

DESCRIPTION

The MP45-871 low pressure transducer is designed for pulmonary pressure and air flow measurement. The MP45-871 may be ordered in ranges as low as ± 2 CM H₂O full scale, which is ideal for use with pneumotachs in pulmonary flow measurement applications. The low internal cavity volume and symmetrical design of the MP45 allow fast response to small pressure changes. Other pressure ranges to ± 880 Cm H₂O are available.

The MP45 features rugged, all stainless steel construction and replaceable sensing diaphragms. This allows the operating pressure range of the MP45 transducers to be changed by the user. The MP45 withstands mechanical shock and vibration without damage.

For pulmonary measurement applications, the MP45 is used in conjunction with a Validyne carrier demodulator. The carrier demodulator provides the excitation, amplification, and filtering necessary to produce a DC output signal proportional to the flow or differential pressure sensed by the MP45. Carrier demodulators are available in a wide variety of styles from the basic CD15 to multi-channel systems is also available which includes carrier demodulators and flow-volume integration electronics for interface to medical chart recorders and XY plotters. A complete pulmonary testing set-up can be quickly assembled from standard components.

Features

- **Differential Pressure Ranges:**
 ± 2 cm H₂O to ± 880 cm H₂O
- **Rugged Stainless Steel Construction**
- **Low Internal Volume, Small Volumetric Displacement for Fast Dynamic Response**
- **Ideal for Pulmonary Applications**

Specifications

Ranges:	± 2 cm H ₂ O through ± 880 cm H ₂ O (See Diaphragm Selection Chart.)
Accuracy:	$\pm 0.5\%$ Full Scale
Hysteresis:	0.1% pressure excursion Maximum (<35 cmH ₂ O Full Scale)
Overpressure:	200% FS or 200 cm H ₂ O, whichever is greater.
Output:	25mV/V Full Scale, nominal
Inductance:	20mH each coil, nominal
Zero Balance:	Within ± 5 mV/V
Excitation	5Vrms at 5kHz
Rated:	
Limits:	30Vrms at 3kHz 1kHz to 20kHz with 20mH coils
Pressure Media:	Corrosive liquids and gases, both sides compatible with 410 Stainless Steel and inconel.
Temperature:	0 to 160°F
Thermal Zero Shift:	0.01% Full Scale/°F
Thermal Span Shift:	0.02%/°F
Pressure Cavity Volume:	0.16cc
Volumetric Displacement:	0.016cc
Pressure Connection:	1/8-27 Female NPT, and adaptor for 3/16" tubing.
Electrical Connection:	10 foot cable with WK4-21C (Cannon) Connector
Weight:	340 g
Dimensions:	See Outline Drawing

Accessories

INTERCONNECTING CABLE

P/N 7683-10-871: Transducer Extension Cable
WK4-22C to WK4-21C 10' length

MATING CONNECTORS

P/N 1310-0431-871: MP45-871 (WK4-22c-1/4)
P/N 1310-0432-871: Signal Conditioner Input Connector
(WK4-21C-1/4)

PRESSURE FITTINGS

P/N 2228-8137-871: Converts 1/8-27 NPT to 3/16" Slip-On (Nylon)
P/N 2228-8135-871: Converts 1/8-27 NPT to 3/16" Slip-On (Brass)
P/N 2228-8132-871: Converts 1/8-27 NPT to 1/8" Slip-On (Brass)

BODY BOLTS

P/N H022-0606-871: Spline Socket Cap Screws
6-32 X 3/8"

WRENCHES

P/N K955-0133-871: Bristol #S-133 Spline Wrench
P/N K950-07811: Bleed Screw Wrench

MISCELLANEOUS:

P/N 8163-871: Mounting Rod
TS 265-871: Transducer Simulator
P/N 7006-871: Bleed Screw
P/N 7007-1-871: Bleed Screw Gasket

Diaphragm Replacement Chart

RANGE DASH NO.	PRESSURE RANGE CHART					
	PSI	IN H ₂ O	KPA	TORR	CHM ₂ O	
	0.020	0.55	0.140	1.03	1.40	
14	0.032	0.89	0.22	1.654	2.25	
16	0.05	1.40	0.35	2.58	3.50	
18	0.08	2.22	0.55	4.14	5.60	
20	0.125	3.5	0.86	6.5	8.80	
22	0.20	5.5	1.40	10.3	14.0	
24	0.32	8.9	2.2	16.5	22.5	
26	0.50	14.0	3.5	25.8	35.0	
28	0.80	22.2	5.5	41.4	56.0	
30	1.25	35.0	8.6	65.0	88.0	
32	2.0	55.0	14.0	103	140	
34	3.2	90	22.0	165	225	
36	5.0	140	35.0	258	350	
38	8.0	222	55.0	414	560	
40	12.5	350	86.0	650	880	

HOW TO USE THE PRESSURE RANGE CHART

First, select the appropriate engineering units desired (PSI, IN, H₂O, KPA, TORR, CMH₂O). Find the desired full scale pressure range in this column. Then, note the corresponding **Ranged Dash Number** in the far left column. When ordering, use this number to specify the "-XX" in the part number (See "Ordering Information, below).

Ordering Information

Specify: **MP45-XX-871**

Use the Range Dash No. from the Diaphragm Selection Chart to specify the pressure range (XX).

Diaphragm Replacement Summary

Disassemble the case by removing the body bolts using an S133 Spline Wrench. Separate carefully, allowing the removal of the diaphragm. The case halves, diaphragm and ports should all be cleaned before reassembly. Place the diaphragm between the case halves which inserting and lightly tightening the body bolts. Torque the body bolts evenly to 25 In-Lbs.

After assembly, check the unit for proper balance with the carrier demodulator. Recalibrate against a suitable pressure standard for the new range.

For complete diaphragm replacement instructions, refer to the General Operating Instructions.

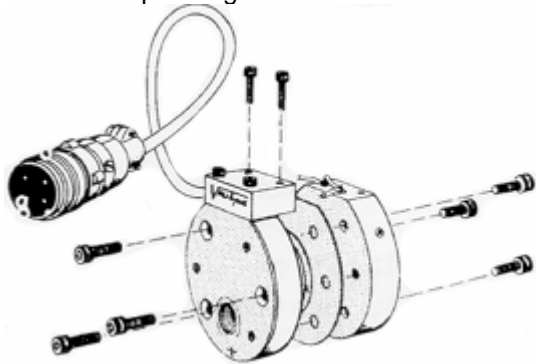


Figure 1 – Exploded View of MP45

Outline Drawing

