

Technical Specifications

Dual Anemometer Outputs

Pulse output from reed switch contact closure (4 pulses per revolution)
Analog output (Voltage is low level AC sine wave with frequency linearly proportional to wind speed)

Anemometer Performance

Maximum speed (230+ mph or 102.82+ m/s)
Reed switch pulse output signal range (0 to 366)
Distance constant @ 63% recovery (35.30 ft or 10.76 m)
Measuring range (0 mph to 230 mph or 0 m/s to 102.82 m/s)
Starting threshold all positions averaged (2.70 mph or 1.21 m/s)
Starting threshold @ optimum flow position (1.54 mph or 0.69 m/s)
Accuracy test range (8.95 mph to 80.53 mph or 4.0 m/s to 36.0 m/s)
Characteristic AC Output transfer function $(V[m/s] = .752 \times f[Hz] + .25)$
Characteristic Switch Output transfer function $(V[m/s] = .376 \times f[Hz] + .25)$
Accuracy within range with characteristic transfer function (.2 mph or .1 m/s)

Electrical Technical Data

Transducer voltage (2.0 VAC @ 60 cycles)
Single Coil (Bobbin wound, 4100 turns of #41 wire)
Reed switch (Voltage 200 Vdc max, current 1.0 A max)
Magnet (4-Pole Permanent Indox 1, diameter 1 inch or 25 mm x .5 inch or 13 mm)

Materials of Construction

Shaft Tower (316 stainless steel)
Shaft (Hardened 303 stainless steel)
Anemometer housing and base (316 stainless steel)
Bearings (Double shielded, hardened stainless steel balls)
Cups, arms, and rotor assembly (316 stainless steel, Titanium)

Physical Dimensions

Height (12.00 inches or 304.80 mm)
Weight (4.25 pounds or 1927.77 grams)
Body diameter (2.98 inches or 75.69 mm)
Swept diameter of rotor (5.5 inches or 139.70 mm)
Rotor cup conical cross-section (2.196 inches or 55.77 mm)

Electrical Connections and Cables

Anemometer (female M12, 6-Pole, single key, shielded cable)
Connector at cable end (male M12, 6-Pole, single key, shielded)
Cable (5 conductor, 22 gauge, PVC jacket, foil shield, drain wire)

Tools Required for Mounting, Installation, and Maintenance

Tools (7/8, 5/8 inch wrench, 1/16, 1/8, 3/32, 5/32, inch Allen wrench)
Mounting (1 inch Quick Connect Fitting as Standard or 3/4 inch Male NPT)

Environmental Specifications

Operating humidity range (0 to 100% RH)
Bearing operating temperature (-65°F to 300°F or -54°C to 148°C)
Instrument operating temperature (-67°F to 150°F or -55°C to 60°C)
Reed switch operating temperature (-40°F to 257°F or -40°C to 125°C)

Heater Specifications – Optional (C5H-1263-1-AC)

Heater power supply (15 Watts @ 12V DC, draws 1.25 Amps, tolerance of +/- 25% or 11.5-18.5 Watts, .68-10.3 Ohms)

Anemometer Protection

Optional finish for heated sensors (Modified green or black anti-ice coating on rotor and shaft tower)
Climatic protection (Protection against water, high humidity, salt spray, and dust)
Lightning and stray voltage (Surge protection incorporated in electrical components)

C5-1263-1 and C5H-1263-1 Anemometer Calibration Test Standards

ASTM D 5096-02 (Standard Test Method for Determining the Performance of a Cup or Propeller Anemometer)
ISO 17713-1 (Meteorology Wind Measurements Part 1: Wind Tunnel Test Methods for Rotation Anemometer Performance)





Richards High Speed Anemometer Wiring

Series C5 Standard and C5H Heated

Anemometer Wiring

Richards C5 and C5H Heated Anemometer Wiring							
C5-1263-1-AC (Dual Output)		C5-1263-1-SP (Dual Output)		C5H-1263-1-SP (Switch Pulse)		C5H-1263-1-AC (AC Frequency)	
Connection	Color Code	Connection	Color Code	Connection	Color Code	Connection	Color Code
Reed Switch	Pin 1 Brown	Reed Switch	Pin 1 Brown	Reed Switch	Pin 1 Brown	Coil Hz Out (+)	Pin 1 Brown
Reed Switch	Pin 2 White	Reed Switch	Pin 2 White	Reed Switch	Pin 2 White	Coil Reference (-)	Pin 2 White
Coil Hz Out (+)	Pin 3 Blue	Coil Hz Out (+)	Pin 3 Blue	No Connection	Pin 3 Blue	No Connection	Pin 3 Blue
Coil Reference (-)	Pin 4 Black	Coil Reference (-)	Pin 4 Black	12VDC Heater 1 (-)	Pin 4 Black	12VDC Heater 1 (-)	Pin 4 Black
No Connection	Pin 5 Gray	No Connection	Pin 5 Gray	12VDC Heater 2 (+)	Pin 5 Gray	12VDC Heater 2 (+)	Pin 5 Gray
Shield	Pin 6 Pink	Shield	Pin 6 Pink	Shield	Pin 6 Pink	Shield	Pin 6 Pink



Richards High Speed Wind Direction Vane Wiring

Series D5, D5C, and D5H, D5CH Heated

Wind Direction Vane Wiring

D5C, D5CH, D5 and D5H Series Wind Direction Vane Wiring							
D5C-1263-1		D5CH-1263-1		D5-1263-1		D5H-1263-1	
Connection	Color Code	Connection	Color Code	Connection	Color Code	Connection	Color Code
				Excitation (+)	Pin 1 Brown	Excitation (+)	Pin 1 Brown
				Azimuth Ref. (-)	Pin 2 White	Azimuth Ref. (-)	Pin 2 White
				Signal (Sig)	Pin 3 Blue	Signal (Sig)	Pin 3 Blue
				No Connection	Pin 4 Black	12VDC Heater 1 (-)	Pin 4 Black
				No Connection	Pin 5 Gray	12VDC Heater 2 (+)	Pin 5 Gray
				Shield	Pin 6 Pink	Shield	Pin 6 Pink