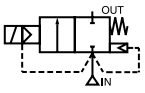
SOLENOID VALVES

pilot operated, single flow
floating piston for petrol vending
3/4

NC



2/2
Series
291

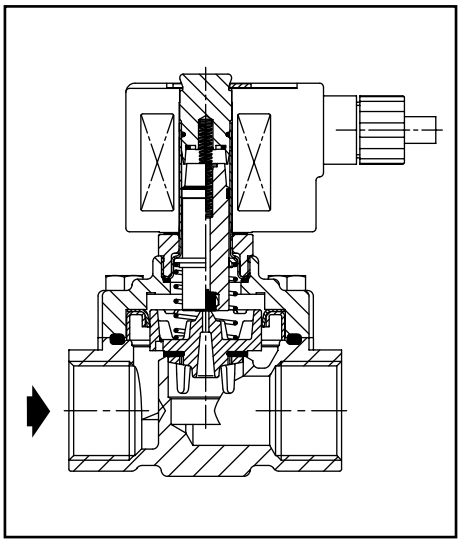
FEATURES

- *The normally closed petrol dispensing valves are especially designed to meet the particular needs for the fuel dispensers*
- *The high quality polyphenylene sulfide piston guarantees a long operating life and a wide temperature range. Hydrocarbon resistant FPM seal material for tight shut off*
- *Choice of explosion proof operators, intended for use in potentially explosive atmospheres, according to Directive ATEX 94/9/EC*
- *Solenoid ingress protection degree ≥ IP65*
- *ASCO Numatics components satisfy all relevant EC directives*

GENERAL

Differential pressure 0,3 - 3,5 bar [1 bar = 100kPa]
Ambient temperature range -40 to +70°C

fluids (∗)	temperature range (TS)	seal materials (∗)
Petrol & Liquid fuels	-40 to +70°C	FPM (fluoroelastomer) / VMQ (silicone)



MATERIALS IN CONTACT WITH FLUID

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

Body	Brass
Bonnet	Brass
Core tube	Stainless steel
Core and plugnut	Stainless steel
Core disc	FPM
Core guide	POM
Rider ring	PTFE
Springs	Stainless steel
Sealing	FPM / VMQ
Piston	PPS
Piston disc	FPM
Lip seal	PTFE
Piston support	Brass

ELECTRICAL CHARACTERISTICS

Coil insulation class F
Electrical safety IEC 335
Standard voltages DC (=) 24V - 48V

prefix option	power ratings holding ~	power ratings hot/cold =	operator ambient temperature range (TS)	safety code	electrical enclosure protection (EN 60529)	replacement coil ~	replacement coil =	type (1)
	(W)	(W)	(C°)			230V/50/60 Hz	24V/DC	
PV	-	9,0 / 11,2	-40 to +65	II 2 G Ex mb II T4	moulded IP67	-	(2)	01
ZN	-	9,0 / 11,2	-20 to +50	II 3 G EEx nA II T3	moulded IP65	-	(2)	02
EF	-	9,0 / 11,2	-40 to +55	NEMA type 7 and 9	Nema 4X	-	238714-006D	03
SC	-	9,0 / 11,2	-40 to +55	EN 60730	moulded IP65	-	400425-142	04

(1) Refer to the dimensional drawings on page 6
(2) Multiple coils kits available under ATEX, contact us
- Not available

SPECIFICATIONS

pipe size	orifice size	flow coefficient Kv		operating pressure differential (bar)		prefix optional solenoids *						basic catalogue number
				min	max. PS	NEMA 7&9	ATEX / IECEx Ex **d**	ATEX / IECEx Ex **e mb**	ATEX / IECEx Ex **mb**	ATEX / IECEx EEx **nA**	IP65	
G	(mm)	(m^3/h)	(l/min)		=	**EF** (1)	**NF**	**EM**	**PV**	**ZN**	**SC**	
NC - Normally closed												
3/4	20	3,9	65	0,3	3,5	●	-	-	●	●	●	**G291A110**

● Available feature - Not available
* For description of solenoids see page 31-40
(1) Prefix EF should always be used in conjunction with change letter G in the basic number

