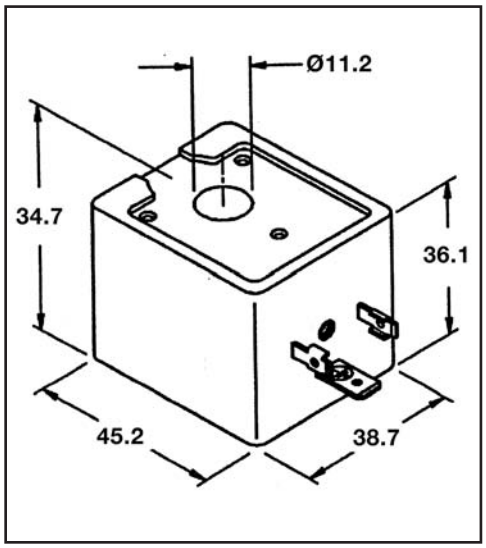
Protection: IP65 to EN60529, when fitted with connector

Electric Connections: Spade terminal for DIN 43650, 11mm connector plug (Pg 9P)

Wattages: AC - 6 watts / 16 VA inrush, DC - 6 watts

Standard Voltages	Coil Part Number
24/50	430 05 168
115/50	430 05 169
120/50	430 05 170
230/50	430 05 171
240/60	430 05 315
24/DC	430 05 166

Size M6 FT & FB Coil



Construction: rated for continuous duty. Class H copper wire, moulded in epoxy.

Ambient Temperature (FT): -20°C to +75°C
Ambient Temperature (FB): -20°C to +50°C

Insulation Class: F (155°C)

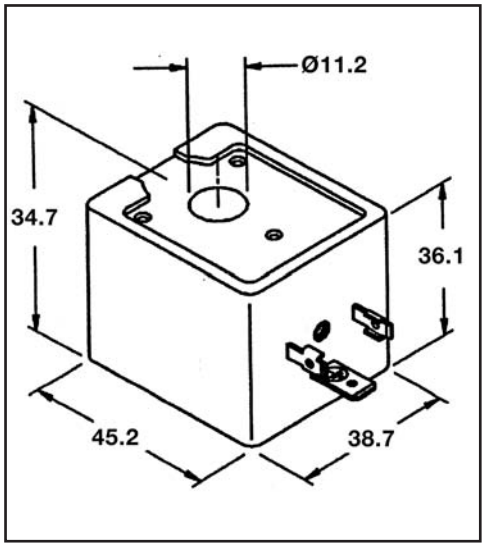
Protection: IP65 to EN60529, when fitted with connector

Electric Connections: Spade terminal for ISO 4400 connector plug (Pg 11P)

Wattages (FT): AC - 6 watts / 34 VA inrush
Wattages (FB): AC - 9 watts / 30 VA inrush, DC - 9.5 watts

Standard Voltages	FT Coil Part Number	FB Coil Part Number
24/50	400325-101	400325-201
110/50, 120/60	400325-125	400325-225
115/50	400325-118	400325-218
220/50, 240/60	400325-128	400325-228
230/50	400325-117	400325-217
24/DC	-	400325-242

Size MXX FT, HT & HB Coil



Construction: rated for continuous duty. Class H copper wire, moulded in epoxy.

Ambient Temperature (FT): -20°C to +75°C
Ambient Temperature (HT): -20°C to +100°C
Ambient Temperature (HB): -20°C to +75°C

Insulation Class: F (155°C)

Protection: IP65 to EN60529, when fitted with connector

Electric Connections: Spade terminal for ISO 4400 connector plug (Pg 11P)

Wattages (FT/HT): AC - 10.5 watts / 55 VA inrush
Wattages (FB): AC - 16.7 watts / 78 VA inrush, DC - 9.5 watts

Standard Voltages	FT Coil Part Number	HT Coil Part Number	HB Coil Part Number
24/50	400425-101	400426-101	400426-201
110/50, 120/60	400425-125	400426-125	400426-225
115/50	400425-118	400426-118	400426-218
220/50, 240/60	400425-128	400426-128	400426-228
230/50	400425-117	400426-117	400426-217

