

# ACTIVE FRONT END (AFE)



KONGSBERG

## KONGSBERG MARITIME PROPULSION SYSTEMS

### Active Front End (AFE)

Kongsberg Maritime water cooled frequency converters are specially designed for marine installations, where there are special demands regarding ambient conditions, and high power density.

Kongsberg Maritime water cooled frequency converters are based on the “active front end” technology to avoid harmonic distortion and can transfer power in both directions.

The drive can be used for induction, synchronous and permanent magnet AC motors.

#### Kongsberg Maritime low voltage frequency converters

##### Benefits

- No need for phase shift transformers and will therefore save space, weight and installation costs
- Low harmonic distortion
- 4 quadrant power flows with adjustable limits for motoring and generating gives short ramp times in both directions
- Power factor correction or constant power factor
- User friendly with graphical HMI interface and alarm history recording and data loggers
- S-ramps, programmable ramps and constant power ramps options
- Rpm, torque or power control of motor
- Fieldbus interface
- Motor control for induction motor, synchronous motor and permanent magnet motor
- Redundant solution
- Open loop/closed loop easy change over
- Anti spin/adaptive power limit
- Easy commissioning, I/O testing and standardized parameter settings, without advanced motor tuning
- Several load reductions/control input options
- Load control and load reduction integration to BPS
- Redundant system both on AFE and motoring possible to operate with reduced output
- High number of ships sailing with Kongsberg Maritime AFE frequency converters, since 1998

#### GENERAL TECHNICAL DATA

- Supply voltage: 380-500VAC or 525-690VAC
- Power range: 400 - 5700kW
- Ambient temperature: 0 (no frost) - 45°C
- Cooling water: FW 5 - 37°C
- Degree of protection: IP22
- System pressure: 1,5 Bar



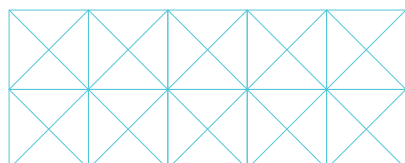
General arrangement with external cooling circuit

### Technical data AFE frequency converter 380-500 VAC

DRIVE	POWER 440V [KW]	MAX CURRENT [A]	HEIGHT [MM]	WIDTH [MM]	DEPTH [MM]	WEIGHT [KG]
AFE-6505	400	615	2038	1172	812	1285
AFE-11505	700	1090	2038	2156	812	1475
AFE-13705	900	1300	2038	2156	812	1530
AFE-16405	1100	1560	2230	2156	812	1595
AFE-20605	1300	1960	2230	2156	812	1660
AFE-23005	1500	2190	2230	2156	812	1710
AFE-27405	1700	2615	2230	4268	1004	4365
AFE-32805	2000	3115	2230	4268	1004	4485
AFE-41205	2500	3910	2230	4268	1004	4605

### Technical data AFE frequency converter 525-690 VAC

DRIVE	POWER 69V [KW]	MAX CURRENT [A]	HEIGHT [MM]	WIDTH [MM]	DEPTH [MM]	WEIGHT [KG]
AFE-7506	700	700	2038	2156	812	1605
AFE-9206	900	900	2038	2156	812	1805
AFE-13006	1200	1200	2038	2156	812	1855
AFE-17006	1600	1600	2038	2156	812	2150
AFE-18406	1750	1750	2038	4268	1004	3885
AFE-20606	1950	1950	2038	4268	1004	4015
AFE-23606	2200	2200	2038	4268	1004	4025
AFE-26006	2500	2500	2230	4268	1004	4265
AFE-30006	2800	2800	2230	4268	1004	4305
AFE-34006	3000	3000	2230	4268	1004	4305
AFE-39006	3500	3500	2230	5804	1196	5850
AFE-45006	4000	4000	2230	5804	1196	5895
AFE-51006	4300	4300	2230	5804	1196	5895
AFE-60006	5200	5200	2230	7724	1196	7675
AFE-68006	5700	5700	2230	7724	1196	7735



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