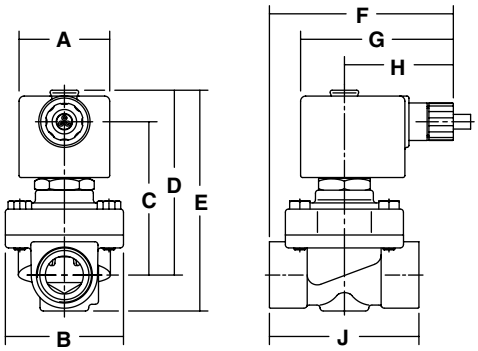
INSTALLATION

- The valves can be mounted in any position without affecting operation
- Pipe connection identifier is: G = pipe thread according to ISO 228/1
- Installation/maintenance instructions are included with each valve
- PV solenoids have a standard cable length of 2 meters. Other lengths in full meters are available on request
- SC/ZN solenoids are supplied with ISO 4400 spade plug connectors (cable Ø 6-10 mm)

DIMENSIONS (mm), WEIGHT (kg)

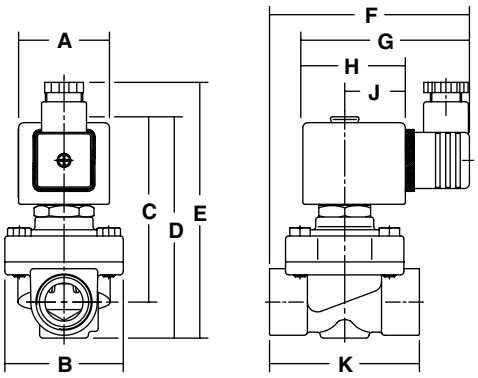
TYPE 01
Prefix "PV" Solenoid
Epoxy encapsulated
EN-IEC 60079-0, 60079-18, 61241-0, 61241-18
II 2 G/D Ex mb II / Ex mD
IP67

G291A110



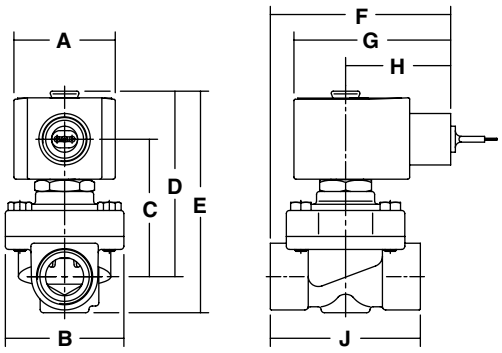
TYPE 02
Prefix "ZN" Solenoid
Epoxy moulded
EN 50021
II 3 G/D EEx nA II
IP65

G291A110



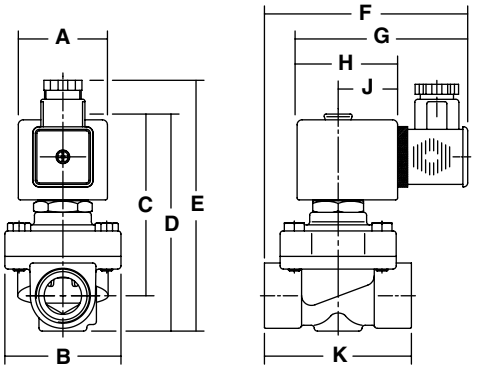
TYPE 03
Prefix "EF" Solenoid
Epoxy encapsulated
ICS-6 ANSI / NEMA
Type 7 and 9 (applicable to solenoid only)

G291G110



TYPE 04
Prefix "SC" Solenoid
Epoxy moulded
IEC 335 / ISO 4400
IP65

G291A110

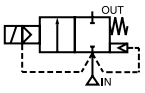


type	AC/DC	prefix option	catalogue number	spare parts kits	A	B	C	D	E	F	G	H	J	K	weight
01	=	PV	G291A110	PVC117690	45	58	75	91	108	90	75	54	73	-	1,2 kg
02	=	ZN	G291A110	ZNC117690	45	58	91	108	125	98	82	50	30	73	1,1 kg
03	=	EF	G291G110	EFC117690	50	58	67	91	108	88	77	51	73	-	1,3 Kg
04	=	SC	G291A110	C117690	45	58	91	108	125	102	85	50	30	73	1,1 Kg

