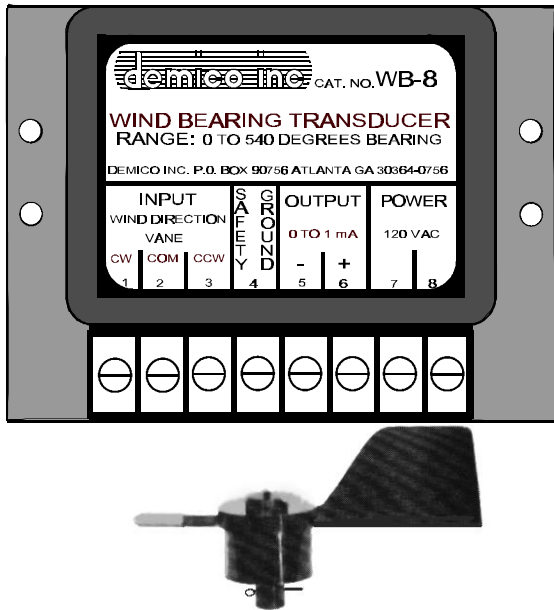


# WIND BEARING TRANSDUCER



- ◆ 0 TO 360 OR 0 TO 540 DEGREES
- ◆ LINEAR ANALOG OUTPUT
- ◆ TWO PERCENT ACCURACY
- ◆ STURDY ABS WIND VANE
- ◆ RUBY BEARINGS
- ◆ AC OR DC POWER SUPPLIES
- ◆ SIMPLE TO USE
- ◆ EASY TO MOUNT

## APPLICATIONS

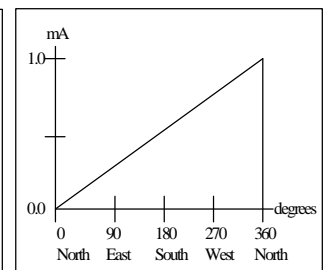
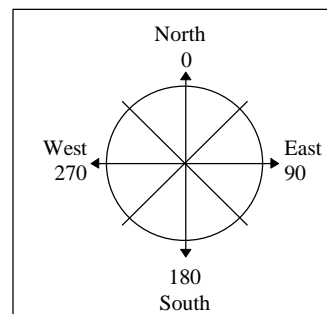
**REMOTELY MONITOR WIND DIRECTION AT SUBSTATIONS, BUILDINGS, TRANSMISSION LINES, ETC. USE REAL TIME WEATHER DATA TO MONITOR STORM SYSTEMS.**

Environmental conditions are important variables to monitor in a Generation, Transmission, or Distribution system. Correlating electrical and weather data creates a knowledge base for your locality, to enable your system to respond to environmental conditions quickly.

The Demico Wind Bearing Transducer (WB) is designed to accurately monitor wind directions throughout your Generation, Transmission, and Distribution system. The wind bearing system has a low profile, flush mounted interface enclosure which can be mounted in an RTU cabinet, or substation house. A sturdy ABS wind vane with ruby bearings is included which senses the direction of slight breezes as well as hurricane gales up to 200 mph.

Wind Bearing is described by the direction from which the wind is blowing. The eight common compass points, give general directional data, but more precise indications are expressed in the 360 degrees of a circle. As shown below, North is assigned zero degrees, and the degrees increase toward the east.

The WB can be ordered with one of two output options. The zero to 360 option is illustrated below. Note the output slope is 1 milliamp per 360 degrees. North is zero milliamps and the analog output increases as direction changes clockwise. As the analog output reaches one milliamp, the direction is



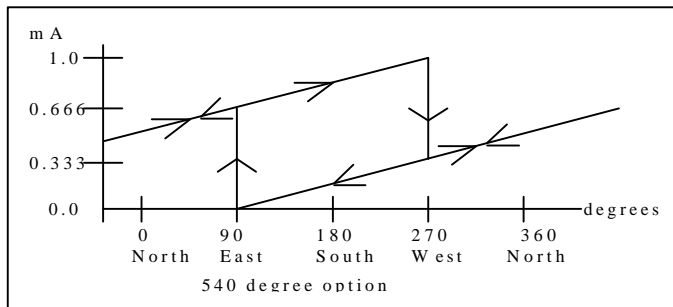
360 degree option  
Bearing = Value/Full scale count X 360

P.O. Box 90756  
Atlanta GA 30364-0756



Telephone (800) 735 0416  
Fax. (800) 735 0423

back to North again. At North there is a discontinuity which can swing back and forth between zero and one milliamp, if the wind varies a few degrees around direct North. This is *generally* not a problem in the *real* world, but the 540 degree option eliminates this potential problem. This 540 degree option requires more programming in the computer, but delivers correct data at any bearing.



