Solenoid Valve – Rapid Cycling Pulsed Air Systems

Type 6221

General Purpose

2/2-Way; 3/8˝ NPT - 3/4˝ NPT; 7-140 PSI

Design/Function

These valves are based on a modular concept comprising three basic elements:
Valve assembly, push-over coil and standard cable plug.

This valve is specifically designed for general purpose air applications. The design principle of this valve is ideally suited for air systems with high cycling or pulsed operations which can create excessive valve vibrations that other general purpose valves cannot tolerate. This valve also provides a substantial increase in life-cycle compared to other designs.

A minimal pressure differential of 7 PSI is required for complete opening.

To simplify ordering, a wide selection of standard combinations of valve body, push-over coil and standard cable plug can be ordered with one Item Number.

Cable plug options of Type 2508 are available to suit special electrical application requirements.

– The modular concept provides the flexibility to meet application requirements.

Advantages/Benefits

- **High life cycle even under rapid cycling conditions**
- **Solutions for difficult air applications**
- **High reliability**
- **Compact design with high flow rates**
- **Modular solenoid coil system includes different sizes and power ratings**
- **Low noise**
- **Easy coil change**
- **Coil can be locked in 4 x 90° positions, or move freely between, as required**
- **Wide range of cable plug options Type 2508**
- **Double O-ring seal protects coil and valve assembly from moisture and corrosion for longer life**

Applications

Fluids
- Compressed air, especially with high pulse rates

Applications
- Pneumatic systems
- Compressed air circuits

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Solenoid Valve – Rapid Cycling Pulsed Air Systems **Type 6221**

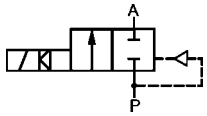
General Purpose

Technical Data

Circuit Function – A

A – 2/2-way, normally closed (N.C.), servo-piston valve, 2-way pilot

Symbol



Operating Data (Valve)

Pressure range	7-140 PSI
Port connection	3/8″ NPT - 3/4″ NPT
Fluid	Seal material NBR: Neutral gases e.g. compressed air
Medium temperature	14°F to 194°F
Maximum ambient temperature	131°F
Response times	opening: 80-100 ms[1)] closing: 200-300 ms[1)] [1)]Depends on orifice and fluid pressure
Installation	As required, but preferably with solenoid system upright

Operating Data (Actuator)

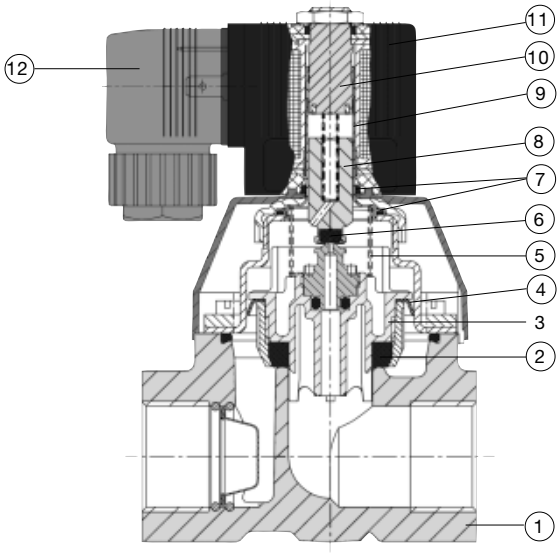
Operating voltages	AC: 24, 120, 240, V/60 Hz DC: 24 V
Voltages tolerance	±10%

Power consumption

	Connection (inch)		
Operating status	3/8	1/2	3/4
AC: inrush	34 VA	36 VA	38 VA
AC: hold	14 VA/ 8 W	14 VA/ 8 W	14 VA/ 8 W
DC: inrush and hold	10 W	10 W	10 W

Duty cycle	100% continuously rated
Cycling rate	up to 20 c.p.m.
Coil insulation class U.L. Recognized: U.L. Listed:	 Class B - Molded Class H - Molded
Rating with cable plug	NEMA 4 (IP 65)
Electr. Connection Form A.	U.L. Recognized: Cable plug DIN 43650, U.L. Listed: Conduit plug

Materials



1	Valve body:	Brass
2	Seat-seal:	NBR
3	Piston:	PPS
4	Gasket:	PTFE
5	Spring:	301 Stainless Steel
6	Plunger-seal:	NBR
7	O-rings:	NBR
8	Plunger:	430F Stainless Steel
9	Armature guide tube:	304 Stainless Steel
10	Stopper:	430F Stainless Steel
11	Coil:	Polyamide, Epoxy
12	Cable plug:	Polyamide

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Specifications - Ordering Chart (Other Versions on Request)

U.L. Recognized with standard-cable plug

N.C.; Brass Valve Body; NBR Seal

Port Connection [Inch]	Orifice [Inch]	C_v	SCFM*	Pressure Range [PSI]	Seal Material	Weight [lbs.]	Item Number Voltage / Frequency [V/Hz] 24 DC	24/60	120/60	240/60
NPT 3/8	3/8	1.6	46	7 - 140	NBR	0.9	456 852 Z	456 853 A	456 854 T	456 855 U
NPT 1/2	1/2	2.9	113	7 - 140	NBR	1.3	456 856 V	456 857 W	456 858 F	456 859 G
NPT 3/4	3/4	5.9	307	7 - 140	NBR	2.2	456 860 D	456 861 S	456 862 T	456 863 U

