



HiPAP 352P-H/352P-5



HiPAP 352P-MGC

June 2019

HIPAP® 352P

PORTABLE HIGH PRECISION ACOUSTIC POSITIONING

The HiPAP 352P is a portable system designed for tracking ROV's, tow fish, divers and other subsea objects at several thousand metres range. The system operates in SSBL mode where it measures the distance and direction to subsea transponders and computes a 3D position in local coordinates or in geographical coordinates. HiPAP 352P is designed to be a portable system for easy installation on surface vessels or other surface units. APOS, the operator station for HiPAP 352P, provides the full range of functions for acoustic positioning and data communication. HiPAP 352P benefits from the Cymbal acoustic protocol and all functions that are available for the HiPAP products are also available for HiPAP 352P. HiPAP 352P 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 meters. HiPAP 352P 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. The HiPAP 352P-MGC contains a motion sensor and a gyro compass. This model has no need for calibration to determine roll, pitch and heading alignments. To meet various demands from the market, HiPAP 352P transducer is available in several models with respect to motion and heading sensors.

HiPAP 352P-H

Built-in MRU-H motion sensor for roll/pitch compensation.

- No heading information

HiPAP352P-5

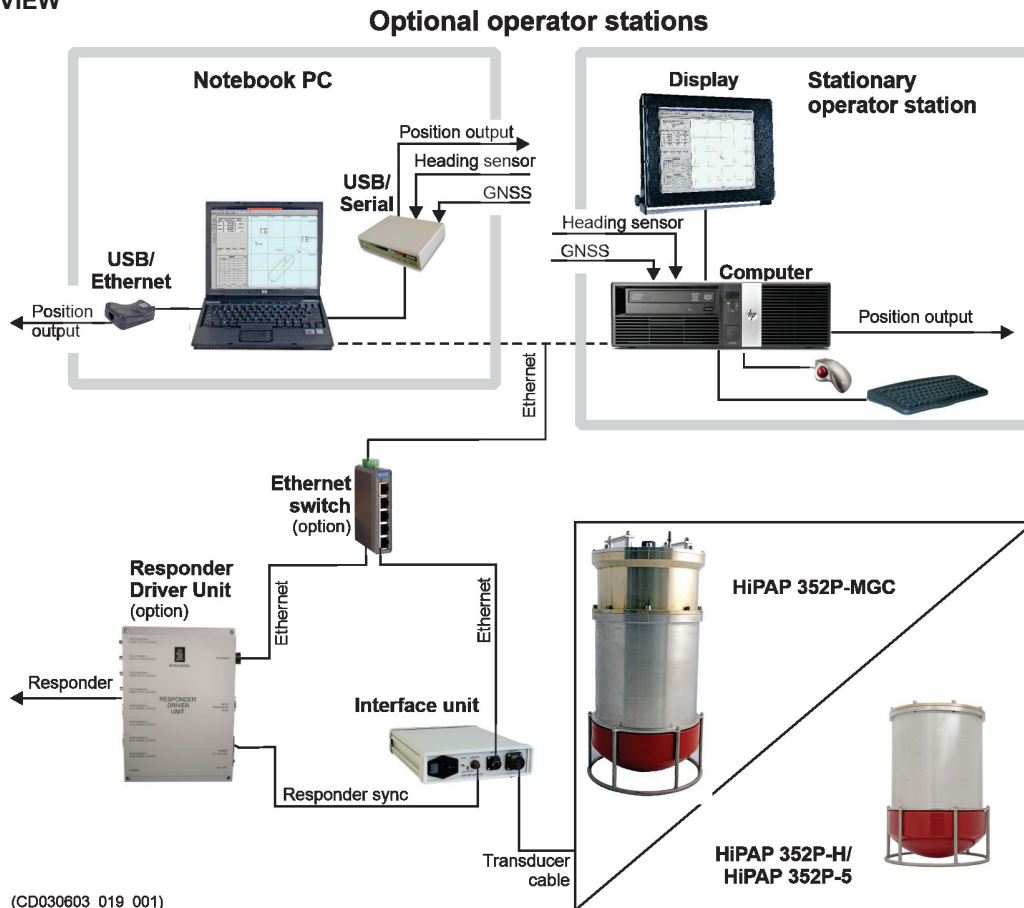
Built-in MRU-5 motion sensor for roll/pitch compensation.

- No heading information

HiPAP 352P-MGC

Built-in MGC RT inertial measurement unit for roll/pitch and heading compensation. No need for calibration to determine roll, pitch and heading alignments.

