

Proyecto de Fin de Carrera
Ingeniero Industrial

**Fiabilidad de un motor
de corriente continua**

ANEXO C: CATÁLOGOS

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Convocatoria: Septiembre 2009 (plan 94)



Escola Tècnica Superior
d'Enginyeria Industrial de Barcelona



ANEXO C. CATÁLOGOS

Contenido

Motores Buehler 1.13.044

Micro-altavoces MynTahl SWM-23R5

Osciladores Frequency Devices

Piezo-Actuadores Thor Labs

Bomba Hargraves BTC

Electroválculas Pneutronics, Serie 11-259

Silicona resistente a la temperatura Sealocrete





DC Motor Ø 52

1.13.044.XXX



1.13.044.XXX

Design	
Commutator	Copper/12-segments
RFI Protection	-
Insulation class	Winding H, otherwise A
Protection class	IP40
Commutation	carbon brushes
Armature	skewed slot
Magnet system	Permanent magnets, 2-pole
Bearings	2 preloaded ball bearings
Housing	Steel, corrosion protected
End shields	zinc die-cast on both sides

Type 1.13.044.XXX			235	236	413	414
Characteristics*						
Rated voltage	V	V	12	24	12	24
Rated power	P_N	W	47	47	56	56
Rated torque	T_N	mNm	150	150	180	180
Rated speed	n_N	rpm	3000	3000	3000	3000
Rated current	I_N	A	6.2	3.1	7.3	3.5

No load characteristics*						
No load speed	n_o	rpm	3900	3900	3900	3800
No load current	I_o	A	0.40	0.20	0.40	0.20

Starting characteristics*						
Starting torque	T_s	mNm	640	640	840	940
Starting current	I_s	A	24	12	31	16

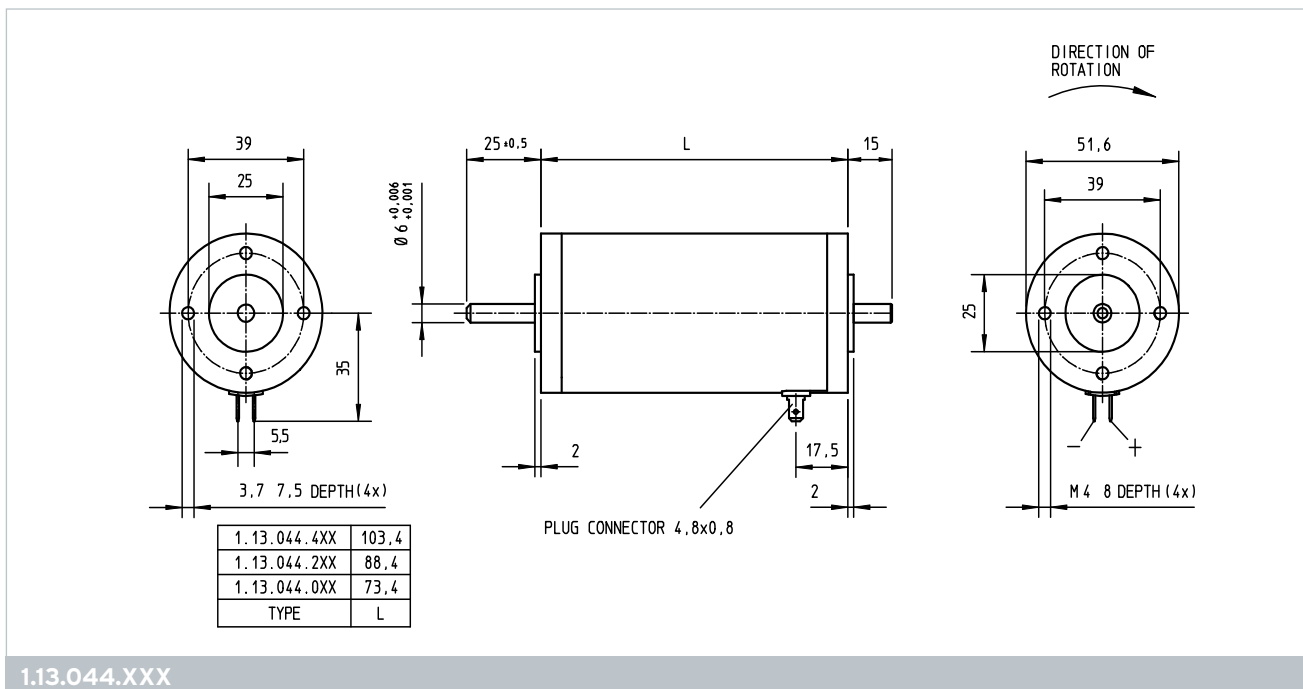
Performance characteristics*						
max. Output power	P_{max}	W	65	65	85	85
max. Constant torque	T_{max}	mNm	100	100	120	120

Motor parameters*						
Weight	G	g	765	765	940	940
Rotor inertia	J	gcm ²	180	180	250	250
Terminal resistance	R	Ohm	0.5	2.0	0.40	1.4
Mech. time constant	τ_m	ms	13	13	13	13
Electr. time constant	τ_e	ms	1.0	1.0	1.0	1.0
Speed regulation constant	R_m	rpm/mNm	6	6	4.7	4.1
Torque constant	k_t	mNm/A	28	56	27	57
Thermal resistance	R_{th1}	K/W	5.0	5.0	3.5	3.5
Thermal resistance	R_{th2}	K/W	4.5	4.5	4.0	4.0
Axial play		mm	< 0.01	< 0.01	< 0.01	< 0.01
Direction of rotation	bidirectional					

Operational conditions

Temperature range	T	°C	-10 - +70
Axial force	F_A	N	30
Radial force, 15 mm from mounting surface	F_R	N	120