Valve Kits & Coil Reference

Pipe Size	Catalog Number	Spare Part Kit	Coil	24/50-60	115/50	120/60	230/50-60	24 VDC
1/8”	106 00 001	-	C22A - 4W	430 05 421	430 05 425	430 05 427	430 05 429	430 05 413
1/8”	106 00 003	-						
1/8”	106 00 058	-						
1/4”	106 00 187	-						
1/4”	106 00 189	-						
1/8”	107 00 001	-						
1/8”	107 00 003	-						
1/8”	107 00 124	-						
1/8”	HV293734	-						
3/8”	SCE238A001	XC131600						
1/2”	SCE238A002	XC131600						
1/2”	SCE238B003	XC131618						
3/4”	SCE238A004	XC131606						
1”	SCE238A005	XC131609						
1/4”	SCG531D001	-	C22A - 2.5W	430 05 420	430 05 424		430 05 428	430 05 412
1/4”	SCG531D002	-						
1/4”	SCG531B017	-						
1/4”	SCG531B018	-						
1/8”	106 00 242	-	C25A - 5W	-	430 05 537		430 05 540	430 05 533
1/8”	106 00 243	-						
1/4”	106 00 257	-						
1/4”	106 00 258	-						
1/8”	107 00 207	-						
1/8”	107 00 208	-						
3/8”	SCE238A006	XC131600						
1/2”	SCE238A007	XC131600						
1/2”	SCE238B008	XC131618						
3/4”	SCE238A009	XC131606						
1”	SCE238A010	XC131609						
3/8”	SCG238S414	K322970						
1/2”	SCG238S415	K322972						
3/4”	SCG238S416	K322974						
1”	SCG238S417	K322976						

Pipe Size	Catalog Number	Spare Part Kit	Coil	24/50	115/50	120/60	230/50	240/60	24 VDC
1 1/4”	SCG238C016	977 01 886	ANX - 9W	430 05 273	430 05 274	-	430 05 275	-	430 05 272
1 1/2”	SCG238C017	977 01 879							
2”	SCG238C018	977 01 879							
1 1/4”	SCG238C019	977 01 886							
1 1/2”	SCG238C020	977 01 879							
2”	SCG238C021	977 01 879							
3/8”	SCG240A100	977 01 881	BMX - 6W	430 05 168	430 05 169	430 05 170	430 05 171	430 05 315	430 05 166

Valve Kits & Coil Reference

Pipe Size	Catalog Number	Spare Part Kit	Coil	24/50	115/50	110/50, 120/60	230/50	220/50, 240/60	24 VDC
3/8”	SCG238A044	C132486	M6 - FT	400325-101	400325-118	400325-125	400325-117	400325-128	-
		C132487	M6 - FB	-	-	-	-	-	400325-242
1/2”	SCG238A046	C132486	M6 - FT	400325-101	400325-118	400325-125	400325-117	400325-128	-
		C132487	M6 - FB	-	-	-	-	-	400325-242
3/4”	SCG238A048	C132488	M6 - FT	400325-101	400325-118	400325-125	400325-117	400325-128	-
		C132489	M6 - FB	-	-	-	-	-	400325-242
1”	SCG238A050	C132490	M6 - FB	400325-201	400325-218	400325-225	400325-217	400325-228	-
		C132491	M6 - FB	-	-	-	-	-	400325-242
1/4”	SCE263A300	C186270	MXX - FT	400425-101	400425-118	400425-125	400425-117	400425-128	-
1/4”	SCE263A301	C186270							
3/8”	SCE263A305	C186270							
3/8”	SCE263A306	C186270							
3/8”	SCB222B093	C304031							
1/2”	SCB222B094	C304031							
1/2”	SCB220A021	C312712	MXX - HT	400426-101	400426-118	400426-125	400426-117	400426-128	-
3/4”	SCB220A023	C312702							
1”	SCB220.025	C304392							
1/2”	SCB222D002	C164230	MXX - HB	400426-201	400426-218	400426-225	400426-217	400426-228	-
3/4”	SCB222E003	C164230							

NOTES:

NOTES:

In Control

Numatics® In Control range of products span from filter regulators, poppet valves, manifold valve islands, miniature valves and accessories.

Our range of air preparation components such as filters and regulators maximizes system performance and safety from the compressor to the point of use. Our patented FlexiBlok™ leads the industry in the ease of assembly. FlexiBlok™ FRL line eliminates the need for connecting brackets, mounting kits and component connectors.

