

# Electro-magnetic current meter for deep ocean

# INFINITY-Deep AEMD-USB



Measuring currents in deep water



- Operational in extremely clear water
- 6000m depth rating
- Robust design (no moving mechanical parts)
- Low background noise suitable for weak flows
- Long-term deployment



JFE Advantech Co., Ltd.

# INFINITY-DEEP

AEMD-USB

## ■ Description

INFINITY-Deep is an autonomously deployable data logger for current speed measurements in the deep oceans. The currents in the deep oceans are very weak. It is too hard to accurately measure the deep water currents by some ADVs (Acoustic Doppler Velocimeters) that detect the Doppler-effect by scatter with the suspended particles in the water, because the concentration is very low. INFINITY-Deep measures 2-D current data through a magnetic field according to Faraday's law. Therefore, even if the suspended particles do not exist around the sensor, it can provide the accurate current data. The depth rating is 6,000m. Compared to INFINITY-EM, the instrument has a depth and a tilt sensors to monitor mooring status. Also, the battery capacity doubles for long-term current velocity measurements.

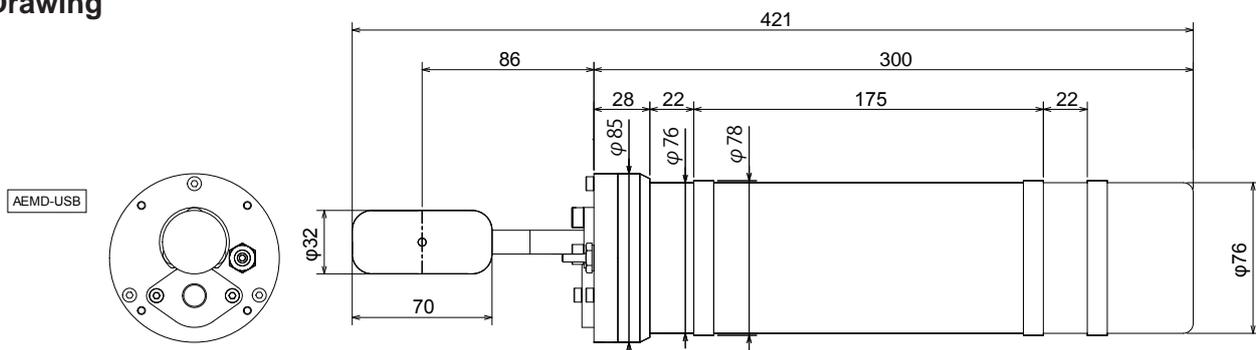
## ■ Sensor specifications

Parameter	Velocity	Direction	Temperature	Depth	Tilt
<b>Principle</b>	2-D electromagnetic velocity sensor	Hole element	Thermistor	Semiconductor sensor	2-D type
<b>Range</b>	0 to $\pm 100\text{cm s}^{-1}$	0 to $360^\circ$	-3 to $45^\circ\text{C}$	0 to 60MPa	0 to $\pm 30^\circ$
<b>Resolution</b>	$0.02\text{cm s}^{-1}$	$0.01^\circ$	$0.001^\circ\text{C}$	$0.002\text{MPa}$	$0.01^\circ$
<b>Accuracy</b>	$\pm 1\text{cm s}^{-1}$ or $\pm 2\%$ (0 to $\pm 60\text{cm s}^{-1}$ )	$\pm 2^\circ$	$\pm 0.02^\circ\text{C}$ (0 to $35^\circ\text{C}$ )	$\pm 0.3\%\text{FS}$	$\pm 1^\circ$

## ■ Logger specifications

<b>Memory medium</b>	miniSD card
<b>Data capacity</b>	1GB provided as standard
<b>AD converter</b>	16 bit digital conversion
<b>Measuring mode</b>	Continuous mode, Burst mode
<b>Measuring interval</b>	0.1 to 1.0 s (0.1 s increment), 1 to 600 s (1 s increment)
<b>Burst sampling interval</b>	1 to 1,440 min (1 s increment)
<b>No. of samples</b>	1 to 18,000
<b>Battery</b>	CR-V3 lithium / 3.3Ah (four maximum)
<b>Communication</b>	USB 2.0 ( Ver. 1.1 compatible)
<b>Current consumption</b>	100mA
<b>Housing material</b>	Ti-6Al-4V
<b>Dimensions</b>	$\Phi 85\text{mm} \times 421\text{mm}$ (protection guard not included)
<b>Weight</b>	Approx. 4.1kg in air, Approx. 2.4kg in water
<b>Depth rating</b>	6,000m depth equivalent

## ■ Drawing



※ Dimensions are in mm. ※ All specifications on this leaflet are subject to change without notice.

 **JFE Advantech Co., Ltd.**

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