* at 25° C



Customized versions

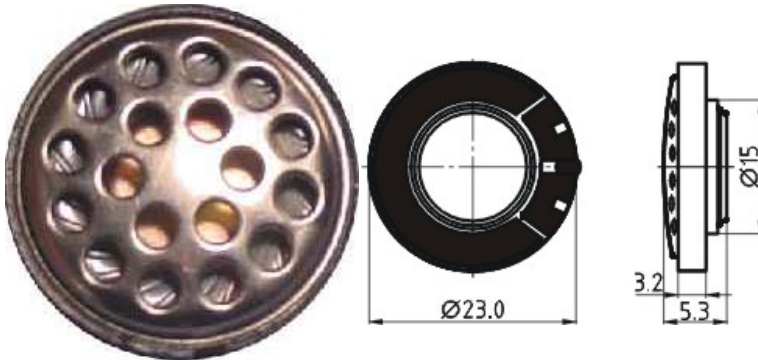
The following modifications are available upon request:

- ▶ Encoder possible
- ▶ Internal chokes and/or capacitors
- ▶ Speed adjustment by winding change
- ▶ Addition of wire harnesses
- ▶ Modification of shaft length on both ends
- ▶ Modification of shaft configuration (flat, groove, etc.)
- ▶ Assembly of gears, pinions, worms, etc.
- ▶ Assembly of adapters and mounting plates

Note: Is used with Bühler gear motor types 1.61.050.xxx, 1.61.090.xxx

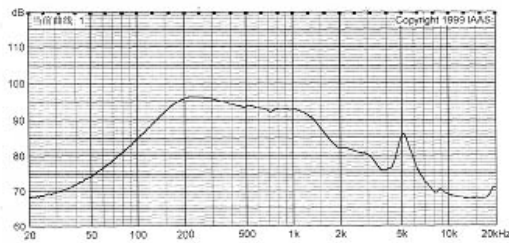
Speaker > [Mylar Speaker](#) > SWM-23R5.3-32N0.02

• [Specifications of SWM-23R5.3-32N0.02](#)



Impedance:	32 ohm (4~300 ohm available)
Power Rated (Max.):	0.02(0.03)W
Resonant Frequency(fo):	300 Hz
Frequency Range:	fo~12000 Hz
Sound Pressure Level:	84±3 dB @ 0.1M/Power Rated
Diaphragm:	PET
Frame:	Plastic
Magnet:	
Total Weight:	
Features:	
Application:	Telecommunication
Packing Details:	
Quotation:	

Test Condition: 0.18V 0.01M





D45 Series

Fixed Frequency

Sinewave Oscillator

Description

The D45 Series are fixed frequency sinewave oscillators that deliver a single phase, high purity sinusoidal output. These fully finished devices can be user specified to operate to any frequency between 100 Hz and 50.0 kHz.

Each D45 model includes provisions for the user to adjust the output amplitude over a 1 to 20 Vp-p range by external resistive or voltage programming. Over the full output range, total harmonic distortion is 0.1% to 0.3% based on frequency, while the peak-to-peak amplitude stability of any fixed level selected is 0.002 dB/°C.



Features/Benefits:

- Stable high purity sinewave output.
- Compact 1.8"L x 0.8"W x 0.3"H minimizes board space requirements.
- Adjustable output amplitude for applications requiring discrete or continuous output control.
- Plug-in ready-to-use, reducing engineering design and manufacturing cycle time.

Applications

- Reference oscillator
- Airborne equipment
- Mobile equipment
- Test Apparatus
- Telemetry Systems
- Distortion Testing



Fixed Frequency

FIXED FREQUENCY OPERATION

The output signal frequency of each D45 Series sinewave oscillator is factory calibrated to within $\pm 1\%$ of the user-specified value. Independent of frequency setting, the output amplitude is preset to 20V p-p.

To put the oscillator into operation, simply connect the power supply common, voltages ($\pm V_s$), and ground pin T2. **Pin T2 must be connected to ground in this mode of operation.**

FINE FREQUENCY ADJUSTMENT ($\pm 5\%$)

For applications requiring a more accurate frequency setting, disconnect Pin T2 from ground. Connect a Cermet potentiometer as shown in Fig. 1 for a $\pm 5\%$ frequency adjustment range.

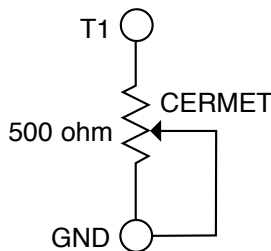


Figure 1

AMPLITUDE ADJUSTMENT (1 to 20V p-p)

For applications requiring either variable or lower level output signals, a single resistor or a dc control voltage can externally program the D45 output amplitude to any value between 1 and 20V p-p. Warning: Adjusting for outputs below 1Vp-p will cause loss of the output signal.

Sinewave Oscillator

Discrete Resistive Programming: The method shown in Fig. 2(A) provides continuous control of the output amplitude. For both methods, Equation 1 defines the value of R1 for the specific set of conditions.

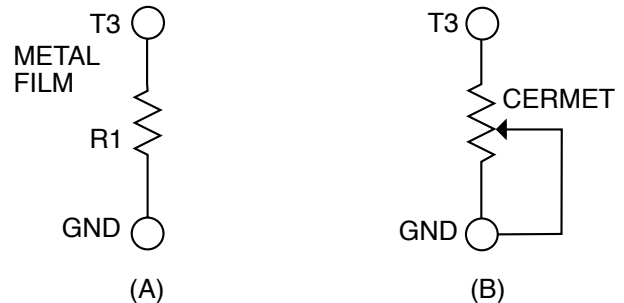


Figure 2

$$R1(k\Omega) = \frac{450V_o}{4V_s - 3V_o}$$

Equation 1

V_o = Output Voltage in V p-p
 V_s = Supply Voltage

Continuous Resistive Programming: To determine the value of potentiometer R1 in Fig. 2(B), simply insert the appropriate values into Equation 1.

Suppose for example, the required output amplitude range is 1 to 10Vp-p and the positive power supply is $+V_s = 15$ Vdc. At maximum output voltage (10V p-p) equation 1 becomes

$$R1(k\Omega) = \frac{450(10)}{4(15) - 3(10)}$$

for potentiometer R1 = 150k Ω .

Voltage Programmable Amplitude: The output amplitude of the D45 can be voltage controlled by applying dc programming voltage V_{T3} to Pin T3. The output response is found from Equation 2, below:

$$V_{T3} = \frac{V_o}{2}$$

Equation 2

where V_o is the output voltage expressed in Vp-p, and V_{T3} is the dc control voltage applied to pin T3.