SOLENOID VALVES

pilot operated, single flow
floating diaphragm, for petrol vending
3/4 and 1

NC



2/2
Series
293

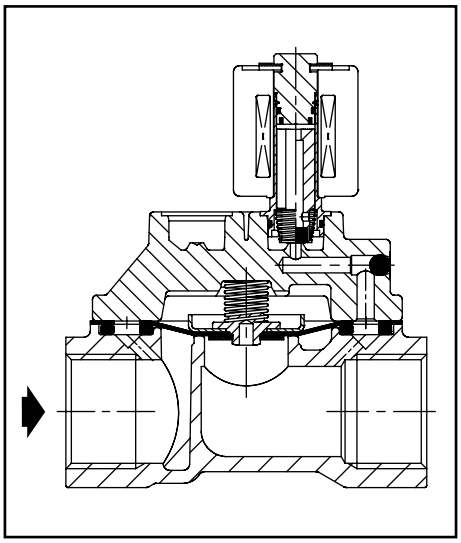
FEATURES

- *Compact aluminium flanged bodied single flow valves for petrol vending applications*
- *Minimum operating differential pressure 0,35 bar*
- *Explosion proof operators, intended for use in potential explosive areas, according to Directive ATEX 94/9/EC*
- *Easy electrical installation by means of the moulded-in supply cable, standard length 2 meter*
- *ASCO Numatics components satisfy all relevant EC directives*

GENERAL

Differential pressure 0,35 - 3,5 bar [1 bar = 100kPa]
Ambient temperature range AC: -40 to +65°C
DC: -40 to +40°C

fluids (✶)	temperature range (TS)	seal materials (✶)
Petrol & Liquid fuels	-20 to +40°C	FPM (fluoroelastomer) / VMQ (silicone)



MATERIALS IN CONTACT WITH FLUID

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

Body	Aluminium
Core tube	Stainless steel
Core and plugnut	Stainless steel
Springs	Stainless steel
Seat	Aluminium
Sealing	FPM / VMQ
Disc & O-Rings	FPM
Diaphragm Support	POM
Shading Ring (AC only)	Copper

ELECTRICAL CHARACTERISTICS

Coil insulation class F
Electrical safety IEC 335
Standard voltages DC (=) 24V - 48V;
AC (~) 24V - 48V - 115V - 230V / 50 Hz

prefix option	power ratings		operator ambient temperature range (TS)	safety code	electrical enclosure protection (EN 60529)	replacement coil		type[1]
	holding ~	hot/cold =				~	=	
	(W)	(W)	(C°)			230V/50/60 Hz	24V/DC	
PV	4,0	5,0 / 6,9	-40 to +40/60	II 2 G Ex mb II T3 / T4	moulded IP67	-	[2]	01 & 02

[1] Refer to the dimensional drawings on page 8
[2] Multiple coils kits available under ATEX, contact us
- Not available

SPECIFICATIONS

pipe size	orifice size	flow coefficient Kv		operating pressure differential (bar)			prefix optional solenoids *						basic catalogue number
				min	max. PS		NEMA 7&9	ATEX / IECEx				IP65	
								Ex **d**	Ex **e mb**	Ex **mb**	EEx **nA**		
G	(mm)	(m^3/h)	(l/min)		~	=	**EF**	**NF**	**EM**	**PV**	**ZN**	**SC**	
NC - Normally closed													
3/4	19,5	7,3	122	0,35	3,5	3,5	-	-	-	●	-	-	**G293A001**
3/4	25	9,5	158	0,35	3,5	3,5	-	-	-	●	-	-	**G293B002**
1	25	11,5	192	0,35	3,5	3,5	-	-	-	●	-	-	**G293B003**

● Available feature
- Not available
* For description of solenoids see pages 31-40

