

EFFICIENT PRESSURE BOOSTING MADE SIMPLE BY GRUNDFOS



COMPOUND ENERGY SAVINGS AT PART LOAD OPERATION

The story behind the savings

Many pumps system applications have a variable flow rate requirement and spend the majority of operation time in a much lower part load condition compared to design condition. Multiple pump systems offer increased hydraulic efficiency at part load.

The Grundfos ECM MLE motors exceed IE5 motor efficiency standards, set by the International Electrotechnical Commission, currently the highest efficiency level worldwide for electrical motors. NEMA premium efficient motors are equal to IE3 level, so these motors represent two levels above NEMA premium. The result of this increased efficiency is reduced energy consumption/operating costs by 7-9%, based on a typical domestic water load profile.



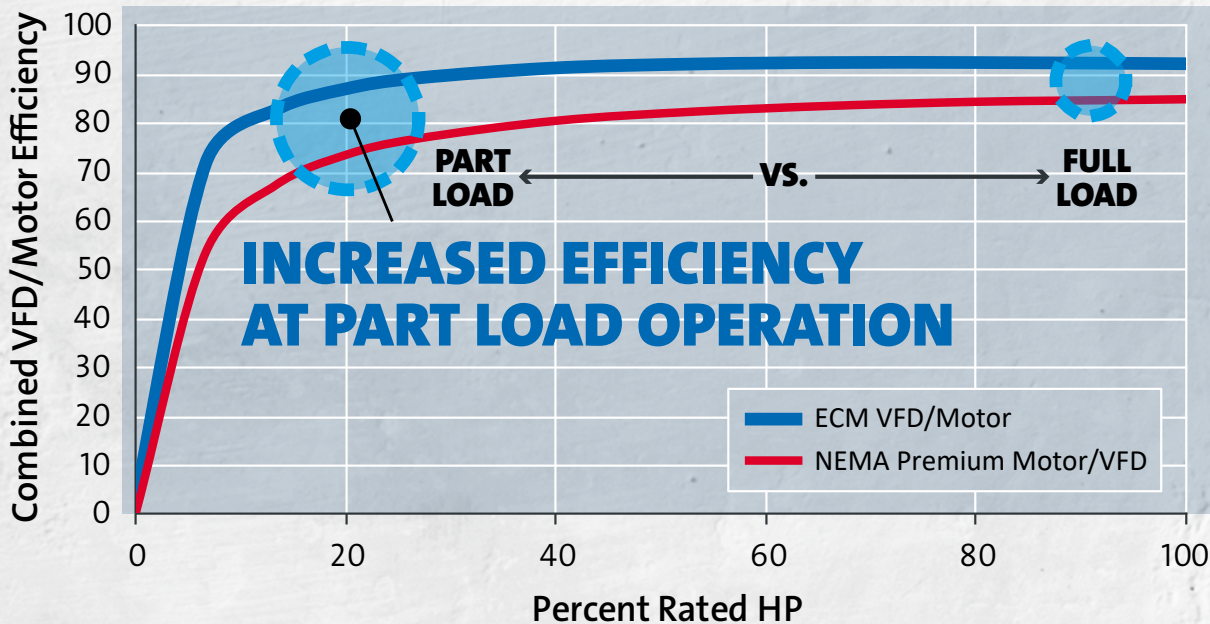
Efficiency Comparison between Conventional and Grundfos MLE Motors

Motors are 460-480V, TEFC



HP	TEFC Motor + Conventional VFD			Grundfos MLE	
	NEMA Premium (IE3) Eff.	Typical VFD Efficiency	Combined Motor+VFD Efficiency	MLE IE5 Efficiency	Efficiency Increase
2	85.5	97.0	82.9	89.4	6.5
3	86.5	97.0	83.9	90.7	6.8
5	88.5	97.0	85.8	92.5	6.7
7.5	89.5	97.0	86.8	92.4	5.6
10	90.2	97.0	87.5	92.5	5.0
15	91.0	98.0	89.2	93.2	4.0

ECM MLE vs. NEMA Premium Motor/VFD Comparison



PLUG AND PUMP WITH HYDRO MULTI-E

Grundfos Hydro Multi-E pump systems are ideal for pressure boosting of clean water in places such as:

- **Apartment Buildings**
- **Hotels**
- **Industry**
- **Hospitals**
- **Schools**

Product Range	2 & 3 Pumps (CRE3 - CRE20)
Max Flow, Q:	460 gpm
Max Head, H:	475 ft
Liquid Temperature:	+32°F to +176°F
Working Pressure:	max. 232 psi



System control interface

Advanced control interface installed in one pump. The control interface allows all control variables to be configured or viewed. With addition of flow measuring, system specific energy (kWh/gallon) can be displayed directly from control interface.