D45 Series

Specifications (25°C and $V_s \pm 15$ Vdc)

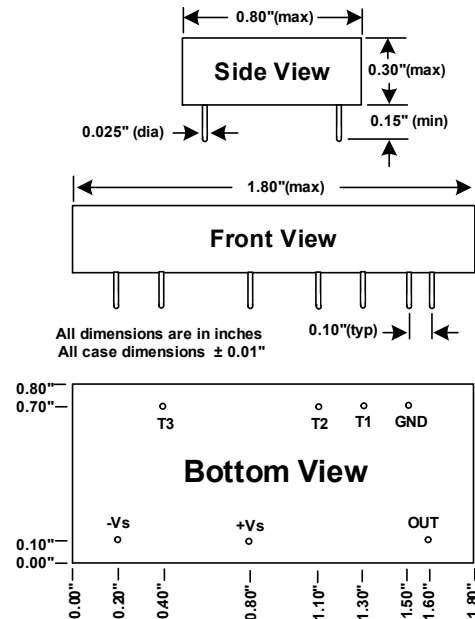
Pin-Out and Package Data Ordering Information

Oscillation Frequency (f_o)	
Range	100 Hz to 50.0 kHz
Tolerance ¹	$\pm 1\%$
External Adjustment Range	$\pm 5\%$
Frequency Stability	
Temperature	0.02%/°C
Supply/Output Amplitude Variation	0.01%/%
Output Characteristics	
Amplitude	
Preset	20V p-p $\pm 1\%$
Adjustment Range ²	1 to 20V p-p
Stability vs. Temperature ³	0.002 dB/°C
Stability vs. Supply Voltage ⁴	0.1 dB/%
Drive Capacity	
Output current @ 20V p-p ⁵	± 5 mA pk
Output Resistance @ 20V p-p	<10 Ω
Distortion ⁶	
Harmonic	100 Hz to 10.0 kHz: 0.1% (-60 dB)
	10.1 kHz to 25.0 kHz: 0.2% (-53 dB)
	25.1 kHz to 50.0 kHz: 0.3% (-50.4 dB)
Noise	
DC Power Supply ($\pm V_s$)	50 μ V rms
DC Power Supply ($\pm V_s$)	
Rated Voltage	± 15 Vdc
Operating Voltage Range	± 12 Vdc to ± 18 Vdc
Maximum Safe Voltage	± 18 Vdc
Quiescent Current	
	± 8 mA typ
	± 12 mA max.
Temperature	
Operating	0 to +70°C
Storage	-25 to +85°C

Notes:

- Externally adjusted to zero.
- All models can deliver 6V p-p into a 600 Ω load.
- The amplitude stability of a resistively programmed unit is directly proportional to the external programming resistor temperature coefficient.
- The amplitude stability of a voltage programmed unit having the programming dc voltage applied to pin T3 is 0.1dB/% V_{T3} .
- The output is short circuit protected.
- Distortion is primarily third harmonic. Specification is for resistive loading.
- How to Specify Oscillation Frequency:
Oscillation frequencies are specified by attaching a three-digit frequency designator to the basic model number. Oscillation frequencies can range from 100 Hz to 50.0 kHz.

D45 Package OUTLINE



TERMINAL KEY

V_{OUT}	Signal Output
T1	Fine Frequency Adjust
T2	Frequency Adjust Enable*
T3	Output Amplitude Adjust
$+V_s$	Power Supply Voltage, Positive
GND	Ground
$-V_s$	Supply Voltage, Negative

*Must be connected to ground when fine frequency adjustment is not required.

Ordering Information

D45-849 Hz

Oscillation Frequency ⁷

e.g., 849 Hz
25.0 kHz
50.0 kHz

We hope the information given here will be helpful. The information is based on data and our best knowledge, and we consider the information to be true and accurate. Please read all statements, recommendations or suggestions herein in conjunction with our conditions of sale which apply to all goods supplied by us. We assume no responsibility for the use of these statements, recommendations or suggestions, nor do we intend them as a recommendation for any use which would infringe any patent or copyright. PR-00D45-04

AE0203D08F SPECIFICATION SHEET

CAUTION:

**POLARITY MATTERS! RED LEAD ATTACHES TO +V,
WHITE LEAD ATTACHES TO GROUND (GND)!**

The AE0203D08F piezoelectric stack sold by Thorlabs is manufactured by NEC Corporation of Japan. These stacks consist of many piezoelectric ceramic layers that are assembled in series mechanically and in parallel electrically. To operate connect the red lead of the device to the positive (+) terminal of the voltage source, do not reverse bias.

I. SPECIFICATIONS

Displacement at Maximum Drive Voltage: 9.1 μ m +/- 1.5
Maximum Drive Voltage (short term): 150volts (apply positive voltage to red lead, reverse bias will destroy this device)

Displacement at Recommended Drive Voltage: 6.10 μ m +/- 1.5
Recommended Drive Voltage: 100 volts

Operating Temperature Range: -25 to + 85°C
Capacitance: 0.18 μ F +/- 20%
Clamping Force: 200 N
Tensile Strength: 20 N
Resonant Frequency: 138 KHz (no mechanical load)
Young's Modulus: 4.4 x 10¹⁰ N/m²
Recommended Preload: <100 N

AC or Pulsed operation causes the device the generate heat (see Figure 1)

