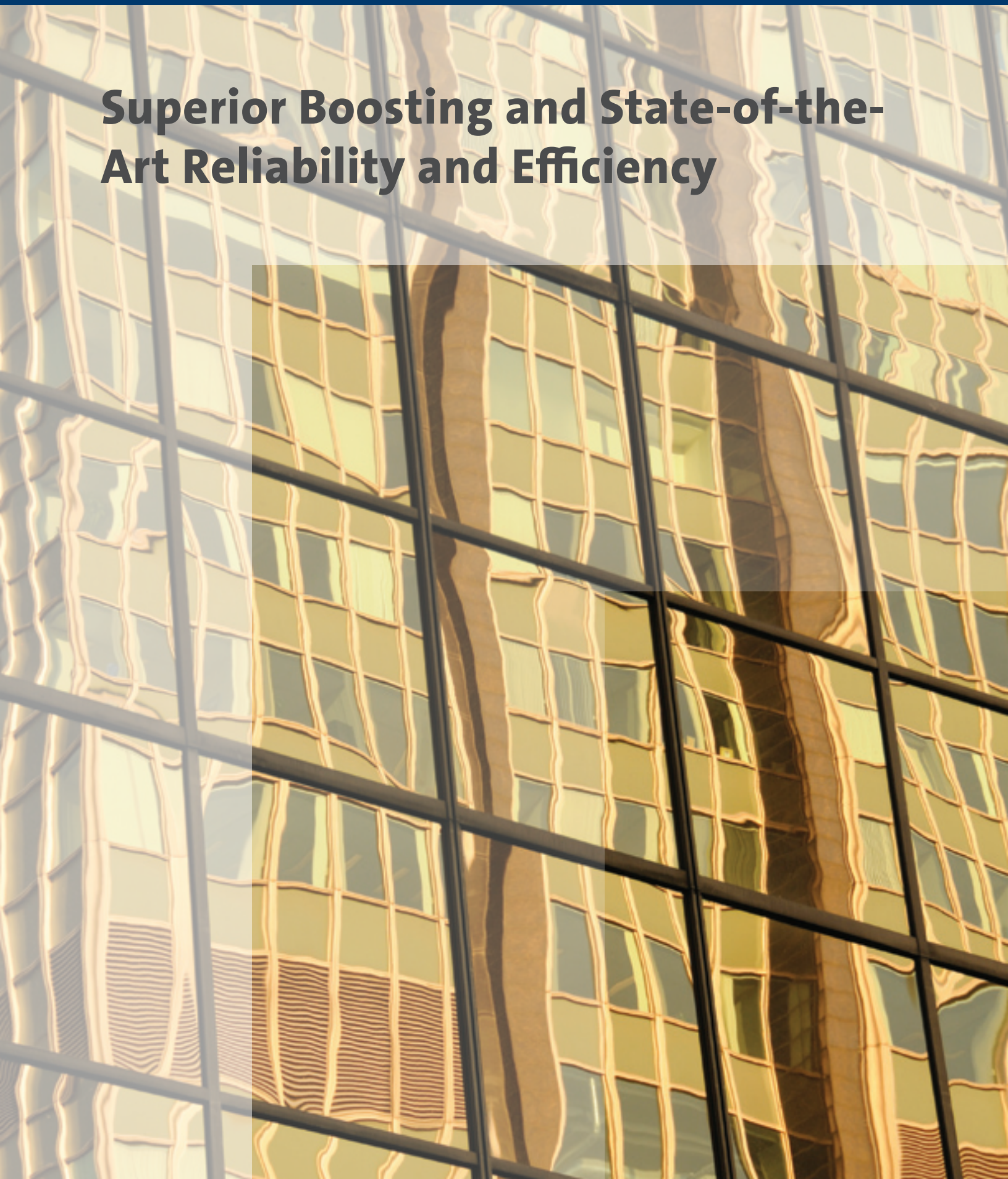


# Dynamic Pressure Boosting Solutions from Grundfos





# Superior Boosting and State-of-the-Art Reliability and Efficiency



## THE OPTIMAL CHOICE FOR RELIABLE AND EFFICIENT PRESSURE BOOSTING

Grundfos pressure boosting solutions are the optimal choice for commercial building, water supply, industry, and irrigation applications.