INSTALLATION

- The valves can be mounted in any position without affecting operation
- Pipe connection identifiers: G = pipe thread according to ISO 228/1
- Installation/maintenance instructions are included with each valve
- PV solenoids have a standard cable length of 2 meters. Other lengths in full meters are available on request

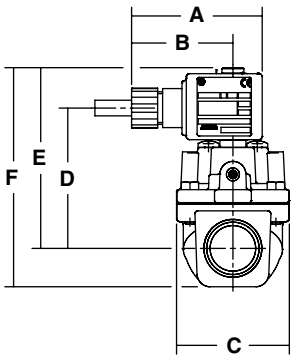
DIMENSIONS (mm), WEIGHT (kg)

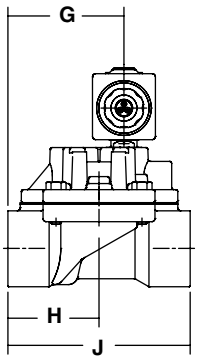
TYPE 01
Prefix "PV" Solenoid
Epoxy encapsulated
EN-IEC 60079-0, 60079-18, 61241-0, 61241-18
II 2 G/D Ex mb II / Ex mD
IP67

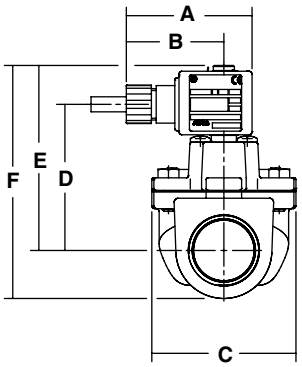
G293A001

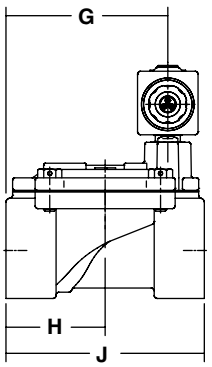
TYPE 02
Prefix "PV" Solenoid
Epoxy encapsulated
EN-IEC 60079-0, 60079-18, 61241-0, 61241-18
II 2 G/D Ex mb II / Ex mD
IP67

G293B002 / B003







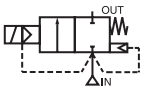


type	AC/DC	prefix option	catalogue number	spare parts kits	A	B	C	D	E	F	G	H	J	weight
01	~ / =	PV	G293A001	320191	60	47	52	65	83	101	53	42	84	0,9 Kg
02	~ / =		G293B002	320197 / 320198	60	47	69	70	89	112	73	48	95	0,9 Kg
	~ / =		G293B003	320197 / 320198	60	47	69	70	89	112	73	48	95	0,9 Kg

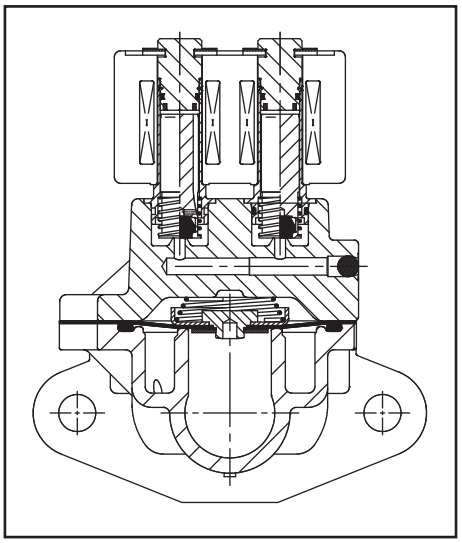
SOLENOID VALVES

pilot operated, dual flow
floating diaphragm, for petrol vending
3/4

NC



2/2
Series
T292



FEATURES

- *The normally closed petrol dispensing valves are especially designed to meet the particular needs for the fuel dispensers*
- *Valve offers three flow positions, i.e. full flow, low flow, and shut off*
- *Minimum operating differential pressure 0,35 bar*
- *Explosion proof operator, intended for use in potential explosive areas, according to Directive ATEX 94/9/EC*
- *Easy electrical installation by means of the moulded-in supply cable, standard length 2 meter*
- *ASCO Numatics components satisfy all relevant EC directives*

