

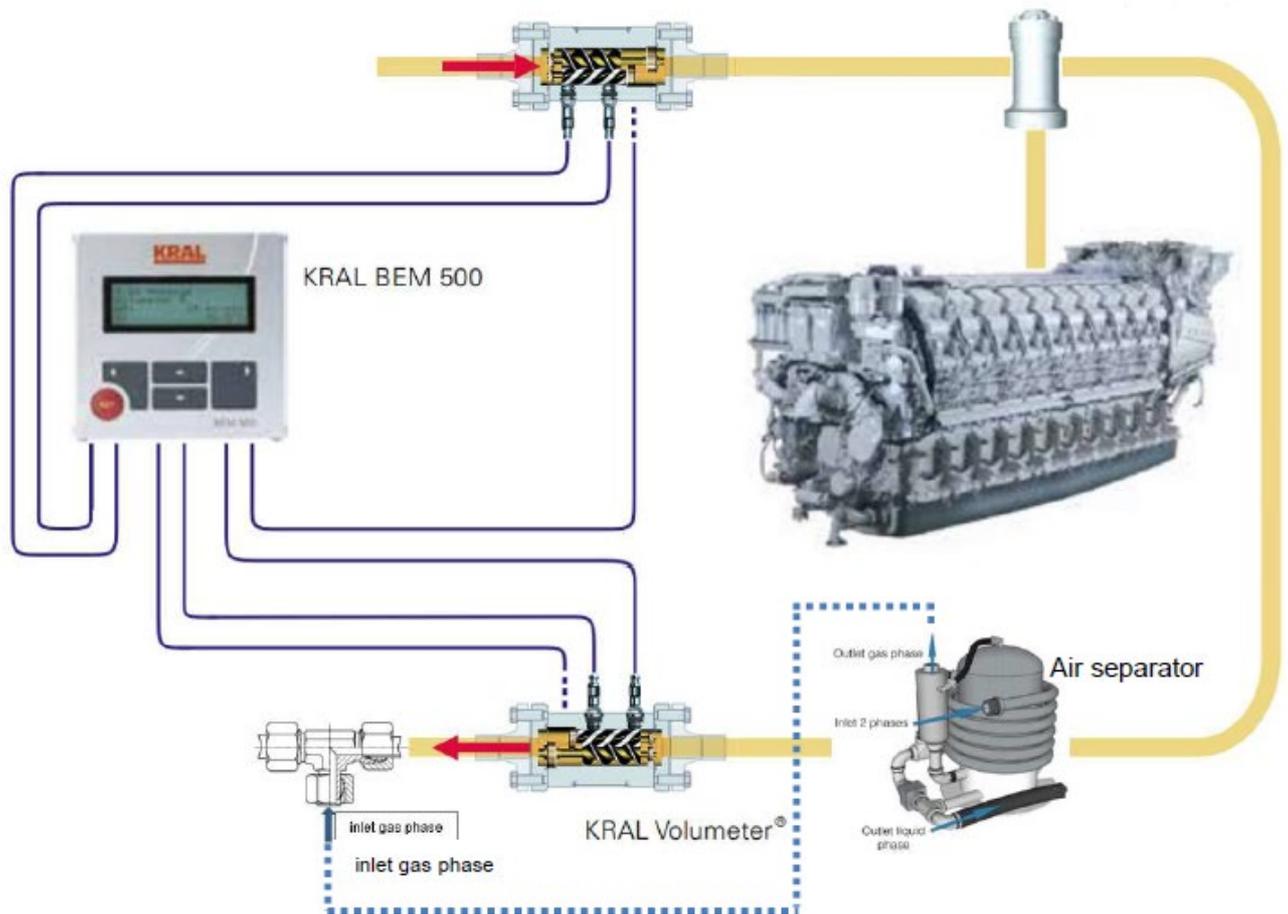


KRAL Fuel Consumption Measurement System With Air Separator in the Return Line.

For precise measurement, one KRAL flowmeter must be installed in the supply line and one in the return line. For each engine, two KRAL flowmeter are required. The difference between the supply and return flow quantities indicates the consumption of fuel. The difference is calculated in the KRAL BEM 500 electronic units. KRAL temperature compensation takes account of the temperature difference between the supply and return flows. Very precise, variance-corrected measured values are thus ensured. The benefit of this type of installation is accurate, very fast consumption measurement.

However, in some cases KRAL has experienced challenging conditions in the fuel system, which can influence a precise measurement, because of fuel contained with air. This was mainly observed for Cummins engines.

Therefore KRAL does recommend the installation of a proper air separator in front of the flowmeter. The 2-phase fuel/air flow enters the inlet of the separator. By passing the coils the fuel and air are separated. Therefore a separate outlet is discharging the air while the fuel remains in the fuel line going through the flowmeter. To ensure a closed and safe system, the air outlet will be connected with an inlet after the flowmeter and is getting back in the fuel line. This will grant a proper measurement for only the fuel flow and having a safe system as the separated air won't just be vented into the atmosphere but is getting back into the fuel line after the flow measurement is done.



First stage of patented separation can manage varying flow rates



The product is then conditioned by two other stages of separation

