

## MGE

### Product compatibility

- **Multi-stage:** CRE, CRIE, CRNE, MTRE, MTSE, SPKE, CME
- **Single-stage:** TPE, TPED, NKE, NBE
- **Systems:** Hydro MPC-E, Hydro Multi-E, Hydro Multi-B, Hydro Solo-E, CMBE home booster.



TM065684 2219

MGE is a dedicated motor-drive system for pumps and other applications. Pumps equipped with MGE motors overcome application challenges and save energy in a variety of pump installations in order to reach the lowest Life Cycle Cost (LCC) possible.

### Integrated drives

Integrated drives are beneficial because they are installed on non-controlled pumps at no additional installation cost. Once the mains are connected and the pump is fitted into the pipe system, they are ready to operate at the desired setpoint.

Operating pumps with MGE also reduces CAPEX (capital expense) of additional cabinets, components and facility space by having the entire pump system in line with the pipe system.

MGE is the result of Grundfos' efficient motor technology and it is an efficient IE5 motor, which minimises OPEX (operating expense).

### Robustness throughout the system

The Grundfos full line supply of components, from mains connections to pipe fittings, provides the most robust solutions:

- Built-in protection against mains supply disturbances, environment and motor load
- MGE is designed to mitigate bearing currents
- No cooling fans in drive (wear part).

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## MGE product range

1 x 200-240 V	0.25 - 1.5 kW
3 x 200-240 V	1.1 - 5.5 kW
3 x 380-500 V	0.25 - 11 kW*

\* Up to 22 kW available with different specifications.

## Features and benefits

Feature	Benefit
<b>Application control</b>	
Control modes	Easy commissioning to match system design criteria.
Multipump function including alternating, back-up, or cascade	Neglects the need for external controllers and continuous operation by redundant pump and sensor if either component fails.
Differential pressure or temperature with 2 sensors	Lower CAPEX by common inexpensive sensor types.
Pump curve adjustments and run at power limit	Stabilises unstable pump curves and extends operating range.
Setpoint influence	Adapts QH to internal or measured values.
<b>Energy saving for lower OPEX</b>	
AUTOADAPT or FLOWLIMIT	Continuously adapts to the most efficient curve and reduces pressure loss in the system.
Low-flow stop function	Improved energy optimisation and comfort.
Permanent-magnet synchronous motor with IE5 (in accordance with IEC 60034-30-2)	IE5 motor loss is more than 30 % lower than IE3. This alone reduces energy consumption by 10 % with a typical pump load profile.
<b>Condition monitoring</b>	
Limit Exceed function	Any value can be supervised to protect the system.
Loss of prime and dry run	Protects the shaft seal.
Cavitation protection	Protects the impellers.
Flow estimate and heat energy monitor	Monitoring of the heating system's performance.
Overload and temperature	Protects the frequency converter and motor.
Stop at minimum speed	Protects the pump and saves energy.
Motor bearings monitors	Ensures uptime by preventive maintenance.
<b>Robustness</b>	
Operating temperature between 20 °C and 60 °C	Allows installation almost anywhere and high margins in control rooms, resulting in longer product service life.
Impulse transient resistance (VDE0160 compliant)	Resistance against lightning, ESD, switching impulses and utility fault clearing.
Interruptions and voltage sags (SEMIF47 compliant)	Keeps process running and derates the pump to the available power.
Line harmonics resistance (EN 61000-4-13, class 3)	Built-in compensation of disturbance to avoid overheating of motor windings and maintaining a steady pump operation.
Built-in RFI filters	Neglects the need for external components.
IP55 / IP66 enclosures	Installed in-line of pipe system at no added cost.

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روبروی پالایشگاه نفت پارس، پلاک ۱۲

## Grundfos iSOLUTIONS

Grundfos iSOLUTIONS delivers the optimal combination of pumps, drives and auxiliary components for the specific application, incorporating special features and functions and building on application knowledge and experience.

Grundfos iSOLUTIONS allows easy integration of pumps, drives, measurements, controls, protections, and communication, saving you valuable engineering, installation and commissioning time.

To learn more, visit: [www.grundfos.com/isolutions](http://www.grundfos.com/isolutions)

## Sensors

MGE is sensor-independent and controls the pump to any measured feedback.

Grundfos offers several sensors to be used in pump solutions:

- Pressure sensors
- Temperature sensors
- Differential pressure sensors
- Differential temperature sensors
- Flow meters.

As well as Grundfos sensors with dual-signals.

## Grundfos GO Remote

Grundfos GO Remote for iOS and Android ensures easy and quick commissioning, monitoring and servicing of pumps with MGE motors.



TM07 4786 2419

## Technical specifications

Motor data			
	Operating range (rpm)	Constant power (rpm)	Constant torque (rpm)
Speed range	180-2000	1450-2000	900-1450
	360-4000	2900-4000	1750-2900
	360-4000	3400-4000*	2000-3400
	500-5900	4000-5900	-
Voltage tolerances	+/- 10 %		
Frequency	50-60 Hz +/- 5 %		
Network	TN/TT (optional: IT) according to IEC 60364		
Environmental limits			
Degree of protection	IP55 or IP66 according to EN 60529. Note: IP44 must be expected with drain plugs open for prevention of condensation.		
Operating temp.	-20 °C to +60 °C, derating above +50 °C		
Storage temp.	-20 °C to +60 °C		
Altitude	0-1000 m without derating / 0-3500 with derating		
Humidity	0-95 %, non-condensing		
Inputs/outputs	FM100	FM200	FM300
Digital inputs	1	1	2
Digital inputs/ outputs	1	1	2
Relay outputs	-	2	2
Analog inputs	1 (only V)		
Pt100/Pt1000 inputs	-	-	2
+5 V supply	Y	Y	Y
+24 V supply	-	Y	Y
Grundfos Digital Sensor input	-	Y	Y
LiqTec sensor input	-	-	Y
Digital inputs (dedicated)	0 - 5 V		
Digital inputs/ outputs	0-24 V, resistive or inductive		
Analog input	0-20 mA / 4-20 mA, 0.5 - 3.5 V / 0.5 V / 0-10 V		
Relay output	250 V AC/30 V DC, max. continuous current 2 A rms		
Connectivity			
Wireless (radio)	Yes, GENIair		
RS-485	Yes, GENIair		
Communication options	• LONWorks (CIM 100)		
	• PROFIBUS DP (CIM 150)		
	• Modbus RTU (CIM 200)		
	• GSM/GPRS (CIM 250)		
	• 3G/4G cellular (CIM 260)		
	• GiC/GRM 3G/4G (CIM 280)		
	• BACnet MS/TP (CIM 300)		
	• PROFINET IO (CIM 500)		
	• Modbus TCP (CIM 500)		
	• BACnet IP (CIM 500)		
• Ethernet IP (CIM 500)			
Compliance			
Conformity to standards	CE, EAC, RCM, CCC, and cURus (UL)		
Harmonics	IEC/EN 61000-3-12		
EMC	Up to 7.5 kW (5.5 kW low speed): Category C1 according to EN 61800-3, corresponding to CISPR 11, class B (residential area)		
	Above 7.5 kW (5.5 kW low speed): Category C3 according to EN 61800-3, corresponding to CISPR 11, class A, group 2 (industrial area)		

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