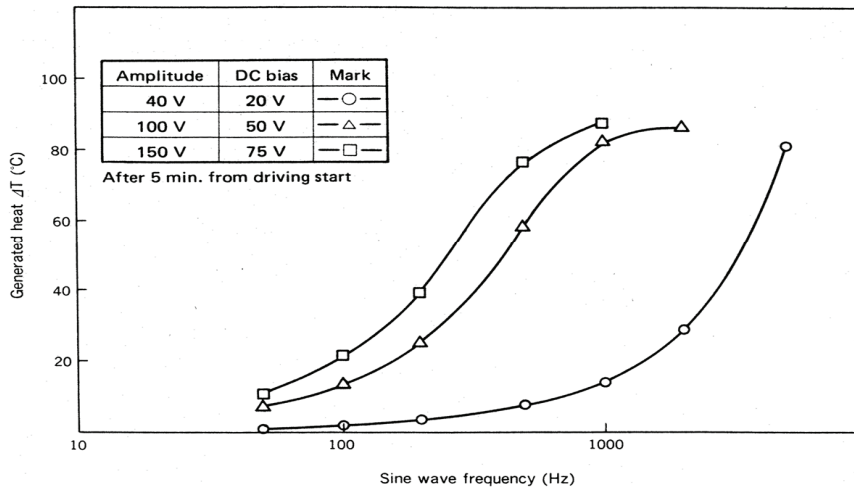


Figure 1 – Sine wave Frequency vs. Generated Heat

II. MEAN TIME FAILURE

Under the most severe operating conditions (150VDC, 40°C, 90% Relative Humidity) the mean time failure is 500 hours. When the piezoelectric is operated at the recommended operating conditions (100 VDC, 25°C, 60% RH) the mean time failure is increased to 24,500 hours.

The following formulas predict the mean time to failure in hours for specific operating parameters that are below the maximum allowed.

$$\text{Mean Time To Failure} = 500 \times (150/V)^{3.2} \times (90/RH)^{4.9} \times 1.5^{(40-T)/10}$$

V: drive voltage (VDC) HR: relative humidity (for 60% HR=60)
T: Ambient Temperature

III. CAUTIONS

Connect red wires to (+) drive voltage, do not reverse bias.

Do not exceed 150 volts, it will decrease the life expectancy of the device and in extreme cases mechanical failure will result.

Use room temperature epoxy adhesive for mechanical assembly of device.

Do not store devices about 100°C.

Do not immerse in liquid.

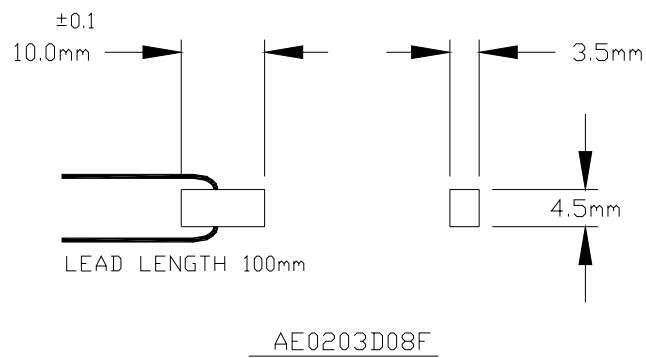
Do not use the device around combustible gases or liquids.

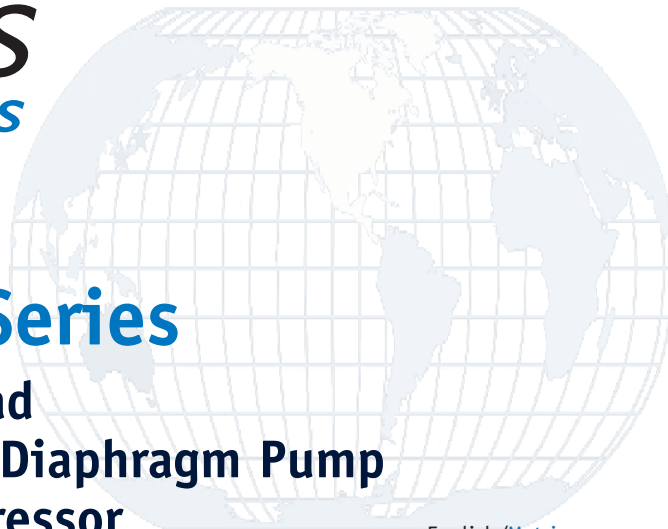
Store devices in a dry place (less than 40% RH).

Do not clean with organic solvents.

IV. ROHS Compliance Statement:

The AE0203D08F Piezoelectric stack is considered “exempt” from ROHS compliance as of 7/1/06. While all connections to the stack are made with lead-free materials, the stack itself contains lead.





Shown with short stack brushless D.C. motor

BTC Series

Single Head Miniature Diaphragm Pump and Compressor

English/Metric

Performance Specifications	Pressure* (psig/kPa)	Vacuum* (inHg/mmHg)	Free Flow (lpm)
Flat Diaphragm	0 – 30/0 – 207	0 – 23/0 – 584	3.5
Convolute Diaphragm	0 – 20/0 – 138	0 – 20/0 – 508	6.0

* Extended pressure and vacuum capabilities available upon request.

ADVANCED CAPABILITIES

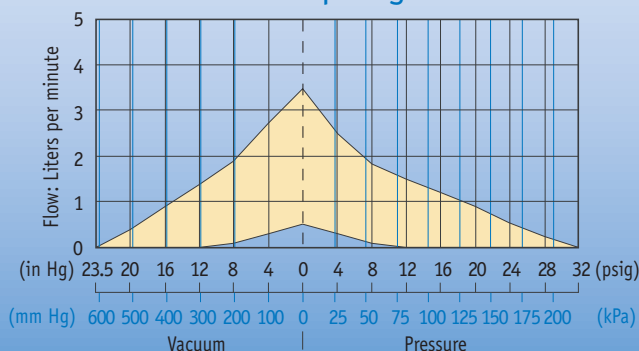
BTC Miniature Diaphragm Pumps and Compressors are a series of brush and brushless DC motor driven pumps designed to handle air and gases. The innovative, compact design incorporates leading edge technologies that allow it to operate harder, hotter, quieter and longer than existing pump designs. The BTC Series offers multiple component configurations allowing them to be used for either vacuum operation, pressure operation, or alternating vacuum and pressure operations.