The 540 degree option graph above shows a very complex output curve. Note that there are only 360 degrees denoted on the graph. The 540 degrees comes from the slope of the output curve. The slope is one milliamp per 540 degrees. Note the arrows drawn on the curve which denote the paths for clockwise or counterclockwise movement of the wind vane. Also notice that at 90 and 270 degrees there is a discontinuity, and the path is one way. This pattern is called hysteresis. Once a discontinuity path is traversed, slight movements in either direction do not cause a large change in output. This option prevents large changes in output for small movements in direction, such as can occur in the 360 degree option at North. To effectively use the 540 degree option, the computer must be capable of making the following computations and comparisons.

1. Calculate: Bearing = (Value/Full Scale)X540+90
2. Compare: Compare Bearing with 360
3. If Bearing is Less Than 360 then Bearing is correct.
4. If Bearing is Greater Than or equal to 360, then subtract 360 from Bearing.

The WB series of transducers are available with seven AC and DC power supply ranges. The standard analog output is 0 to 1 milliamp for a burden resistance from 0 to 10,000 ohms. The WB series has galvanic, or ohmic, isolation between the power supply input and analog output. Each WB is factory tested for isolation exceeding 1500 VAC between these two sets of terminals.

The non-conductive phenolic case mounts easily with two screws, and the terminal strips have built in wire

clamps for quick and reliable connections. The label clearly indicates the numbered input and output terminals for easy installation. The wind vane easily mounts on a user supplied 1/2" rod or post and should be mounted at least 10 feet from large obstructions and at a height of 6' or more for best accuracy. Care should be taken not to mount the wind vane where exhaust fans, road traffic, or other sources of air flow will affect the readings.

This transducer is designed for use in the electrically noisy substation environment and meets the surge withstand requirements of ANSI 37.90.1-1989. The manufacturing process for Demico Transducers include:

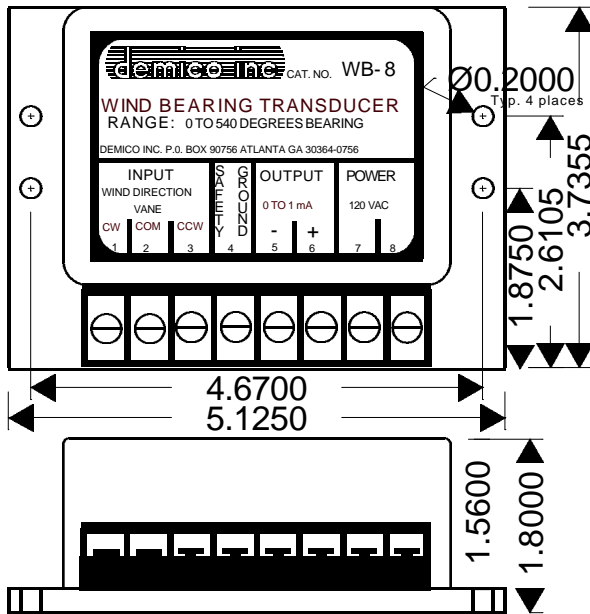
1. Printed circuit boards are coated with a polyurethane coating.
2. Every transducer is burned in for 100 hours at 110 degrees F.
3. Power is cycled every 12 hours during burn in.
4. Every transducer passes a 1500 VAC isolation test before final testing.

Demico takes these steps to ensure that our transducers provide good service over a long life. Demico's standard one year warranty includes parts and labor.

Note: Demico also has a companion Wind Speed Transducer (WS) as well as Temperature, and Ambient Light (AL) Environmental transducers. See data sheets WS, TT, and AL.

## Specifications

Range	0 to 360 Degrees
Accuracy	+/- 2 %
Output Compliance Burden	0 to 10,000 ohms
Operating Temperature	-20 to +70 degrees C
Humidity	(polyurethane coated)
Maximum power	4 VA
Power to Output Isolation	1500 VAC
Surge Withstand	ANSI 37.90.1-1989
Enclosure	Black Phenolic
Terminals	8-32 with wire clamps
Warranty	1 year Parts & Labor



### ORDERING INFORMATION



1ST LETTER = PRODUCT IDENTIFICATION LETTER  
 2ND LETTER = PRODUCT IDENTIFICATION LETTER  
 3RD NUMBER = POWER SUPPLY VOLTAGE  
 4TH NUMBER = OUTPUT SLOPE

POWER SUPPLIES		OUTPUT SLOPE
1 = 12 VDC	5 = 250 VDC	1 = 360 DEGREES
2 = 24 VDC	8 = 120 VAC	2 = 540 DEGREES
3 = 48 VDC	9 = 240 VAC	
4 = 125 VDC		