

# ZPulse<sup>®</sup> Doppler Current Sensor

A rugged, true vector-averaging sensor for measuring current speed and direction in the sea.

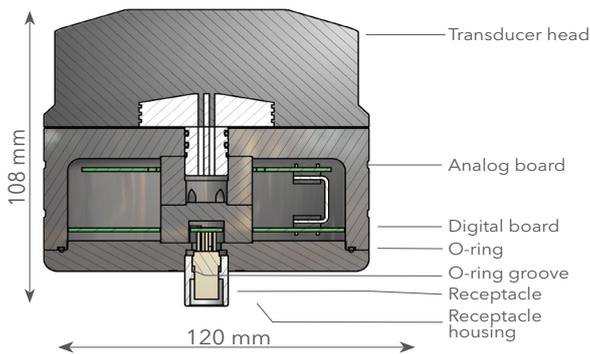
#### Features ZPulse Doppler Current Sensor:

- Unique ZPulse multi-frequency acoustic technology improves data quality, sampling speed and reduces power consumption
- Smart sensor for easy integration on the SeaGuard platform
- Built in solid state three axis tilt compensated compass
- Direct readout of engineering data
- Fast sampling rate
- Low power consumption
- Insensitive to fouling
- Low maintenance needs
- 4420/4520/4830/4930 model: AiCaP and RS-232 output
- 4420R/4520R/4830R/4830R model; RS-422 output
- 4830/4930/4830R/4930R including temperature

The ZPulse Doppler Current Sensor (DCS) is a single-point current sensor primarily intended to be used with the Aanderaa SeaGuard platform to form a Recording Current Meter (RCM). It is designed for commercial as well as research use.

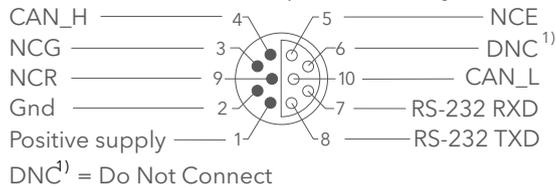


# Specifications ZPULSE® DOPPLER CURRENT SENSOR



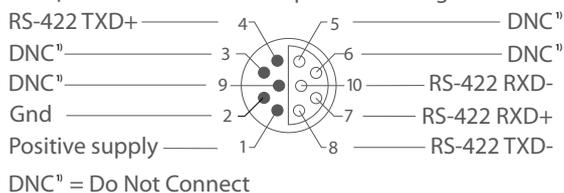
## PIN CONFIGURATION 4420/4520/4830/4930

Receptacle, exterior view; pin = ● bushing = ○



## PIN CONFIGURATION 4420R/4520R/4830R/4930R

Receptacle, exterior view; pin = ● bushing = ○



## Technical Details

<b>Current Speed:</b> (Vector averaged)	
Range:	0–300cm/s higher range on request
Resolution:	0.1mm/s
Mean Accuracy:	±0.15cm/s
Relative:	± 1% of reading
Statistic precision (std):	0.3cm/s (ZPulse mode), 0.45cm/s <sup>1)</sup>

<b>Current Direction:</b>	
Range:	0–360° magnetic
Resolution:	0.01°
Accuracy:	±3° for 0-15° tilt ±5° for 15-35° tilt

<b>Temperature</b> (only 4830/4830R/4930/4930R):	
Range:	-5°C to +40°C
Resolution:	0.01°C
Accuracy:	0.1°C
Settling Time (63%):	30s

<b>Tilt Circuitry:</b>	
Range:	0-90°
Resolution:	0.01°
Accuracy:	±1.5°

<b>Compass Circuitry:</b>	
Resolution:	0.01°
Accuracy:	<2° (RMS)

<b>Acoustics:</b>	
Frequency:	1.9 to 2.0MHz
Power:	25 Watts in 1ms pulses
Beam angle (main lobe):	2°

<b>Interfaces:</b>	
4420/4520/4830/4930:	AiCaP protocol, RS-232
4420R/4520R/4830R/ 4930R:	RS-422
RS-232/RS-422 Output:	9600 baud, 8 data bit, No parity, 1 stop bit, Xon/Xoff

<b>Maximum cable length:</b>	
RS-232:	15m
RS-422:	1500m

<b>Installation distance:</b>	
From surface:	0.75m
From Bottom:	0.5m

Supply Voltage:	6–14 Vdc
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Operating Temperature:	-5 to +50°C
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<b>Depth Capability:</b>	
4420/4830:	300m
4520IW/4930IW:	3000m
4520DW/4930IW:	6000m

Electrical Connection:	10-pin plug
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<b>Material and Finish:</b>	
4420/4420R:	Durotong, POM
4830/4830R:	Durotong, POM, epoxy coated titanium
4520/4930/4520R/ 4930R:	Durotong, epoxy coated titanium

1) Standard deviation based on 300 pings

**Specifications subject to change without prior notice.**

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