SUPERIOR BENEFITS

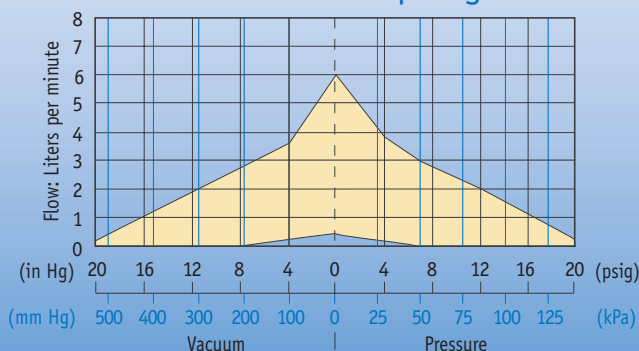
- **Highest Performance/Size Ratio:** innovative and efficient engineering designs enable the BTC Series to push the performance envelope in a lightweight, compact size.
- **Runs in Hotter Environments:** Selection of advanced materials and our proprietary elastomer diaphragms and valves allow our pumps to operate in increased temperature environments up to 158°F (70°C).
- **Performs Quieter:** Optimized head, chamber, and flow path reduce noise without compromising performance.
- **Lasts Reliably Longer:** Using our proprietary advanced diaphragm elastomer and superior brushless motor design sets the highest benchmark for service-free operation that exceeds 20,000 hours.
- **Installs Easily:** Incorporating the lightweight EZ Mount facilitates simple system assembly while dampening vibration and reducing noise levels.

OVERALL PERFORMANCE RANGE

Flat Diaphragm



Convolute Diaphragm



The above performance ranges illustrate the overall performance handling air at 800 feet (244 m) above sea level and 75°F (24°C). Performance will vary depending on barometric pressure and media temperature. Consult the factory with your specific requirements.

BTC Series

HIGH PERFORMANCE MOTOR OPTIONS

	Voltage DC	Operating Current	Motor Control
Brushless DC (BLDC)	6, 12, 24*	50 – 900 mA**	2-wire, 3-wire (Analog or PWM)
Brush DC	6, 12, 24*	50 – 900 mA**	2-wire (Analog or PWM)

* Other voltages available upon request.

** The operating current will vary depending on the motor type, voltage, flow and pressure requirements.

VERSATILE INTEGRATION CAPABILITIES

Ports are barbed for 1/8" I.D. or 3/16" I.D. flexible tubing.

Note: Durometer dependent, consult factory.

Head Configuration can be assembled in any one of four configurations (see diagram below).

Standard mounting holes are drilled to accommodate #6-20 self-tapping screws. Other options available (see diagram below for four mounting hole location configurations).

The Versatile Pump can be mounted in any position — orientation dependent.

EZ Mount vibration isolation system can be configured in several different ways to facilitate quick and easy installation.

OPERATING ENVIRONMENT

Temperature	Humidity	Media
5° – 70°C*	0 – 95% RH	Most gases and liquids

* Duty dependent. Consult factory for high temperature applications over 50° C.

WETTED MATERIALS

Diaphragm: EPDM, AEPDM*, Fluorocarbon (Viton®), Teflon/EPDM Laminate.

Valves: EPDM, AEPDM*, Perfluoro, Fluorocarbon.

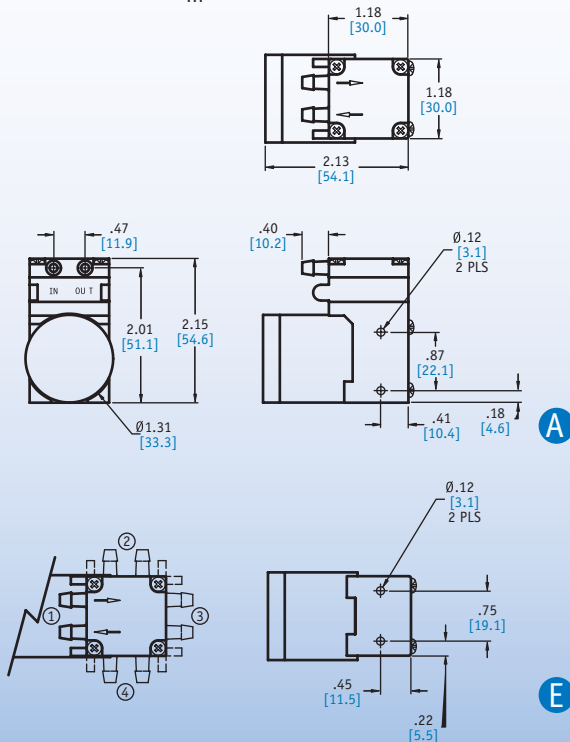
Pump Head: Vectra (Liquid Crystal Polymer)

* AEPDM is an advanced proprietary elastomer developed by Hargraves to provide greater longevity than traditional diaphragm materials for high temperature applications over 50° C.

OUTLINE DIAGRAMS - OVERALL DIMENSIONS AND MOUNTING OPTIONS

Brushless Motor

(Pump Mass - 4.5 oz_m [128 gms])

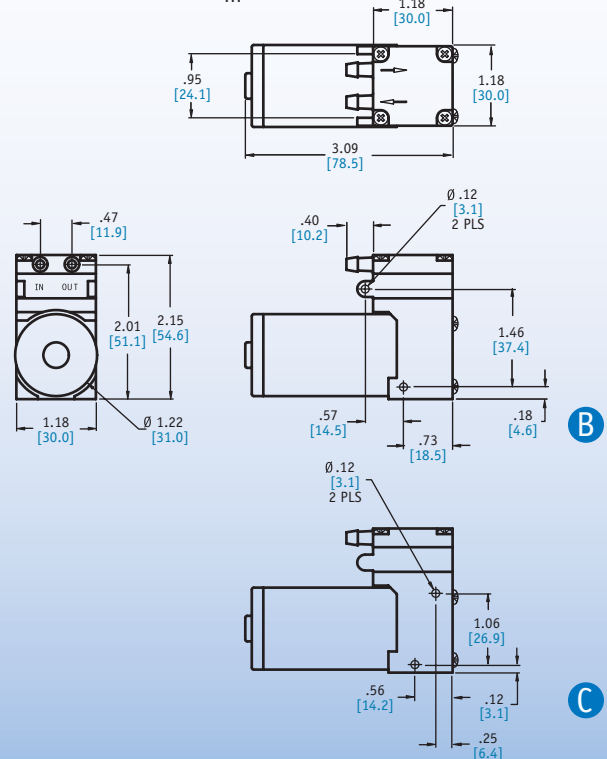


Head Configuration (#1 Head Configuration Standard)

Mounting hole options seen in views: A, B, C, E. Mounting option E standard. For additional mounting options consult the factory.