Our complete, packaged systems – the Grundfos BoosterpaQ® Hydro MPC, Hydro Multi-E, and CRE-Plus – are all UL-listed, use pumps with NSF 61 approval, and provide consistent, reliable and efficient pressure boosting to meet capacity requirements for your application.

### COMMERCIAL BUILDINGS

Water flows can vary significantly throughout the day and place extraordinary demands on pumping equipment in commercial installations. Grundfos pressure boosting systems are designed to handle these challenges to provide comfortable and constant water pressure for users in:

- › High-rise/multi-story buildings
- › Hotels
- › Apartments
- › Schools and dormitories
- › Other institutional buildings

### WATER SUPPLY

Our systems are ideal for meeting capacity requirements with optimal efficiency. You can be assured of maintaining constant pressure in your waterworks applications and water distribution networks.

### INDUSTRY

Your industry can benefit from using a Grundfos pressure boosting solution. Our systems are manufactured to handle even the most difficult applications with ease and accuracy.

- › Food industries (dairy, brewing, processing)
- › Petrochemical, pharmaceutical, and metal industries
- › Water treatment plants
- › Tourism and recreation (water parks, theme parks, fountains)

### IRRIGATION

Our packaged boosting solutions can help you conserve water, optimize crop yields, ease demands on piping networks, and automatically adapt performance at any pressure zone during the irrigation cycle. Grundfos pressure boosting systems provide dependable irrigation for:

- › Commercial landscaping
- › Agriculture
- › Sports arenas and golf courses
- › Parks and other recreational settings
- › Nurseries

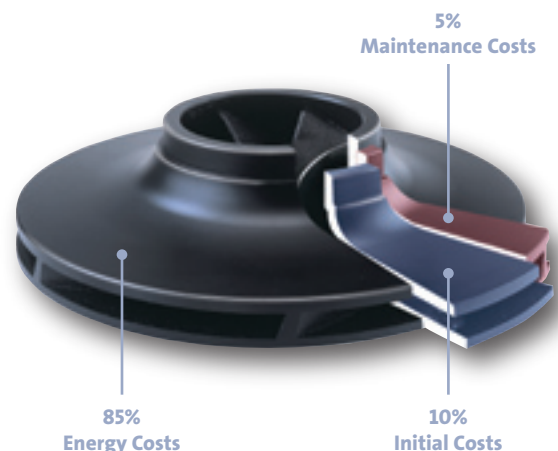
## TAKING RESPONSIBILITY WITH SUSTAINABLE SOLUTIONS

When you specify or install a Grundfos pressure boosting system, you have the assurance that you're doing your part to conserve water, energy, and other precious resources.

Sustainability has long been at the forefront of our processes, and we continue to pioneer innovative designs that support sustainability.

On average, power consumption accounts for 85% of all costs incurred during the life cycle of a pump – nine times more than the initial purchase price and cost of regular maintenance. So, even the smallest improvement in efficiency can translate to sizeable savings.

By choosing a Grundfos pressure boosting solution, you will be minimizing your life cycle costs while saving energy and reducing waste.





# The Grundfos Booster Program – Complete, Comprehensive Systems

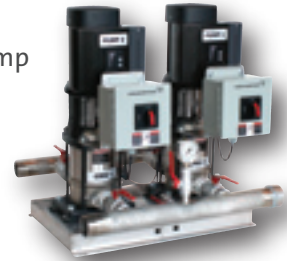


**BOOSTERPAQ® HYDRO MPC**

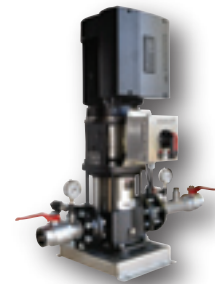
- Fully integrated systems (with advanced controls) utilizing combinations of variable-speed and on/off-controlled pumps (-E, -ED, -ES, -EF, -EDF, -F, -S)
- Configured with 2 to 6 Grundfos CR/CRE pumps