GENERAL

Differential pressure 0,35 - 2,7 bar [1 bar = 100kPa]
Ambient temperature range AC: -20 to +40°C
DC: -20 to +40°C

fluids (✶)	temperature range (TS)	seal materials (✶)
Petrol & Liquid fuels	-40 to +40°C	FPM (fluoroelastomer) / VMQ (silicone)

MATERIALS IN CONTACT WITH FLUID

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

Body	Brass
Core tube	Stainless steel
Core and plugnut	Stainless steel
Springs	Stainless steel
Seat	Brass
Sealing	FPM / VMQ
Disc & O-Rings	FPM
Diaphragm Support	POM
Shading Ring (AC only)	Copper

ELECTRICAL CHARACTERISTICS

Coil insulation class F
Electrical safety IEC 335
Standard voltages DC (=) 24V - 48V;
AC (~) 24V - 48V - 115V - 230V / 50 Hz

prefix option	power ratings		operator ambient temperature range (TS)	safety code	electrical enclosure protection (EN 60529)	replacement coil		type(1)
	holding ~	hot/cold =				~	=	
	(W)	(W)	(C°)			230V/50/60 Hz	24V/DC	
PV	4,0	5,0 / 6,9	-40 to +65	II 2 G Ex mb II T3	moulded IP67	-	(2)	01

(1) Refer to the dimensional drawings on page 10
(2) Multiple coils kits available under ATEX, contact us
- Not available

SPECIFICATIONS

pipe size	orifice size		flow coefficient Kv				operating pressure differential (bar)			prefix optional solenoids *						basic catalogue number
										NEMA	ATEX / IECEx				IP65	
	Low	High	Low		High		min	max. PS		7&9	Ex **d**	Ex **e mb**	Ex **mb**	EEx **nA**		
T	(mm)	(mm)	(m^3/h)	(l/min)	(m^3/h)	(l/min)		~	=	**EF**	**NF**	**EM**	**PV**	**ZN**	**SC**	
NC - Normally closed																
3/4	2,5	19	0,10	1,7	7,3	122	0,35	2,7	2,7	-	-	-	●	-	-	**T292B027**

● Available feature
- Not available
* For description of solenoids see pages 31-40

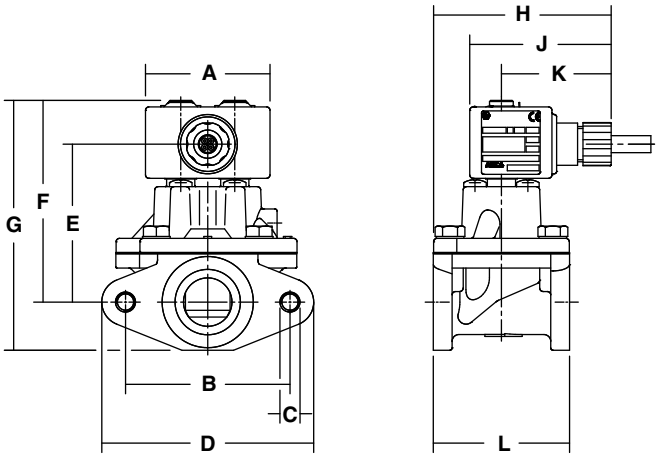
INSTALLATION

- The valves can be mounted in any position without affecting operation
- Pipe connection identifiers: T = flanged body
- Installation/maintenance instructions are included with each valve
- PV solenoids have a standard cable length of 2 meters. Other lengths in full meters are available on request

DIMENSIONS (mm), WEIGHT (kg)

TYPE 01
Prefix "PV" Solenoid
Epoxy encapsulated
EN-IEC 60079-0, 60079-18, 61241-0, 61241-18
II 2 G/D Ex mb II / Ex mD
IP67

T292B027

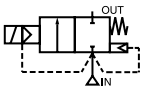


type	AC/DC	prefix option	catalogue number	spare parts kits	A	B	C	D	E	F	G	H	J	K	L	weight
01	~ / =	PV	T292B027	320056 / 323369	53	70	M8	90	67	86	106	76	60	47	58	1,4 Kg

