



Casella CEL offers a diverse range of highly sophisticated sensors to monitor a variety of environmental parameters from wind and temperature to radiation and cloud base. Other environmental parameters such as water characteristics and gas detectors may also be fitted. Many of these sensors have been designed and manufactured in-house based upon many years of experience in the transducer market.

Sensors can be supplied as part of an environmental monitoring system, such as the

Automatic Weather Station or separately, as part of a customer's monitoring project. All transducers are supplied with individual calibration details and with a limited amount of interconnecting cable. Longer cable lengths are available on request.

Due to the large number of sensors available, only a small selection of those most commonly used is shown here. Please contact the Casella CEL sales office for a full list and specifications.

WINDSPEED ANEMOMETER

Principles of Operation

Rotational speed is monitored using a non-contact optical chopper design. An infra-red light source and an optical sensor provides a 0-5 volt pulse output. Frequency of this output is directly proportional to the wind speed.

GMR WINDVANE

Principles of Operation

The new Casella CEL Wind Direction sensor incorporates the very latest technology using the principle of Giant Magneto Resistive effect (GMR).

This Magnetic sensing method offers accurate, and frictionless sensing together with high quality anodised aluminium construction. This guarantees functional reliability even under the harshest of environmental conditions and offers considerable cost savings to the end user.

Heater option also available for extension of operating environments.

Specification	WINDSPEED ANEMOMETER	GMR WINDVANE
Transducer type	Optical Encoder	GMR solid state system with microcontroller
Max windspeed	75m/s	75m/s
Starting velocity	typically 0.3m/s	
Distance constant	3.5m/s	typically 2.5 m
Output calibration	12.75 Hz/m/s	
Output signal	0-5v pulses	
Non linearity	<0.6%	
Resolution		1 degree
Aligning Threshold		0.8m/s for dgr offset
Damping ratio		0.25
Distance constant		typically 2.5 m
Undamped natural wavelength		2.2 m
Electrical angle		0-359 degrees – no deadband at north
Accuracy	± 0.3m/s below 3m/sec, ±1% over 3m/s	< ± 2 degrees
Supply voltage	7 to 28VDC	7 to 28VDC
Power consumption	3mA	3mA
Stabilisation time	< 1 sec from power up	< 1 sec from power up
Operating temp range	- 20° to 70°C	- 20° to 70°C
Heater option	24V DC / AC 47 ohms 12W	24V DC / AC 47 ohms 12W
Ordering information		
178031C	Standard OEM Anemometer (4.5m wire only)	
178032C	Standard OEM Anemometer with heater (4.5m wire only)	
178033C	Anemometer with conduit (2.55m conduit, 3.25m wire)	
178034C	Anemometer with conduit and heater (2.55m conduit, 3.25m wire)	
178035C	Standard OEM Direction (4.5m wire only)	
178036C	Standard OEM Direction with heater (4.5m wire only)	
178037C	Direction sensor with conduit (2.55m conduit, 3.25m wire)	
178038C	Direction sensor with conduit and heater (2.55m conduit, 3.25m wire)	
178050B	Signal Conditioning Interface	
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