**HYDRO MULTI-E**

- Parallel-mounted 2, 3, or 4 pump systems utilizing all Grundfos CRE variable-speed pumps (sizes CRE3 - CRE32)
- Pump control integrated in terminal box

**CRE-PLUS**

- Single pump variable-speed systems
- Pump control integrated in terminal box



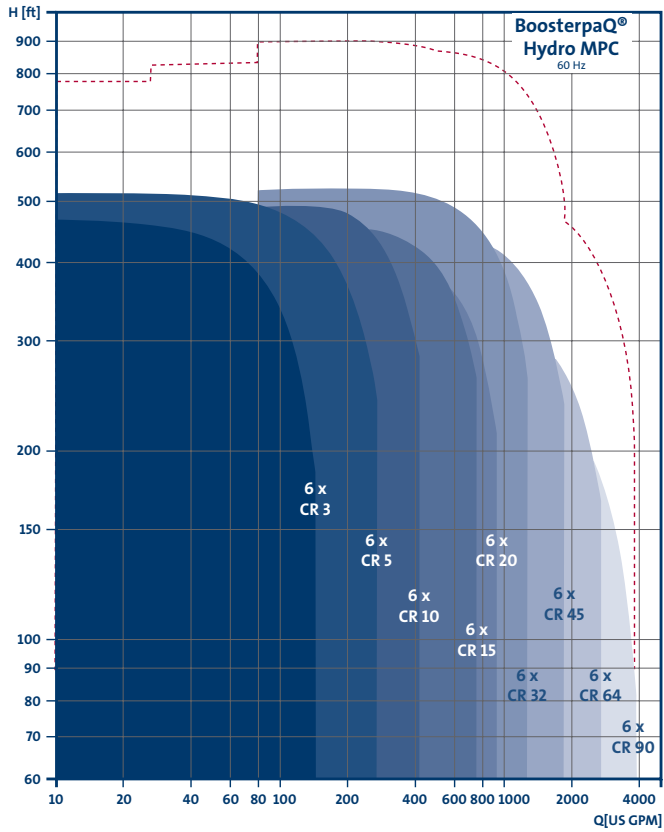
| FEATURES/FUNCTIONS  | BOOSTERPAQ® HYDRO MPC | HYDRO MULTI-E | CRE-PLUS |
|---|-----------------------|---------------|----------|
| UL-listed   | ▲                     | ▲             | ▲        |
| Pumps are NSF 61 approved  | ▲                     | ▲             | ▲        |
| Constant-pressure control   | ▲                     | ▲             | ▲        |
| Stop function (no flow shutdown)  | ▲                     | ▲             | ▲        |
| Dry-run protection via digital input  | ▲                     | ▲             | ▲        |
| Automatic cascade control   | ▲                     | ▲             |          |
| Automatic pump alternation  | ▲                     | ▲             |          |
| Advanced control interface  | ▲                     |               |          |
| Dry-run protection via analog input   | ▲                     |               |          |
| Alternative set-points  | ▲                     |               |          |
| Pump test run   | ▲                     |               |          |
| Password protection   | ▲                     |               |          |
| Clock program   | ▲                     |               |          |
| Forced pump changeover  | ▲                     |               |          |
| Proportional pressure control   | ▲                     |               |          |
| Pilot pump  | ▲                     |               |          |
| Set-point influence (via analog input)  | ▲                     |               |          |
| Soft pressure build-up  | ▲                     |               |          |
| Emergency run (via digital input)   | ▲                     |               |          |
| Pump curve data loaded into controller  | ▲                     |               |          |
| High-system pressure shutdown   | ▲                     |               |          |
| Low-system pressure shutdown  | ▲                     |               |          |
| Limit exceeded 1 (flow, level, temp., etc.)   | ▲                     |               |          |
| Limit exceeded 2 (flow, level, temp., etc.)   | ▲                     |               |          |
| End of curve protection   | ▲                     |               |          |
| Ethernet connection (built-in web server)   | ▲                     |               |          |