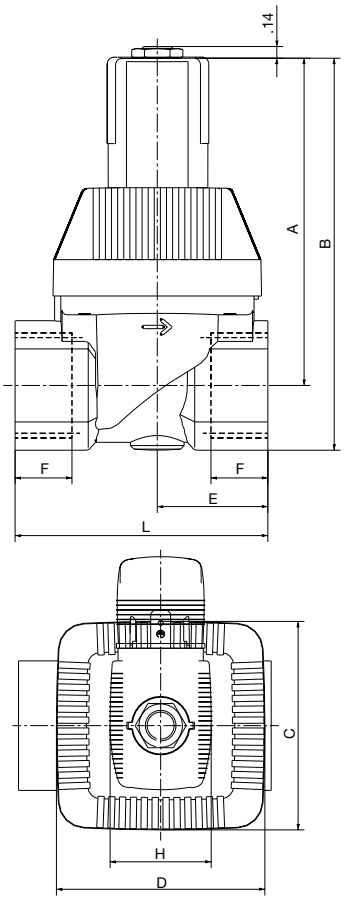
U.L. Listed with Conduit Plug Type 1053

N.C.; Brass Valve Body; NBR Seal

Port Connection [Inch]	Orifice [Inch]	C_v	SCFM*	Pressure Range [PSI]	Seal Material	Weight [lbs.]	Item Number Voltage / Frequency [V/Hz] 24 DC	24/60	120/60	240/60
NPT 3/8	3/8	1.6	46	7 - 140	NBR	0.9	457 419 Y	457 420 V	457 421 J	457 422 K
NPT 1/2	1/2	2.9	113	7 - 140	NBR	1.3	457 423 L	457 424 M	457 425 N	457 426 P
NPT 3/4	3/4	5.9	307	7 - 140	NBR	2.2	457 427 Q	457 428 Z	457 429 S	457 430 X

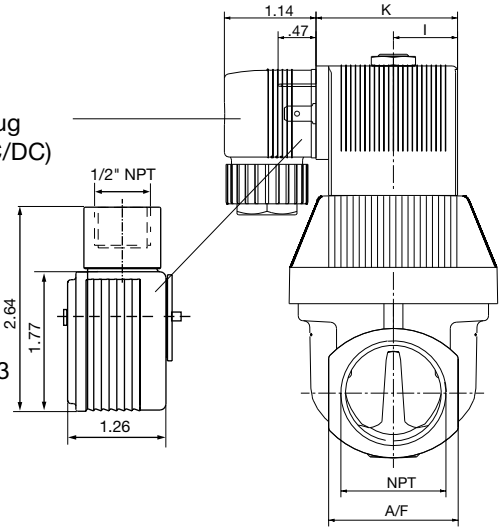
*Calculated with P = 85 PSI; ΔP = 14.7 PSI @ 60°F

Dimensions [inch]



U.L. Recognized with standard-cable plug Type 2508 (0-250 V AC/DC)

U.L. Listed with conduit-plug Type 1053 (0-250 V AC/DC)



Variable Dimensions [inch]

Threaded Port [inch]	Orifice inch	C	D	E	F	L	A/F	AC-Coil A	B	H	I	K	DC-Coil A	B	H	I	K
NPT 3/8	3/8	1.48	1.50	.79	.41	1.97	1.06	2.84	3.39	1.26	.81	1.77	2.70	3.25	1.58	.93	2.01
NPT 1/2	1/2	1.77	1.99	.95	.54	2.29	1.26	3.57	4.20	1.26	.81	1.77	3.15	3.78	1.58	.93	2.01
NPT 3/4	3/4	2.60	2.60	1.38	.55	3.15	1.62	4.12	4.93	1.26	.81	1.77	3.76	4.57	1.58	.93	2.01

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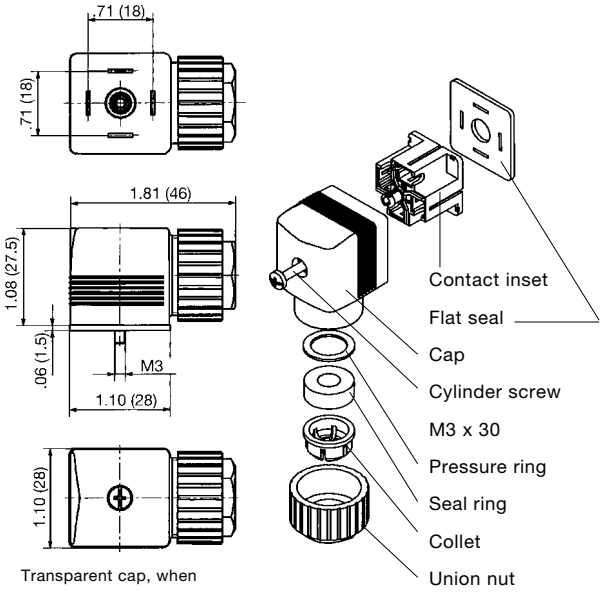
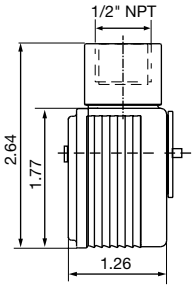
Dimensions Accessories [inch (mm)]

U.L. Recognized cable plug Type 2508



Transparent cap, when wired with LED.

U.L. Listed conduit plug Type 1053



Ordering Chart for Accessories

Device/ Accessory	Features	**Item No.**
Cable plugs[1] Type 2508	Standard cable plug, 0–250 V AC/DC (standard-delivery)[1]	008 376 N
	with LED, 12–24 V AC/DC	008 360 S
	with LED, 100-120 V AC/DC	008 361 P
	with LED + varistor, 12–24 V AC/DC	008 367 M
	with LED + varistor, 100–120 V AC/DC	008 368 W
	with LED + varistor, 200–240 V AC/DC	008 369 X

[1] **The standard cable plug (0-250 V AC/DC), Item No. 008 376 N is part of the standard delivery.**
Order optional cable plugs using separate Item No.

For additional cable plug selections, see datasheet Type 2508

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