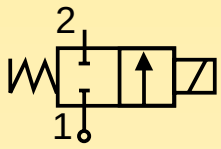
Solenoid Valves for Automation

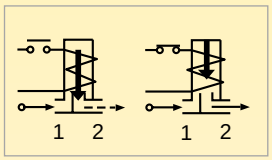
2/2 way - Normally Closed - Direct operated

Fittings: G = 1/8” - 1/4”

Series **146**



N.C.
Normally closed
Coil energised - open
Coil de-energised - closed



General description:

PARKER series **146** solenoid valves are direct operated and do not require a minimum differential pressure to operate.
They are used for general applications with media such as **water, air, light oils (2°E) and inert gases**, provided they are compatible with the construction materials used.
Series **146** valves are **normally closed**.

Temperatures:

The working temperature for media is:

maximum	**+140°C**
minimum	**-10°C**

The maximum ambient temperature is:

•with class **“F”** coils	**+50°C**
•with class **“H”** coils	**+80°C**

Application:

Series **146** solenoid valves are ideal for the automatic control of media in a wide range of applications such as:
• Burglar alarm systems;
•Sterilisers;
•Espresso coffee machines;
•Diesel oil burners;
•Shoe manufacturing machinery;
•Ceramic plants;
•Air dryers;
•Automatic dispensers;
•Industrial washing machines;
•Water massage systems;
•Floor washing machines;
•Welding systems;
•Machines for plastics;
•Humidifiers.
For use with air the maximum differential pressure (MOPD) may be increased by 25%.

Coils:

For series **146** valves class **“F”** coils **(155°C)**, encapsulated in thermoplastic containing 30% glass fiber (type ZB, YB), and class **“H”** coils **(180°C)**, encapsulated in thermoplastic containing 40% glass fiber (type: ZH), are available.
All the coils are for continuous service, 100% E.D.
The rated voltage tolerance is:
±10% for A.C. power supply and
+10% -5% for D.C.
The “Z” and “Y” coils can be used on a.c. with frequency of 50/60Hz (dualfrequency).
The “Z” coils have Faston terminals for **DIN 43650A** connectors with protection to **IP65**.
The “Y” coil has terminals with 2 x 1,000 mm cables with protection to **IP67**.

Installation:

The valves can be mounted in any position without jeopardising their operation. It is however advisable to install them with the coil in a vertical position above the body.

Approvals:

• Coil certification:

ZB 09	24V/50-60Hz, 115V/50-60Hz, 220-230V/50-60Hz, 240V/50-60Hz
ZB 12	12V DC, 24V DC
ZB 14	24V/50-60Hz, 115V/50-60Hz, 220-230V/50-60Hz,
ZB 16	24V DC
YB 09	220-230V/50-60Hz
YB 14	only voltage 220/50-60Hz
YB 16	24V DC

• For the coils:

ZB 09	220-230V/50-60Hz, 240V/50-60Hz
ZB 14	220-230V/50-60Hz
YB 09	220-230V/50-60Hz

• For the model VE 146.3 ABV with coil

ZH 14	with voltage 220-230V/50-60Hz

• UL Recognized Comp. Mark for coils:

ZB 09	24V/60Hz, 110-120V/60Hz, 208-240V/60Hz
YB 09	24V/60Hz, 110-120V/60Hz, 208-240V/60Hz

Special versions:

On request and for large orders, the series **146** valves can be fitted with quick connect fittings such as **Prestolock** cartridge.

for: water - air - light oils (2°E) - inert gases

MATERIALS

• Valve body:	OT58 UNI 5705 brass stamping
• Seals:	Viton
• Enclosing tube:	AISI 304 stainless steel
• Plunger:	AISI 430 F stainless steel
• Spring:	AISI 302 stainless steel
• Shading ring:	Copper

ELECTRICAL FEATURES

Coil type [ ]		Power [W]		Insulat. class
A.C.(~)	D.C.(=)	A.C.(~)	D.C.(=)	
ZB 09	ZB 12	9	12	F
ZB*14	ZB*16	14	16	F
YB 09	YB 12	9	12	F
YB*14	YB*16	14	16	F
ZH*14	ZH*16	14	16	H