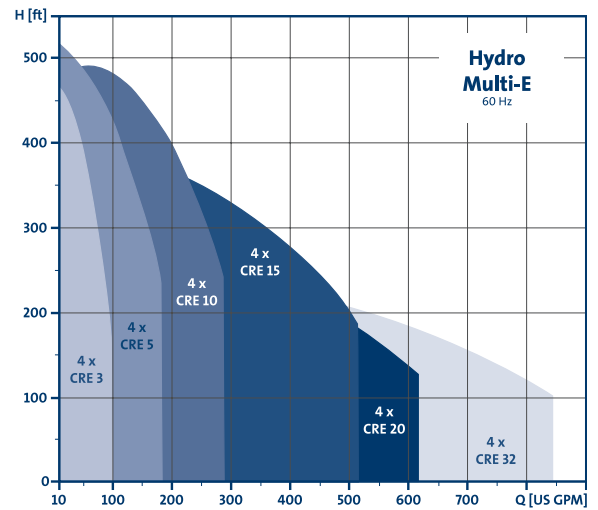
## Performance Ranges That Cover a Spectrum of Applications



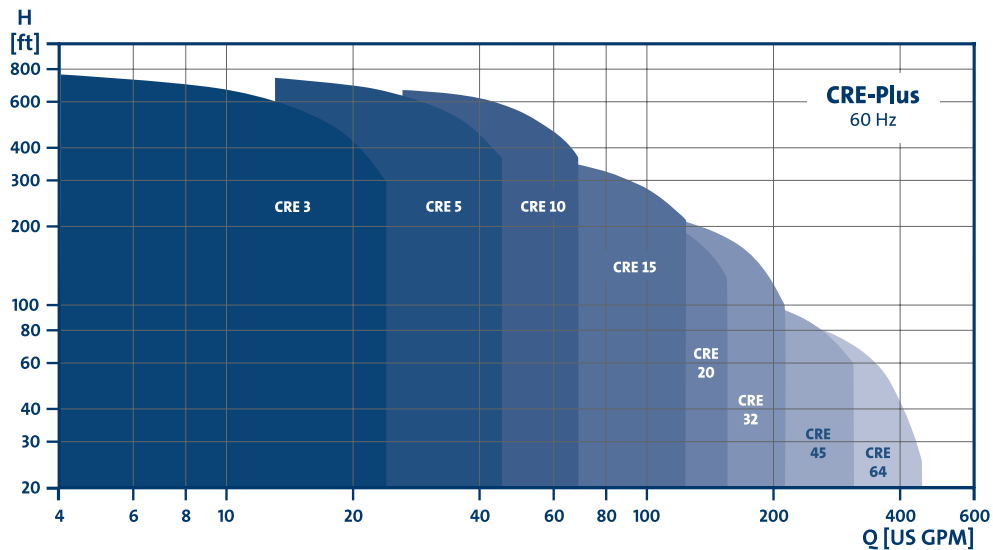
## BOOSTERPAQ® HYDRO MPC PERFORMANCE RANGE



## HYDRO MULTI-E PERFORMANCE RANGE



## CRE-PLUS PERFORMANCE RANGE





# BoosterpaQ® Hydro MPC – A “Fully Loaded” Packaged Solution





## FEATURES AND BENEFITS

We can't say enough about the BoosterpaQ® Hydro MPC – our most complete pressure boosting system that features all the bells and whistles along with the reliability you've come to depend on from Grundfos pumps.

- Grundfos CR pumps, cascade control, stop function, and speed control help to lower energy consumption
- Proven components that are designed, built, and tested by Grundfos guarantee reliable pump performance
- Adaptability to varying demands enhances comfort for the user
- Multiple configurations – with up to six pumps in parallel – provide a wide range of options for any application
- Automatic pump alternation ensures an equal number of running hours
- Intuitive graphical interface and installation wizard makes the system user-friendly and easy to install and operate

The BoosterpaQ® Hydro MPC is an economical and flexible solution that provides constant pressure when you need it. Additional features available on the MPC include:

- Standby pumps and redundant sensor
- Min./max. pressure limits
- Alternative set-points
- External set-point influence
- Pump test/change-over

## TYPICAL APPLICATIONS

- Water supply systems
- Pressure boosting in high-rise buildings
- Industrial plants
- Irrigation systems
- Liquids from drinking water to light chemical solutions

## MPC FUNCTIONS

The BoosterpaQ® Hydro MPC boasts a number of advantageous and customized functions.