SYSTEM OVERVIEW



TECHNICAL SPECIFICATIONS

Transducer

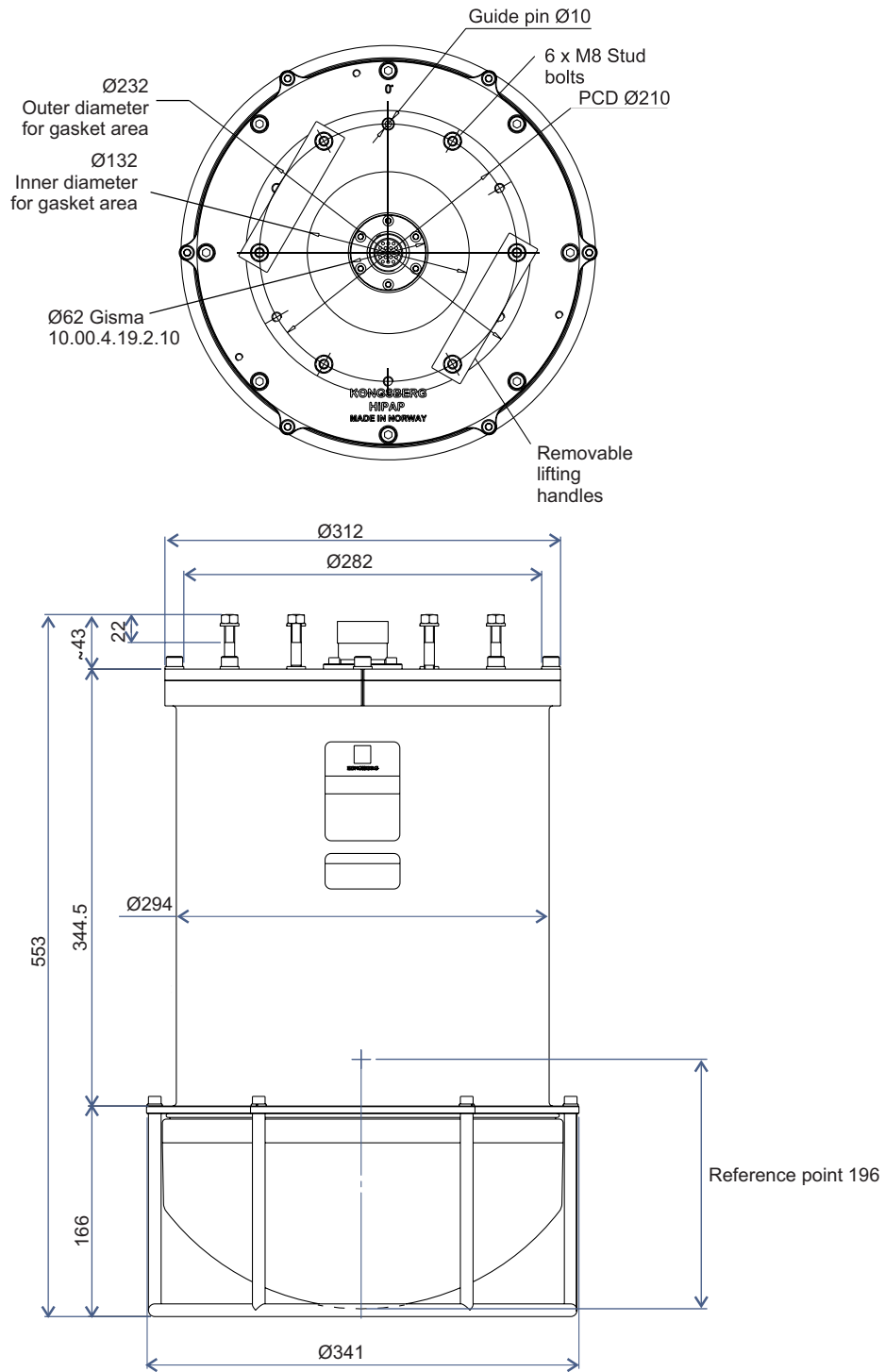
MAX. OPERATING TEMPERATURE IN AIR AND WATER	35°C
STORAGE TEMPERATURE	-40°C to +70°C
DEPTH RATING	50 m
VIBRATION RANGE	5-100 Hz
VIBRATION EXCITATION LEVEL	5-13.2 Hz ±1.5 mm, 13.2-100 Hz 1 g

