SONIC CORPORATION

3-D ULTRASONIC ANEMOMETER-THERMOMETER Model:DA-700

> *SONIC's Ultrasonic can measure 3-D Wind Velocity and Temperature in fast response*
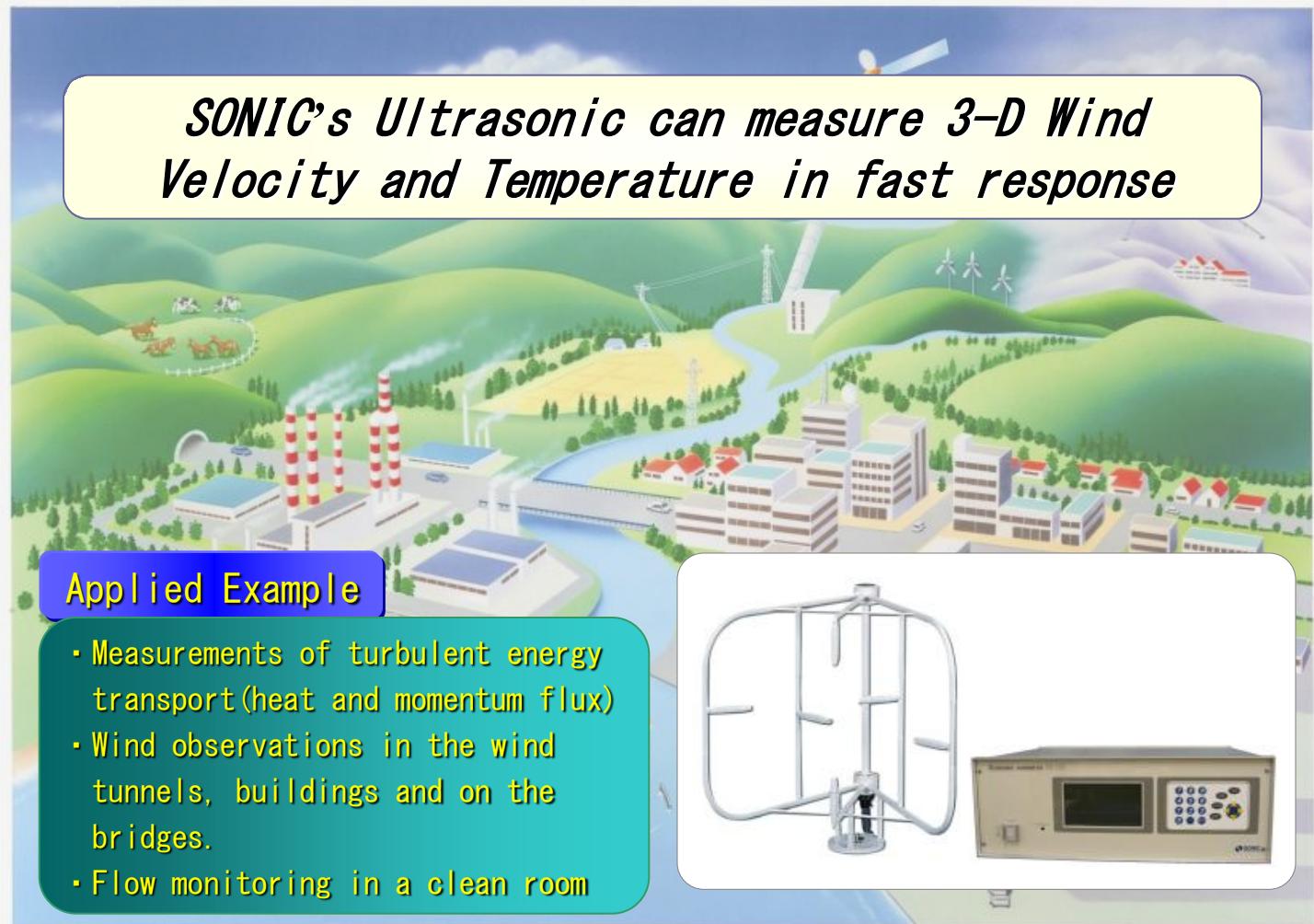
Applied Example

- Measurements of turbulent energy transport(heat and momentum flux)
- Wind observations in the wind tunnels, buildings and on the bridges.
- Flow monitoring in a clean room

Features

- ◆ Digital processing using DSP provides high reliable data

- ◆ Ultrasonic can measure minimum winds from 0m/s without moving parts

- ◆ SONIC's algorithm is not affected by temperature change

- ◆ Lightning protection has been enhanced by selecting surge protective devices

- ◆ Added operation of 3-sec/arbitrarily averaging and elevation angle calculation