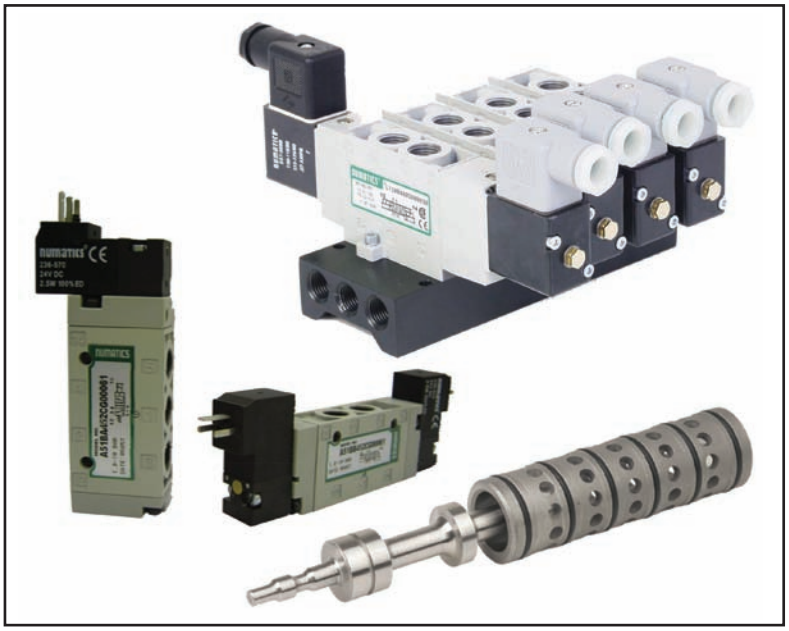
Numatics' 2000 Series manifold valve islands are highly modular and are truly plug & play due to flexibility in design. The 2000 Series are also fieldbus capable for enhanced user control.

In Motion

Numatics® In Motion range of products span from compact, swing clamps & rodless cylinders, rotary actuators, grippers, air bellows and accessories.

Our range of cylinders ranges from mini cylinders of piston diameter from 8 to 25mm to VDMA cylinders of piston diameter from 32 to 320mm.

Specialty cylinders such as rodless cylinders (piston diameter of 25 to 50mm), rotary cylinders (piston diameter of 32 to 125mm) and air bellows (air ports G1/8" to G1") are also available.



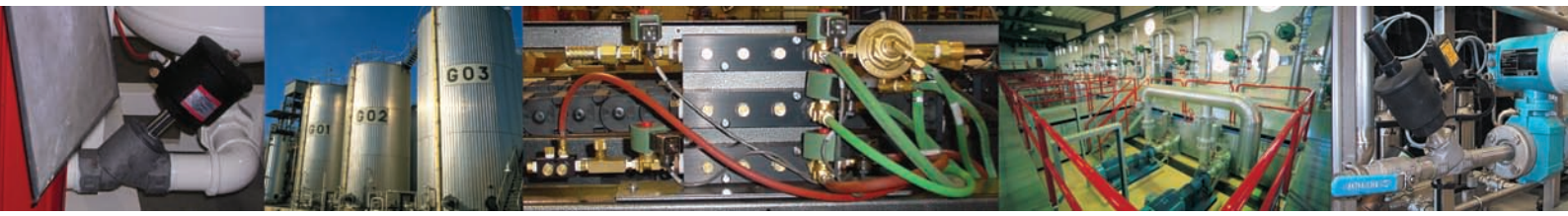
Lapped Spool & Sleeve Valve

Numatics® unique lapped spool & sleeve assembly is literally the core of most Numatics valves. It saves energy and most importantly costs due to its various features:

- Long service life of up to 200 million cycles avoids costs that would arise from early replacement.
- Razor sharp edges on the spool have a perfect shear against the holes in the sleeve to resist air contaminants such as swarf, which will destroy valves with dynamic rubber seals.
- Unlike conventional valves, the spool and sleeve assembly switches without crossovers. This ensures that compressed air cannot exhaust from the inlet directly into the outlet during the switching process.
- The piston forces are balanced. Vacuum and pressure can both be applied in one valve at the same time, independent of flow direction. No additional valves or components are needed.

ASCO®

Blk 4008, Ang Mo Kio Ave 10, #04-17/22, TECHplace I, Singapore 569625
Tel: +65 6556 1100 Fax: +65 6556 0011
Email: valvesales@emerson.com
Website: www.asconumatics.net



Africa • Americas • Asia • Europe • Oceania

Local Distributor:

From: A11R1 (08/09)