SOLENOID VALVES

pilot operated, dual flow
floating diaphragm, for petrol vending
1

NC



2/2
Series
T292

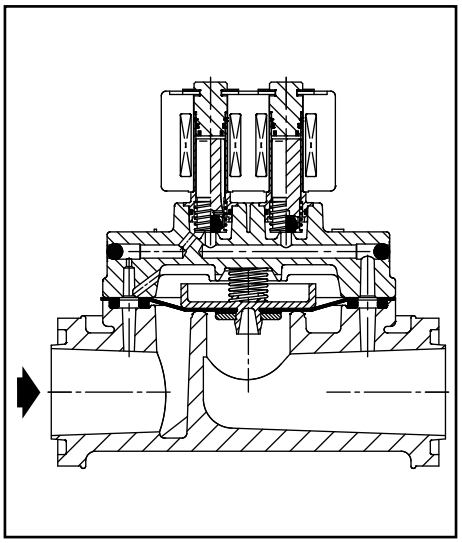
FEATURES

- *Compact aluminium flanged bodied dual flow valves for petrol vending applications*
- *Valve offers three flow positions, i.e. full flow, low flow, and shut off*
- *Minimum operating differential pressure 0,35 bar*
- *Explosion proof operators, intended for use in potential explosive areas, according to Directive ATEX 94/9/EC*
- *Easy electrical installation by means of the moulded-in supply cable, standard length 2 meter*
- *ASCO Numatics components satisfy all relevant EC directives*

GENERAL

Differential pressure 0,35 - 3,5 bar [1 bar = 100kPa]
Ambient temperature range AC: -40 to +65°C
DC: -40 to +40°C

fluids (✶)	temperature range (TS)	seal materials (✶)
Petrol & Liquid fuels	-40 to +40°C	FPM (fluoroelastomer) / VMQ (silicone)



MATERIALS IN CONTACT WITH FLUID

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

Body	Aluminium
Core tube	Stainless steel
Core and plugnut	Stainless steel
Springs	Stainless steel
Seat	Aluminium
Sealing	FPM / VMQ
Disc & O-Rings	FPM
Diaphragm Support	POM
Shading Ring (AC only)	Copper

ELECTRICAL CHARACTERISTICS

Coil insulation class F
Electrical safety IEC 335
Standard voltages DC (=) 24V - 48V;
AC (~) 24V - 48V - 115V - 230V / 50 Hz

prefix option	power ratings		operator ambient temperature range (TS)	safety code	electrical enclosure protection (EN 60529)	replacement coil		type[1]
	holding ~	hot/cold =				~	=	
	(W)	(W)	(C°)			230V/50/60 Hz	24V/DC	
PV	4,0	5,0 / 6,9	-40 to +65	II 2 G Ex mb II T3	moulded IP67	-	[2]	01

[1] Refer to the dimensional drawings on page 12
[2] Multiple coils kits available under ATEX, contact us
- Not available

SPECIFICATIONS

pipe size	orifice size	flow coefficient Kv				operating pressure differential (bar)			prefix optional solenoids *						basic catalogue number
		Low		High		min	max. PS		NEMA 7&9	ATEX / IECEx				IP65	
										Ex **d**	Ex **e mb**	Ex **mb**	EEx **nA**		
T	(mm)	(m^3/h)	(l/min)	(m^3/h)	(l/min)		~	=	**EF**	**NF**	**EM**	**PV**	**ZN**	**SC**	
NC - Normally closed															
1	25	0,12	2,0	11,5	192	0,35	3,5	3,5	-	-	-	●	-	-	**T292B025**

● Available feature
- Not available
* For description of solenoids see pages 31-40