- ◆ Arbitrarily set-up data output of serial and 8ch analog signals

|	Ultrasonic Anemometer	Ultrasonic Thermometer
Measurement Method	Time shared transmission/reception switching of ultrasonic pulse	
Processing Method	Difference calculation method of reciprocal during ultrasonic pulse propagation time	Sum calculation method of reciprocal during ultrasonic pulse propagation time
Range	TR-61A・61C・62AX type probe　:　0〜30m/s TR-61B type probe　　　　　:　0〜60m/s TR-90AH type probe　　　　:　0〜20m/s TR-90T type probe　　　　　:　0〜10m/s TR-92T type probe　　　　　:　0〜10m/s	Sound virtual temperature　: -10〜40℃ 　　　　　(Please consult for deviations)
Calculation Item	Ai,Bi,Ci,Xi,Yi,Wi,Ui,θi,γi X3,Y3,W3,U3,θ3,γ3 Xm,Ym,Wm,Um,θm,γm ※ A,B,C:axis vel., X,Y,W:componet vel., U:horizontal vel., 　θ:wind direction,γ:elevation 　i:instantaneous, 3:3-sec average, m:mean value	Ti,$\triangle$Ti T3,$\triangle$T3 Tm,$\triangle$Tm ※ T:sound virtual temperature, $\triangle$T:temperature fluctuation 　i:instantaneous, 3:3-sec avarage, m:mean value
Processing Accuracy	1%	1%
Resolution	0.005m／s	0.025℃
Repetition of Measurement	20 cycle/sec	
Averaging Time	0.1,0.25,0.5,1,2,3,5,10,20,30sec, 1〜15min (1min step)	
Output Signal / Digital RS-232C	Baud rate: 9600, 19200, 38400bps selectable,　Output: 20cycle／sec, 4 items (ex. X,Y,W,T) selectable	
Output Signal / Analog / OUT1	Component : 0〜±1V／0〜10m/s　max±10V	Sound virtual temperature : 0〜±1V／0〜±50℃　max±2V
Output Signal / Analog / OUT2	Component　　　: 0〜±1V／F.S Horizontal wind: 0〜 1V／F.S Wind direction : 0〜 1V／F.S Full scale Component　　　 : 0〜±1,2,5,10,15,20,30,40,50,60,70,80,90m/s Horizontal wind: 0〜1,2,5,10,15,20,30,40,50,60,70,80,90m/s Wind direction : 0〜360,540deg	Sound virtual temperature : 0〜±1V／F.S Fluctuating temperature　 : 0〜±1V／F.S Full scale Sound virtual temperature : 0〜±50,100,120℃ Fluctuating temperature :　set-up temperature〜±5, ±10℃ 　(-99.99 < set-up temperature < +199.99℃ selectable)
LCD Display	240×128 dots with backlight　8 items display　(selectable)	
Protection Circuit	Protection for excess current and lightning	
Power Source	AC100〜240V±10% 50/60Hz	

Configuration

	Type	quantity	remarks
Main Unit	DA-700	1 unit	-----
Probe	TR-***	1 unit	Selectable
Converter	CA-70/75	1 unit	depend on Probe
Cable	JCD-70/JCW-90	1 pc.	20m (typical)

Probe Type	Range	Span	Application	Converter
TR-61A※	30m/s	20cm	Turbulence, Energy/water budget etc	CA-70
TR-61B	60m/s	20cm	General, Building, Bridge etc	CA-70
TR-61C※	30m/s	20cm	Turbulence, Energy/water budget etc	CA-70
TR-62AX※	30m/s	10cm	Turbulence, Wind tunnel etc	CA-70
TR-90AH	20m/s	5cm	Vegetation, Wind tunnel etc	CA-75
TR-90T	40m/s	5cm	Clean room, Wind tunnel etc	CA-75
TR-92T	40m/s	3cm	Small scale turbulence etc	CA-75

TR-61A (20cm SPAN)　TR-61B (20cm SPAN)　TR-61C (20cm SPAN)　TR-90AH (5cm SPAN)
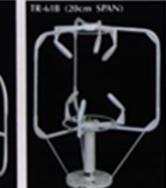
※Contact our sales staff for the special order probes.

Dimensions

● Main unit(DA-700)

● Converter for indoor(CA-75)

● Converter for outdoor (CA-70)
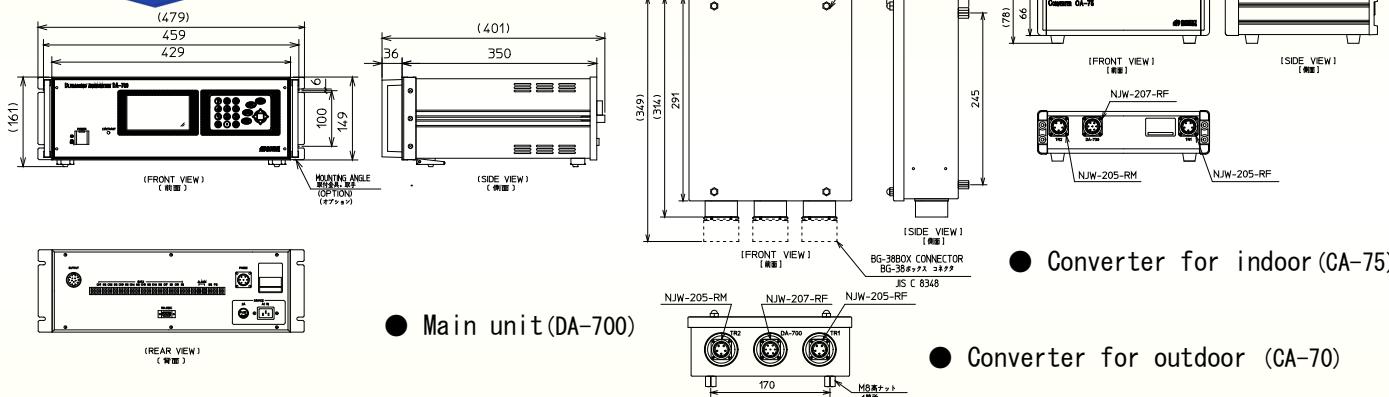
⚠ **CAUTION FOR SAFETY : Please read surely INSTRUCTION MANUAL before operating**
●Specification is subject to change without prior notice for improvement.