Brush Motor

(Pump Mass - 6.5 oz_m [184 gms])

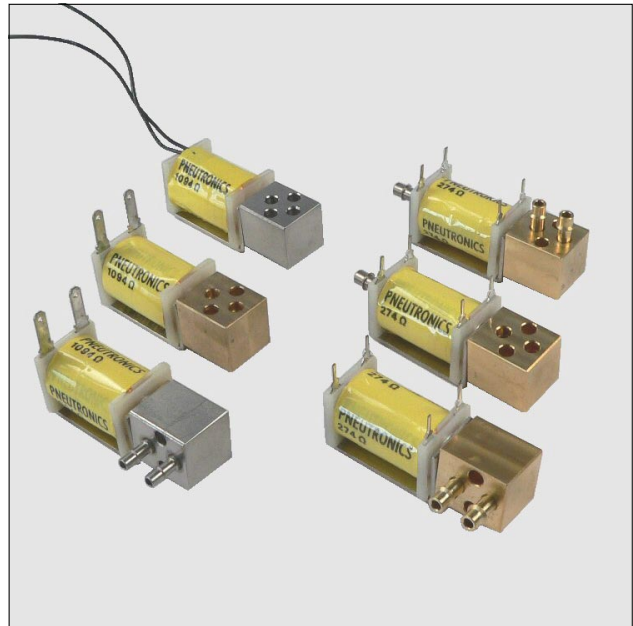


Series 11

PC mount switching solenoid valve

FEATURES

- 2-way or 3-way, 2 position valve (NO, NC & Distributor)
- Offer a discrete valve design with a 200 million life cycle rating
- Available in manifold mounting
- Provide a range of electrical coil options, including PC mountable, spade lugs, or wire leads
- Powerful enough for a range of uses that require high flow



MEDIA COMPATIBILITY

Gases and selected liquids

WETTED MATERIALS

Body:

360 HO2 brass;
302 series stainless steel (passivated)

Stem base:

385 HO2 brass;
303 series stainless steel (passivated)

All others:

FKM; EPDM; 430 FR series stainless steel (passivated); 302 series stainless steel

ELECTRICAL

Power 0.5, 1.0 or 2.0 W

Voltage 5, 12, 24 V_{DC} ± 10%

PHYSICAL PROPERTIES

Operating environment 0 to 70 °C

Storage temperature -40 to 70 °C

Length 43.9 mm (1.73 in)

Width 15.9 mm (0.625 in)

Height 17 mm (0.67 in)

Porting 10-32 tapped ports,
1/16, 5/64 or 1/8 in stem barbs

Weight 60 g (2.1 oz)

Internal volume 0.026 in³ (without fittings)

Filtration (recommended) 40 µm

Lubrication None required

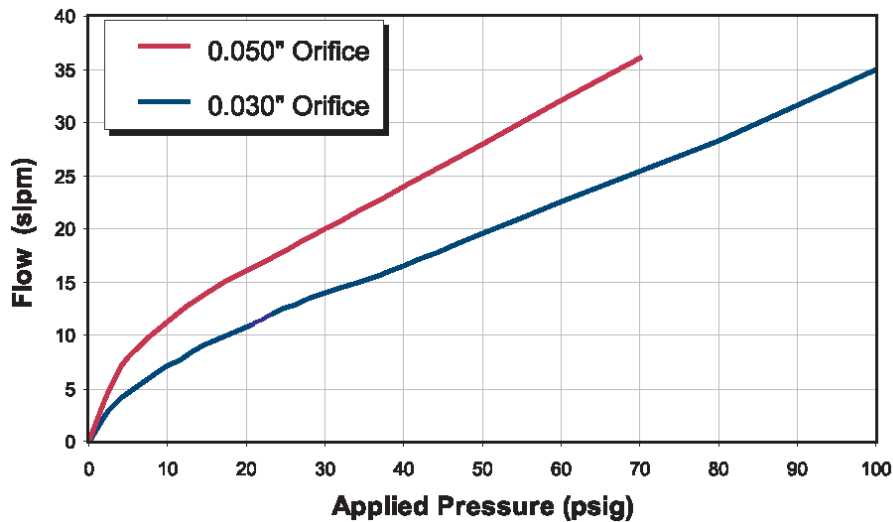
Series 11

PC mount switching solenoid valve

PERFORMANCE CHARACTERISTICS

Part no.	Pressure	Vacuum	Orifice sizes/ Equivalent C_v ¹	Leak rate ²	Response
1110...	0...100 psig	0...27 "Hg (0...13 psi)	0.030" (0.762 mm)/ 0.017 C_v	≤0.016 sccm (bubble tight)	<30 msec cycling (2 Watt)
1113...	0...50 psig				
1116...	0...25 psig				
1112...	0...70 psig		0.050" (1.270 mm)/ 0.035 C_v		<30 msec cycling (2 Watt)
1115...	0...25 psig				
1118...	0...10 psig				

FLOW CURVE (typical air flow)³

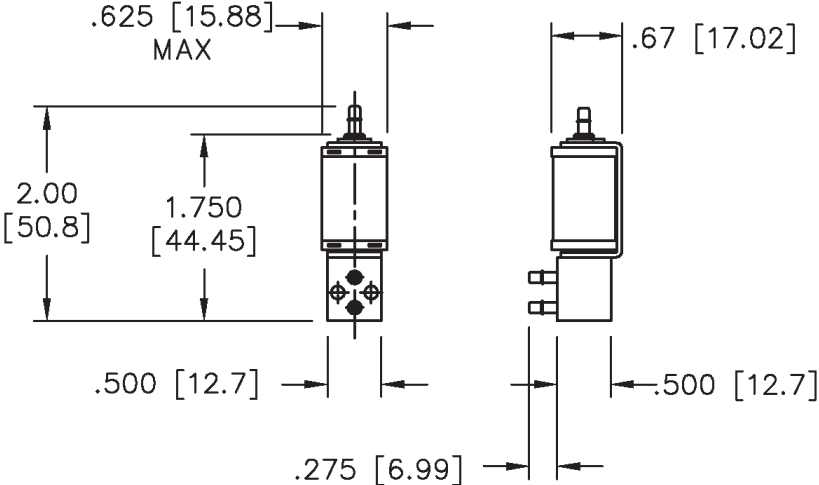


Notes:

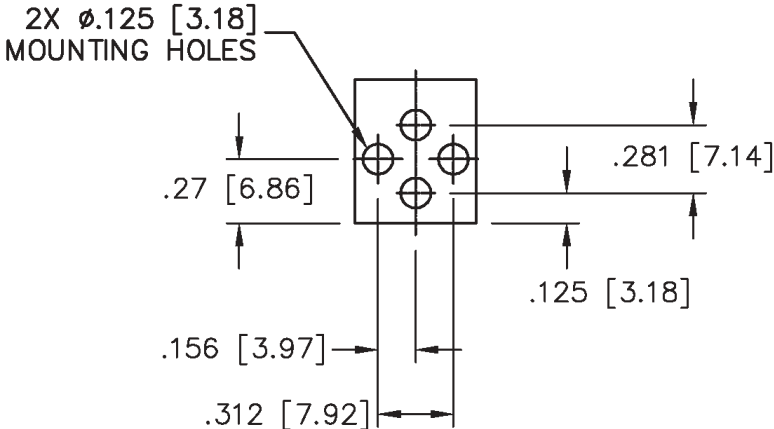
- ¹ The C_v value is the volume flow in US gallons/min under specific flow conditions and describes the relative flow capacity of a valve. If several valves with the same nominal diameter are compared, the valve with the highest C_v value has the best flow dynamics design. The equivalent european measure is the k_v value expressed in m^3/h ($k_v = 0.86 C_v$).
- ² sccm denotes Standard Cubic Centimeters per Minute. It is a unit for the flow rate at standard conditions of temperature and pressure. 1000 sccm = 1 slpm.
- ³ slpm denotes Standard Liters per Minute. It is a unit for the flow rate at standard conditions of temperature and pressure. 1 slpm = 1000 sccm.

OUTLINE DRAWING

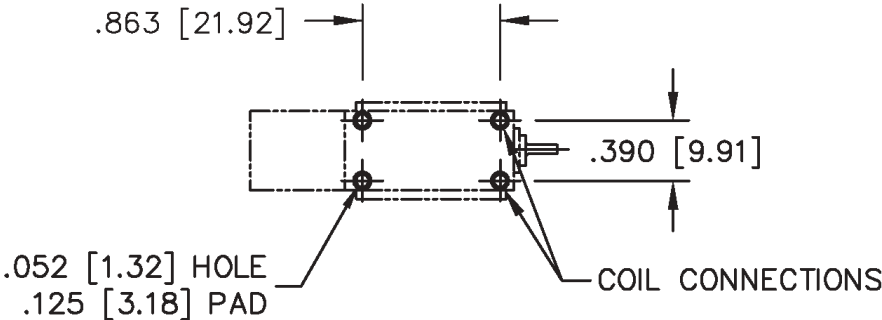
Basic dimensions



Port and mounting hole diagram



PC mounting diagram

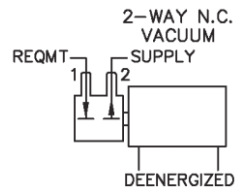
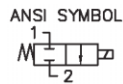
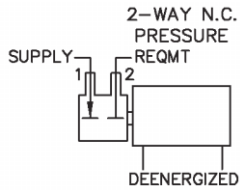


Series 11

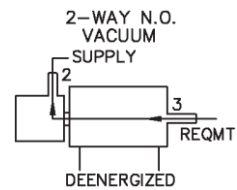
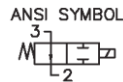
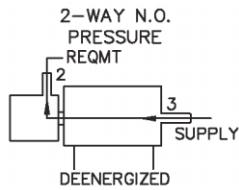
PC mount switching solenoid valve

VALVE TYPE

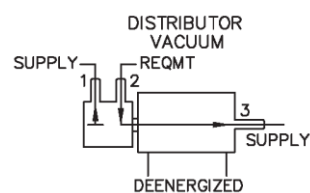
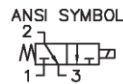
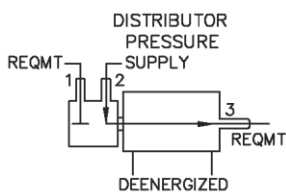
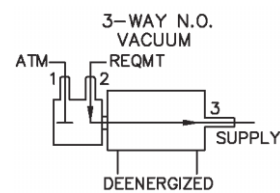
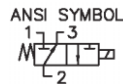
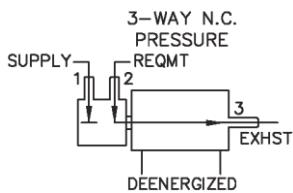
Type 1



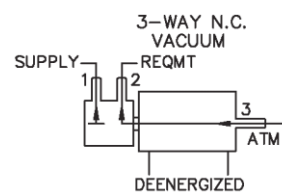
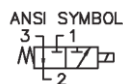
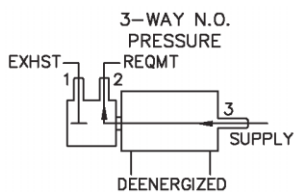
Type 2



Type 3



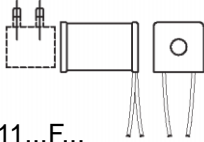
Type 4



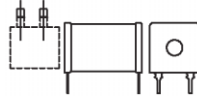
Series 11

PC mount switching solenoid valve

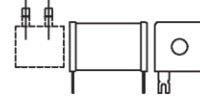
COIL STYLES



11...F...
(Wire leads, no terminals)



11...P...
(PC mount, 4 PC pins)



11...S...
(PC mount, 2 solder pads)

BODY STYLES



11...0...
(No barbs,
face seal to manifold)



11...6...
(0.062" barbs,
1/16" I.D. tubing)



11...7...
(0.078" barbs,
5/64" I.D. tubing)



11...8...
(0.125" barbs,
1/8" I.D. tubing,
1/4" O.D. max.)

