



KONGSBERG

μPAP



μPAP 201-C COMPACT ACOUSTIC POSITIONING

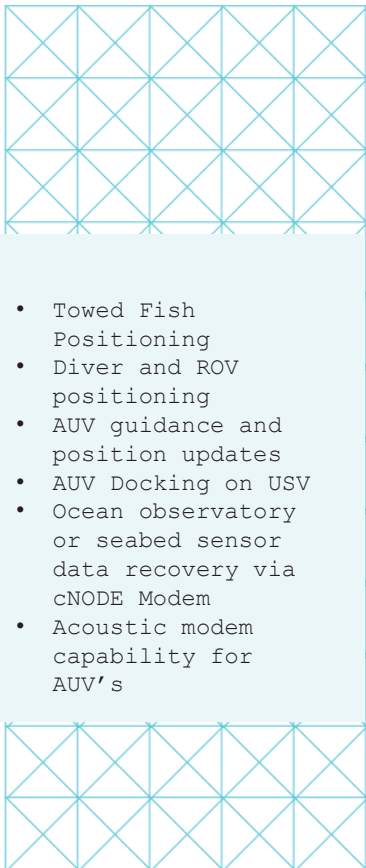
The μPAP 201-C is a system designed for tracking ROV's, tow fish, divers and other subsea objects. The units includes all parts needed for a full system in a compact transducer housing well suited for USV installation.

The μPAP is an integrated SSBL acoustic positioning solution complete with motion sensor and processing unit integrated in one subsea housing. The system is remotely controlled from an external computer via Ethernet access where the user can control which transponders to be used or send data for acoustic modem transfer to a modem on a subsea vehicle.

The system can also be remotely operated by use of APOS over remote connection. APOS is the standard operator station software for HiPAP and μPAP systems.

- 560 Cymbal Wideband channels
- Modem capability
- SSBL and LBL positioning
- Fast Track mode
- Responder mode
- Integrated motion sensor
- Easy setup
- Electronic beam control
- Compatible to cNODE
- Controlled over Ethernet





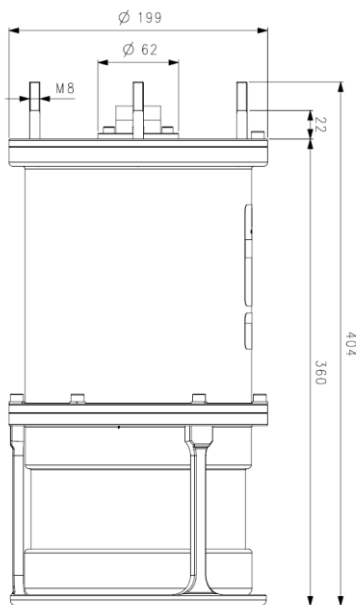
- Towed Fish Positioning
- Diver and ROV positioning
- AUV guidance and position updates
- AUV Docking on USV
- Ocean observatory or seabed sensor data recovery via cNODE Modem
- Acoustic modem capability for AUV's

Application

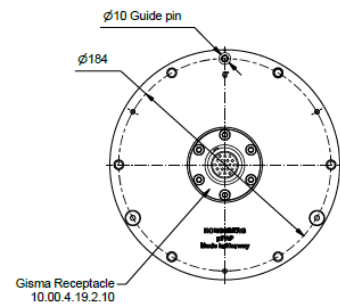
APOS, the operator station for μPAP®, provides the full range of functions for acoustic positioning and data communication. μPAP benefits from the Cymbal acoustic protocol and all functions that are available for the HiPAP products are also available for μPAP.

μPAP has full LBL calibration and positioning capabilities and can be used for position box in, calibration and positioning. The system is offering the user a wide range of transponder channels and cNODE® transponder models for depths down to 4000 metres.

μPAP has built in motion sensors for compensating the position for vessels roll and pitch movements. These models have no need for calibration of roll and pitch alignments but need to calibrate for alignment to the vessels' gyro compass. The system can be interfaced to the vessel heading sensor and GNSS system. Data output to users are available in established formats.



μPAP 201



μPAP Lid

24VDC
1PPS



Output:

- Position
- Roll & Pitch
- Heading

Input:

- GNSS
- Remote Control

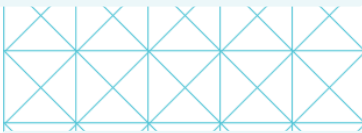
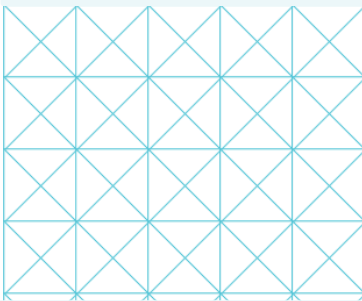


TECHNICAL DATA

Model	Motion Sensor Accuracy	System Position Accuracy ⁽¹⁾
201-C-m30 Part no.:465865	R/P: 0.08° Range ± 180°	0.26° /0.45 %, Range: ± 0.02 m
201-C-X Part no.:465078	R/P: 0.2° Range ± 180°	0.32° /0.56 %, Range: ± 0.02 m
201-C Part no.:465079	NA	0.25° /0.45 %, Range: ± 0.02 m

TECHNICAL DATA – All models

Frequency	20-30 kHz (MF)
Operational coverage ⁽³⁾ Main coverage	±90° ±80°
Receiver beam	22°
Source level (re 1µPa)	190 dB
Range capability (m) ⁽²⁾	4000+
Navigation Channels	560 Cymbal, 56 FSK, cNODE Compatible
Operation mode	SSBL, LBL, acoustic modem
Transducer connector	UV-RECEPT 19p MALE
Transducer deployment depth	< 100 m
Temp. operating/Storage	0°C to +35°C / -20°C to +70°C
Storage humidity	95 % relative, non-condensing
Vibration	5-100 Hz, 5-13.2 Hz ±1.5 mm, 13.2-100 Hz 1 g
Power	24 V DC nominal (18-36 V DC) 25W nominal, Max 75W
Connection	Terminals for power RJ45 for Ethernet All interfaces over Ethernet Cable part no 422611
Housing Weight	Bronze/Stainless Steel 16 kg



- 1) Accuracy is in X and Y direction
- 2) Range capability is depending on line of sight, transponder's transmit power setting, vessel's acoustic system and influence of ambient noise and ray bending.
- 3) Operational coverage defines the sector where acoustic positioning and communications are operational. Main Coverage is the sector where maximum range and angular accuracy can be achieved. Outside the main coverage range and elevation angular accuracy are reduced, therefore a depth input for aiding is recommended

Specifications subject to change without any further notice.

Doc no: 481073 Rev B