### Clock Program

Sets up to 10 events with day and time for each activation and deactivation.

### Proportional Pressure/Friction Loss Compensator

Adapts the set-point to the current flow rate and used primarily in applications with moderate to high pipe system friction loss.

### Stop Function

Stops the last pump if there is no or very little consumption with one of four stop parameter modes: energy-saving (factory setting), medium flow, highest comfort level, and customized.

### Soft Pressure Build-Up

Ensures the smooth start-up of systems in one of two phases: pipe filling or pressure build-up.

### Pump Start/Stop Speed

Controls the starting/stopping of pumps using one of two speed options: calculated speed or predetermined speed.

### Emergency Run

Designed for systems where operation cannot be interrupted and has a higher priority than other operating modes.

### Pump Curve Data

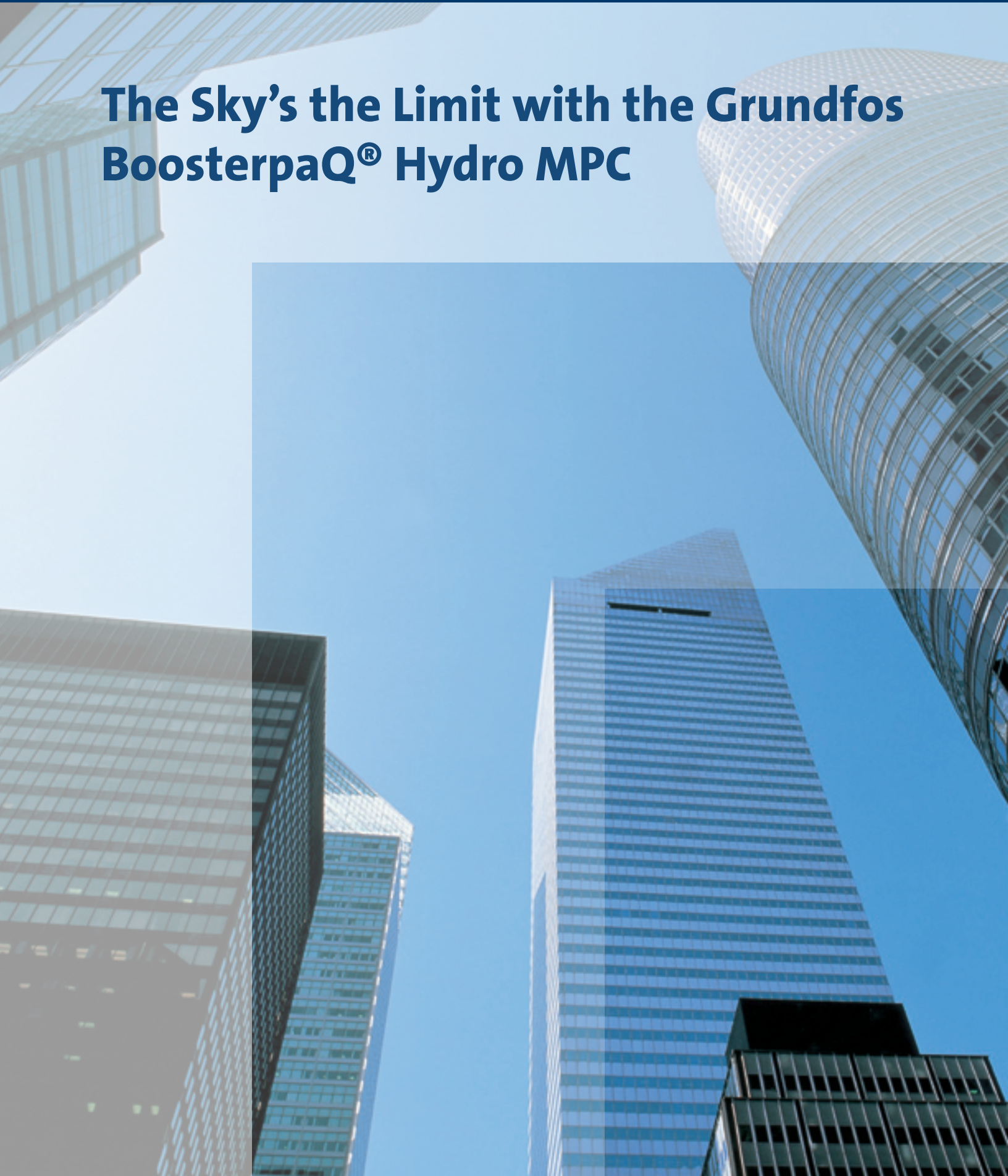
Pump curves are loaded into the controller to ensure optimal performance and flow estimation.