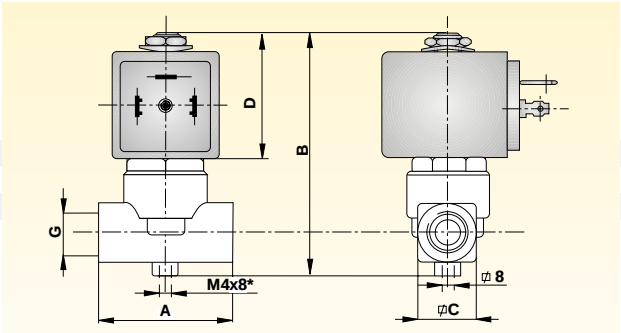
SPECIFICATION

Fittings Ø G	Valve type	Nominal orifice Ø	Flow coefficient Kv	Minimum pressure	Max differential pressure (M.O.P.D.)		Coil type	Weight	Notes
["]	[ ]	[mm]	[m³/h]	[bar]	in A.C.(~) [bar]	in D.C.(=) [bar]	[ ]	[Kg]	[ ]
1/8	146 F	2,5	0,197	0	15	12	Z - Y	0,340	1
1/8	146 H	3,0	0,270	0	10	8	Z - Y	0,340	1
1/4	146 W	2,5	0,197	0	15	12	Z - Y	0,340	1
1/4	146 Y	3,0	0,270	0	10	8	Z - Y	0,340	1
1/4	146.3 K	4,5	0,527	0	10	3	Z *- Y*	0,340	1
1/4	146.3 AB	6,0	0,750	0	8	1	Z* - Y*	0,340	1

Note: 1) NP (nominal pressure): 64 bar

See specification table.

DIMENSIONS



Fittings Ø G	A	B	C	D
["]	[mm]	[mm]	[mm]	[mm]
*1/8	40,0	74,5	18	37,5
1/4	40,0	74,5	18	37,5
*1/4	40,0	74,5	18	37,5

* excluded mod. 146.3K - 146.3AB

ORDER CODE

PM | **146** | | **V** | | | [V] | [Hz] / d.c.

VALVE BODY

SERIES

FITTINGS

F	1/8"
H	1/8"
W	1/4"
Y	1/4"
•3K	1/4"
•3AB	1/4"

SEAL

V	Viton

Coil type	24 V 50/60 Hz	115V 50/60 Hz	220-230 V 50/60 Hz	240 V 50/60 Hz	12 V d.c.	24 V d.c.
ZB 09	•	•	•	•		
ZB 12					•	•
ZB 14	•	•	•	•		
ZB 16						•
YB 09	•	•	•			
YB 12					•	•
YB 14	•		•			
YB 16						•
ZH 14	•	•	•			
ZH 16						•

Coil type	24 V / 60 Hz	110-120 V / 60 Hz	208-240 V / 60 Hz
ZB 09 UL	•	•	•
YB 09 UL	•	•	•

Note: Valve supplied with body (PM) and coil separate. Connector to be ordered separately.

Z coil

Coil manufactured from **class H** copper wire, moulded in thermoplastic:
- (polyester) with 30% glass fiber **(type ZB);**
- (polyphenylene) with 40% glass fiber **(type ZH).**

Features:

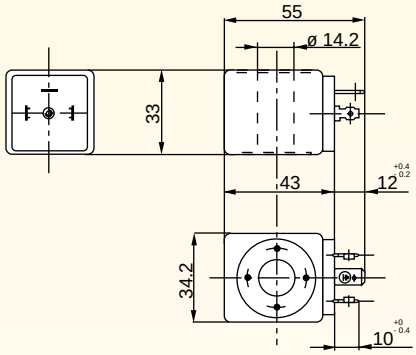
Protection	DIN 40050 = IP 65 with connector
Connector	DIN 43650 A - PG 9 or PG 11
Frequency	50/60 Hz

Types available:

❊ **IMQ, VDE, UL** approved for standard voltages

1) Class F (155°C)
- •ZB09 = 16 VA - 9 W a.c. Service (25 VA - Inrush)
- •ZB12 = 12 W d.c.
- •ZB14 = 25 VA - 14 W a.c. Service (33 VA - Inrush)
- •ZB16 = 16 W d.c.

2) Class H (180°C)
- •ZH14 = 25 VA - 14 W a.c. - Service (33 VA - Inrush)
- •ZH16 = 16 W d.c.



Y coil

Coil manufactured from **class H** copper wire, moulded in thermoplastic:
- (polyester) with 30% glass fiber;

Features

Protection	DIN 40050 = IP 67
Electrical connection	two 1000 mm cables
Frequency	50/60 Hz

Types available:

❊ **IMQ, VDE, UL** approved for standard voltages

1) Class F (155°C)
- •YB09 = 15 VA - 9 W a.c. Service (24 VA - Inrush)
- •YB12 = 12 W d.c.
- •YB14 = 24 VA - 14 W a.c. Service (32 VA - Inrush)
- •YB16 = 16 W d.c.

2) Class E (120°C)
- •YEO9 = 15 VA - 9 W a.c.

Note: recommended for applications where humidity is particularly severe and where ice formation or defrosting may occur.