System Accuracy

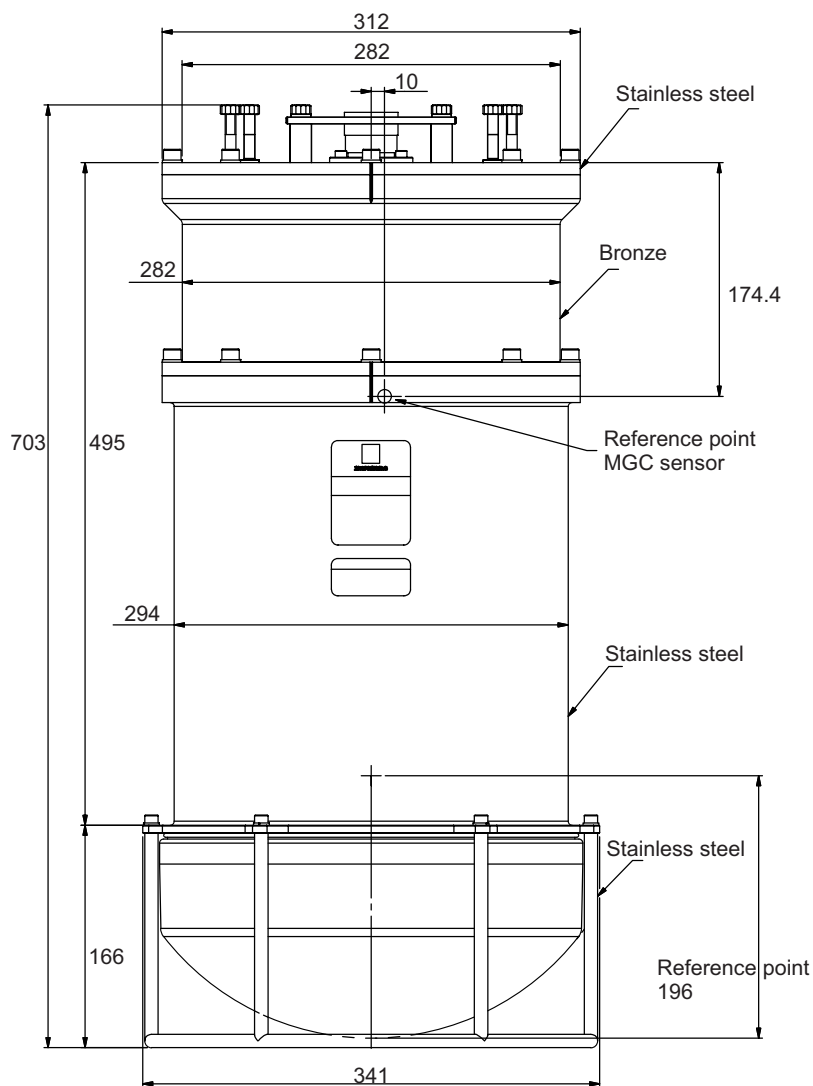
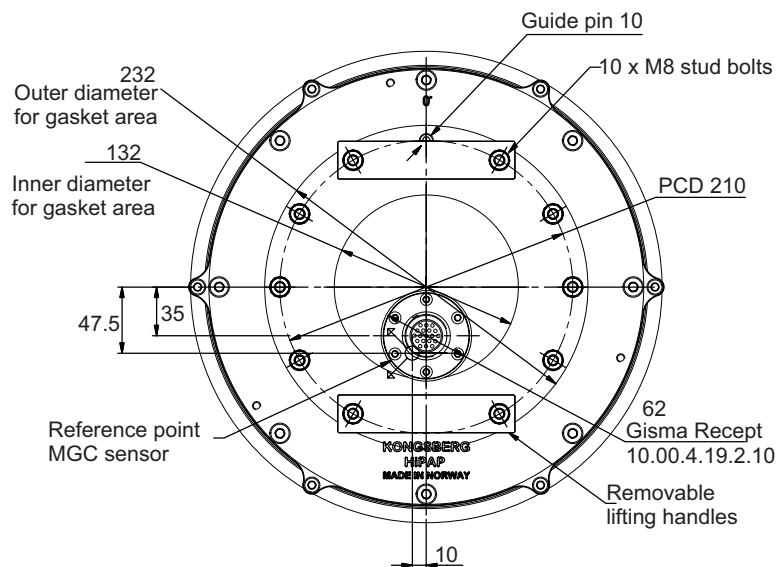
MODEL	352P-H	352P-5	352P-MGC
MOTION SENSOR (°)	0.05 Range ±180°	0.02 Range ±180°	0.01 Range ±180°
HIPAP ONLY (°) S/N [dB Rel. 1µPa]	0.1	0.1	0.1
TOTAL (°), (1 σ)	0.11	0.1	0.1
% OF SLANT RANGE (1 σ)	0.19	0.17	0.17
RANGE ACCURACY, CYMBAL [m]	0.02	0.02	0.02
RECEIVER BEAM [°]		15	
OPERATIONAL COVERAGE [°]		±90	
MAIN COVERAGE [°]		±80	

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. Whilst within the main coverage, range is up to 5000 m, operational tests show ranges out to 1000 m at 80 degrees or near the horizontal. The signal to noise ratio 20 dB is within the signal bandwidth.

OUTLINE DRAWING - HiPAP 352P-H and 352P-5



OUTLINE DRAWING - HiPAP 352P-MGC



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