### Pilot Pump

Used in situations where loads of the consumption profile fluctuate extensively.



# The Sky's the Limit with the Grundfos BoosterpaQ® Hydro MPC



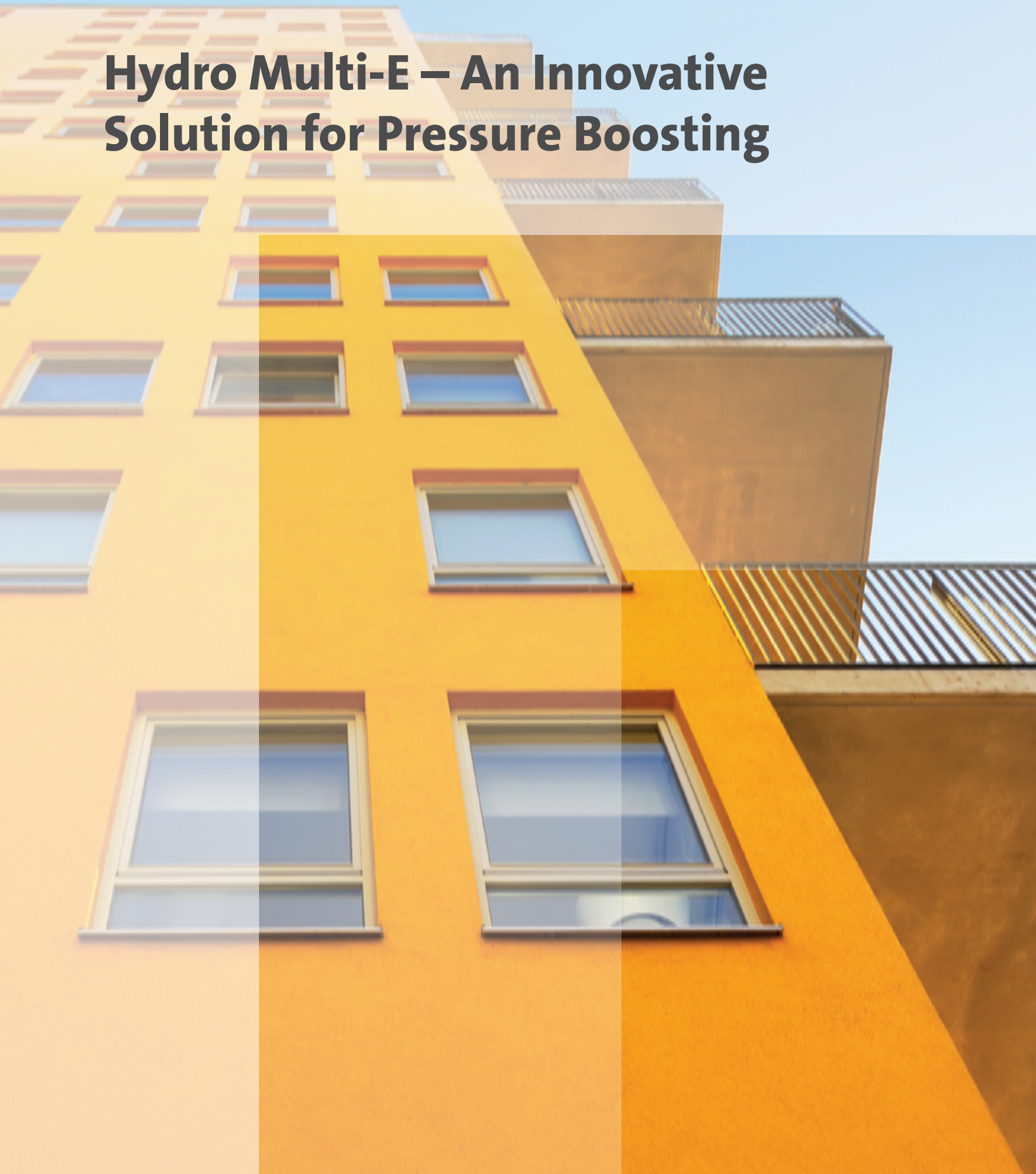


## CU351 CONTROL INTERFACE



| TYPE RANGE           |   |           |
|----------------------|---|-----------|
| SYSTEM TYPE          | CONTROL TYPE                                      | SCHEMATIC |
| <b>Hydro MPC-E</b>   | All E-pumps<br>(E-pumps use integrated VFD/motor) |           |
| <b>Hydro MPC-ED</b>  | Two E-pumps + rest fixed speed                    |           |
| <b>Hydro MPC-ES</b>  | One E-pump + rest fixed speed                     |           |
| <b>Hydro MPC-EF</b>  | One external VFD per pump                         |           |
| <b>Hydro MPC-EDF</b> | Two external VFD; rest fixed speed                |           |
| <b>Hydro MPC-F</b>   | One external VFD; rest fixed speed                |           |
| <b>Hydro MPC-S</b>   | Only on/off control; all fixed speed              |           |

# Hydro Multi-E – An Innovative Solution for Pressure Boosting





## ENERGY SAVINGS AND COMFORT

The Hydro Multi-E uses parallel mounted Grundfos CRE variable-speed pumps that have a reputation for providing the ultimate in efficiency and reliability for increased energy savings and comfort.

## FEATURES AND BENEFITS

- Thoroughly tested systems arrive ready to install
- Simple installation and operation
- Integrated variable frequency drive motors allow unique control functionality for increased comfort for the user and decreased operating costs
- Automatic pump changeover ensures equal wear and tear on all pumps in the system
- Effective communication between pumps and control via the GENIbus/RS485 interface
- High-quality material construction ensures durability and long life
- Low-flow shutdown

The Hydro Multi-E is an affordable option for your pressure boosting applications. Additional features available with the Multi-E include:

- Same plumbing as the BoosterpaQ® Hydro MPC
- UL-listed
- Advance programming via PC Tool
- Set-point via R100 (Infrared)
- Simple program with few options and no panel
- Redundancy
- All components – pump, VFD motor, connections, and accessories – come from one supplier, which streamlines ordering and maintenance (single-source responsibility)

## TYPICAL APPLICATIONS

- Residential/commercial buildings
- Municipal
- Irrigation

## E-PUMP FUNCTIONALITY

The Multi-E features a number of E-pump functionalities, including:

### Setting via Control Panel

Set-point, start/stop, and max. curve (100% speed).

### Reading via Control Panel

Set-point, operating indication, and fault indication.

### Setting via R100

Set-point, start/stop, max. curve (100% speed), control mode, PI-controller, and stop function.

### Reading via R100

Set-point, operating indication, and pump status.