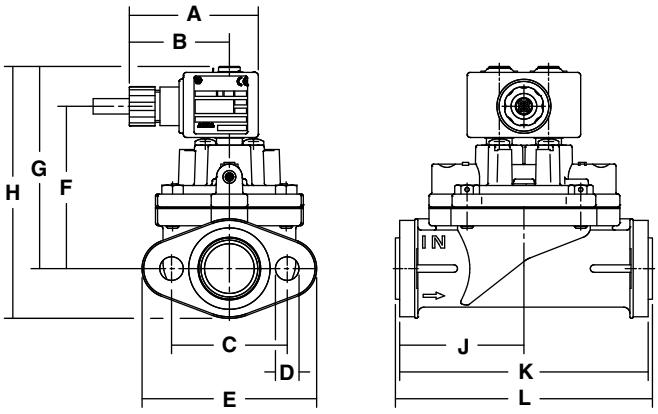
INSTALLATION

- The valves can be mounted in any position without affecting operation
- Pipe connection identifiers: T = flanged body
- Installation/maintenance instructions are included with each valve
- PV solenoids have a standard cable length of 2 meters. Other lengths in full meters are available on request

DIMENSIONS (mm), WEIGHT (kg)

TYPE 01
Prefix "PV" Solenoid
Epoxy encapsulated
EN-IEC 60079-0, 60079-18, 61241-0, 61241-18
II 2 G/D Ex mb II / Ex mD
IP67

T292B025

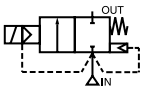


type	AC/DC	prefix option	catalogue number	spare parts kits	A	B	C	D	E	F	G	H	J	K	L	weight
01	~ / =	PV	T292B025	320180 / 320196	60	47	54	Ø11	82	76	94	118	58	116	120	1,0 Kg

SOLENOID VALVES

pilot operated, dual flow
floating diaphragm, for petrol vending
3/4 to 1

NC



2/2
Series
292

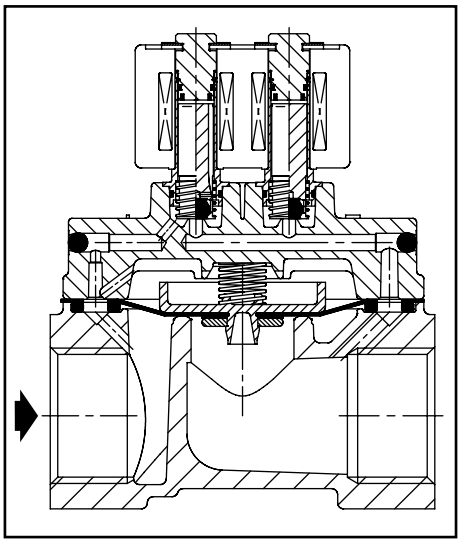
FEATURES

- *Compact aluminium flanged bodied dual flow valves for petrol vending applications*
- *Minimum operating differential pressure 0,35 bar*
- *Explosion proof operators, intended for use in potential explosive areas, according to Directive ATEX 94/9/EC*
- *Easy electrical installation by means of the moulded-in supply cable, standard length 2 meter*
- *ASCO Numatics components satisfy all relevant EC directives*

GENERAL

Differential pressure 0,35 - 3,5 bar [1 bar = 100kPa]
Ambient temperature range AC: -40 to +65°C
DC: -40 to +40°C

fluids (✶)	temperature range (TS)	seal materials (✶)
Petrol & Liquid fuels	-20 to +40°C	FPM (fluoroelastomer) / VMQ (silicone)



MATERIALS IN CONTACT WITH FLUID

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

Body	Aluminium
Core tube	Stainless steel
Core and plugnut	Stainless steel
Springs	Stainless steel
Seat	Aluminium
Sealing	FPM / VMQ
Disc & O-Rings	FPM
Diaphragm Support	POM
Shading Ring (AC only)	Copper

ELECTRICAL CHARACTERISTICS

Coil insulation class F
Electrical safety IEC 335
Standard voltages DC (=) 24V - 48V;
AC (~) 24V - 48V - 115V - 230V / 50 Hz

prefix option	power ratings holding ~	power ratings hot/cold =	operator ambient temperature range (TS)	safety code	electrical enclosure protection (EN 60529)	replacement coil ~	replacement coil =	type(1)
	(W)	(W)	(C°)			230V/50/60 Hz	24V/DC	
PV	4,0	5,0 / 6,9	-40 to +40/65	II 2 G Ex mb II T3	moulded IP67	-	(2)	01 & 02