Single point power connection

The Hydro Multi-E offers a single point power connection disconnect panel and has individual pump disconnects for servicing pump while Multi-E system is in operation.

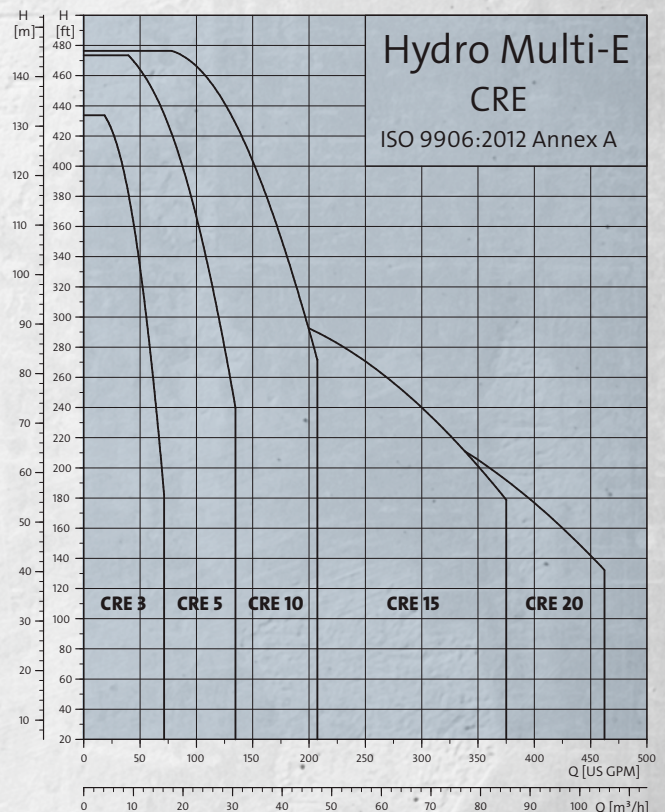
100% redundancy

All motors on system are capable of system control. Two sensors are installed as standard resulting in 100% system control redundancy.

FUNCTIONALITY

The New Hydro Multi-E pump system offers a list of new functions and features.

- Redundant master motors
- Redundant sensors
- IE5 motors, two levels above NEMA premium
- GO communication possible
- Customer defined standby pumps
- 2 digital inputs & outputs
- 2 analog inputs
- Limit exceed functions
- Optional built in Field-BUS Communication
- Optional sensor for dry-run protection
- Pipe filling function
- External setpoint influence
- DP control using two sensors, discharge/suction subtraction
- Predefined setpoint – makes it possible to remotely switch between different predefined setpoints.
- Pulse flow meter – makes it possible to measure the flow and show specific energy (kWh/gallon)



GRUNDFOS TECHNICAL INSTITUTE

The Grundfos Technical Institute (GTI) offers busy professionals the opportunity to enhance their professional knowledge and maintain continuing education credits through a wide variety of flexible learning avenues.

Visit www.grundfos.us/training, to choose from a number of education possibilities that suit your needs and schedule, including face-to-face classes, group webinars and self-directed online courses.

About Grundfos

If you are looking for a competent partner for your pump requirements, Grundfos fits the label. We have produced high-quality industrial pumps for more than half a century.

Every solution is backed by solid knowhow and a desire to constantly push the boundaries in innovative pump technology.

The range of booster pumps is a result of our commitment to excellence, offering reliable, efficient performance in a variety of applications, including:

- High rise buildings
- Irrigation systems
- Booster substations
- General buildings like offices, schools, hospitals and apartments.

As a truly global company, Grundfos is present in over 55 countries around the world. Wherever you are based, extensive pump and pump application knowhow is available to you in your local language.

Explore the complete Grundfos portfolio at www.grundfos.us.