STEM STYLES



11...0
(Type 1 top seat,
plugged)



11...6
(0.062" top seat,
1/16" I.D. tubing)



11...7
(0.078" top seat,
5/64" I.D. tubing)



11...8
(0.125" top seat,
1/8" I.D. tubing,
1/4" O.D. max.)

ORDERING INFORMATION

Series	Model no.			Type	Material		Voltage		Coil type	Pneumatic connection body	Pneumatic connection stem
	Options	Max. pressure	Orifice size		Coil wattage	Body	Plunger & seal				
Options	11	10: 0...100 psi	0.030" (0.762 mm)	2 W	1: 2-way NC	BV: brass	FKM	5: 5 V _{DC}	P: 4 PC pins	0: no barbs	0: type 1/ none
		12: 0...70 psi	0.050" (1.27 mm)	2 W	2: 2-way NO	SV: SS*	FKM	12: 12 V _{DC}	S: 2 solder taps	6: 1/16" barbs	6: 1/16" barbs*
		13: 0...50 psi	0.030" (0.762 mm)	1 W	3: 3-way NC or distributor	BE: brass	EPDM	24: 24 V _{DC}	Q: Quick connect	7: 5/64" barbs	7: 5/64" barbs
		15: 0...25 psi	0.050" (1.27 mm)	1 W	4: 3-way NO				F: Wire leads, 18", no terminals	8: 1/8" barbs	8: 1/8" barbs
		16: 0...25 psi	0.030" (0.762 mm)	0.5 W							
		18: 0...10 psi	0.050" (1.27 mm)	0.5 W							
						*Stainless steel				*1/16" barbs not available for 0.050" orifice	
Example:	11	10		3	BV		12	P	7	7	

Note: Not all combinations might be available. Please contact your nearest Sensortechics sales representative for further information.

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CI/SfB

Vn6

TECHNICAL DATA SHEET
PUBLISHED OCTOBER 2003

HEAT RESISTANT SILICONE

DESCRIPTION

HEAT RESISTANT SILICONE is a one component silicone sealant for high temperature applications. It is a one part acid-curing sealant which reacts with atmospheric moisture to form elastic silicone rubbers that are especially designed for high temperature applications.

USES

HEAT RESISTANT SILICONE is particularly recommended for sealing and joining in applications where high heat resistance is required for extended periods, such as oven doors and fire flues.

ADVANTAGES

- * Non-sagging behaviour for horizontal, vertical and overhead applications.
- * Solvent free, low shrinkage.
- * Fast curing at room temperature
- * Adhesion to many substrates such as glass, ceramic tiles, and enamel. Some surfaces require the use of primers.
- * Flexibility at low (-40°C) and high (270°C) temperatures.
- * Excellent resistance to weather, ozone, UV and chemicals.
- * Excellent heat resistance up to 270°C for long periods and up to 300°C for short exposures.

COLOUR: Red

PACKAGING

Available in polyethylene cartridges containing approximately 300mls.

TECHNICAL DATA

Uncured Properties	Typical data
Specific Gravity	1.03 g/cm ³
Application rate 6 mm orifice, 2 bar	230 g/minute
Sag, ISO 7390	<2 mm
Tack free time at 23°C, 50% rel. humidity	7-15 Mins
Application temperature	+5 / +40 °C
Hardness, DIN 53505	25 - Shore A
Tensile at 100% elongation, ISO8339	0.52 MPa
Tensile at break ISO 8339	0.58 MPa
Elongation at break, ISO 8339	130 %
Temperature resistance	-40 / +270 °C

This product is designed to withstand high temperatures without losing its characteristic elastic properties. The following table shows the hardness (Shore A) of the cured material after exposure to 250°C and 270°C.

Hardness, Shore A DIN 53505	250°C	270°C
After 0 hours	25	25
After 500 hours	22	15
After 1000 hours	30	27

Monitoring the tensile strength at 100% elongation of a cured sheet (14 days at 23°C / 50% rel. humidity) of 2 mm thickness over time reveals the heat stability. Even after 8 weeks at 270°C, the product acts as an elastomer.

COVERAGE/USAGE RATES:

Rectangular Joint size mm	Approx metres per cartridge
6 x 6	8.6
12 x 6	4.3
25 x 12	1

METHOD OF USE

Ensure all surfaces are clean, dry, firm and free from dust, dirt, oil, grease or other foreign matter. Friable surfaces should be cleaned and degreased. Areas beside a joint should be masked with tape for a neat finish and removed immediately after tooling. Extrude sealant into the joint ensuring complete contact with both surfaces. Smooth the sealant with a knife within 5 minutes of application. The width of the joint should not be less than 4 times the anticipated movement and have a minimum depth of 3mm.

HANDLING

HEAT RESISTANT SILICONE is an irritant as uncured product releasing acetic acid (vinegar smell) on curing. Avoid contact of the uncured material with skin, eyes and clothing. In case of contact with eyes, flush immediately with plenty of water and seek medical attention. Avoid oral contact. Use only in well ventilated areas. Keep out of reach of children and animals. For further information refer to the relevant Health and Safety Data Sheet.

STORAGE

If stored as received in a cool dry place between 5°C and 25°C the shelf life is minimum 12 months. Storage outside in freezing conditions or above 25°C should be avoided.

We endeavour to ensure that any advice, recommendation or information we may give in product literature is accurate and correct. However, we have no control over the circumstances in which our product is used and it is therefore important that the end user satisfy himself by prior testing that the product is suitable for his specific application and that the actual conditions of use are suitable. Accordingly, no responsibility can be accepted, or any warranty given by ourselves, our representatives, agents or distributors, other than that the product as supplied by us will meet our written specification. Products are sold subject to our standard conditions of sale and each purchaser and end user should at all times ensure that he has consulted our latest product instructions and safety information.