(1) Refer to the dimensional drawings on page 14
(2) Multiple coils kits available under ATEX, contact us
- Not available

SPECIFICATIONS

pipe size	orifice size Low	orifice size High	flow coefficient Kv Low		flow coefficient Kv High		operating pressure differential (bar) min	operating pressure differential (bar) max. PS ~	operating pressure differential (bar) max. PS =	prefix optional solenoids * NEMA 7&9	ATEX / IECEx Ex **d**	ATEX / IECEx Ex **e mb**	ATEX / IECEx Ex **mb**	ATEX / IECEx EEx **nA**	IP65	basic catalogue number
	Low	High	Low		High		min	max. PS		NEMA 7&9	ATEX / IECEx				IP65	
Rp	(mm)	(mm)	(m^3/h)	(l/min)	(m^3/h)	(l/min)		~	=	**EF**	**NF**	**EM**	**PV**	**ZN**	**SC**	
NC - Normally closed																
3/4	2,5	19	0,10	1,7	7,3	122	0,35	3,5	3,5	-	-	-	●	-	-	**E292A021**
3/4	2,5	25	0,12	2,0	9,5	158	0,35	3,5	3,5	-	-	-	●	-	-	**E292B022**
1	2,5	25	0,12	2,0	11,5	192	0,35	3,5	3,5	-	-	-	●	-	-	**E292B023**

● Available feature
- Not available
* For description of solenoids see pages 31-40

INSTALLATION

- The valves can be mounted in any position without affecting operation
- Pipe connection identifiers: E = pipe thread according to ISO 7/1
- Installation/maintenance instructions are included with each valve
- PV solenoids have a standard cable length of 2 meters. Other lengths in full meters are available on request

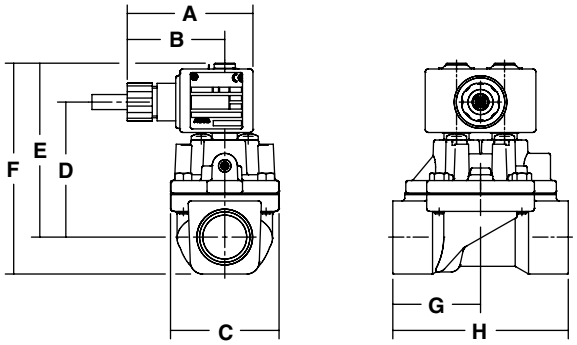
DIMENSIONS (mm), WEIGHT (kg)

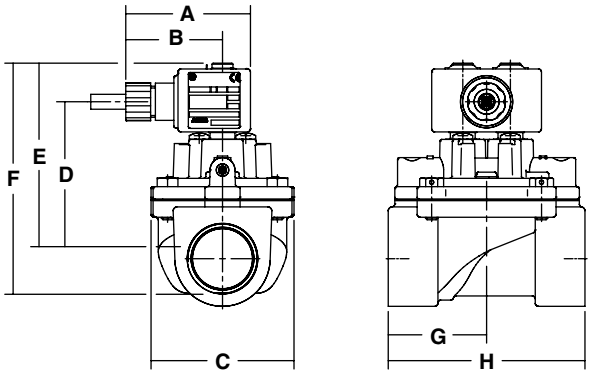
TYPE 01
Prefix "PV" Solenoid
Epoxy encapsulated
EN-IEC 60079-0, 60079-18, 61241-0, 61241-18
II 2 G/D Ex mb II / Ex mD
IP67

E293A021

TYPE 02
Prefix "PV" Solenoid
Epoxy encapsulated
EN-IEC 60079-0, 60079-18, 61241-0, 61241-18
II 2 G/D Ex mb II / Ex mD
IP67

E293B022 / B023





type	AC/DC	prefix option	catalogue number	spare parts kits	A	B	C	D	E	F	G	H	weight
01	~ / =	PV	E292A021	320179	60	47	52	65	83	101	42	84	1,0 Kg
02	~ / =		E292B022	320180 / 320196	60	47	69	70	89	112	48	95	1,0 Kg
	~ / =		E292B023	320180 / 320196	60	47	69	70	89	112	48	95	1,0 Kg