### External Signals

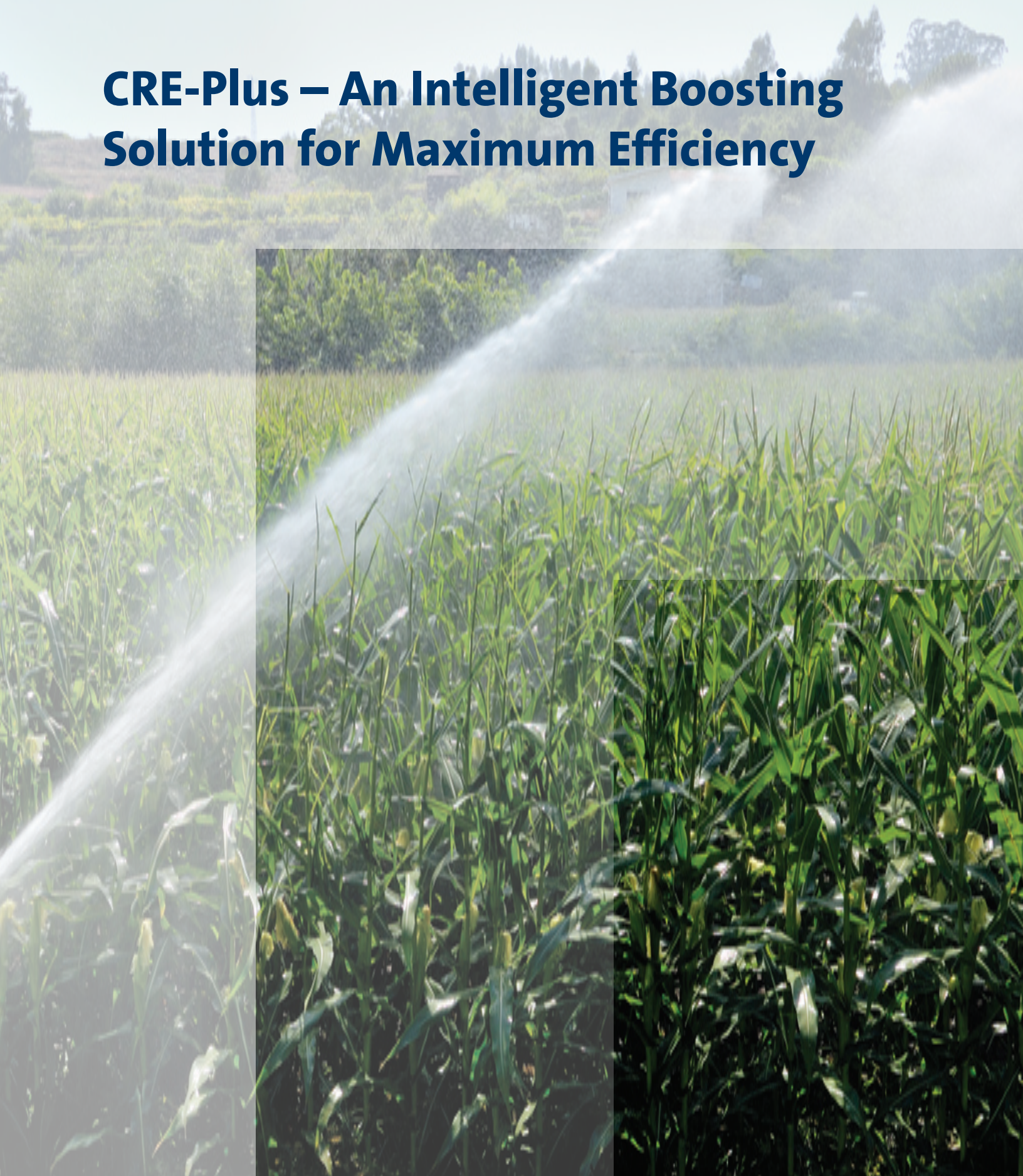
Inputs: sensor (fitted) and external fault.  
Outputs: signal relay

## AVAILABLE ACCESSORIES

- Diaphragm tank (required for low-flow shutdown)
- R100 Infrared remote control (for advanced settings and status information)
- G10 – LON Interface
- G100 – Modbus or Profibus Interface



# **CRE-Plus – An Intelligent Boosting Solution for Maximum Efficiency**





## VARIABLE SPEED MAKES THE DIFFERENCE

The CRE-Plus is one of a wide range of E-pumps offered by Grundfos. It utilizes “smart” pump technology to vary motor output according to demand so energy is not wasted on generating pump speed that isn’t required.

The CRE-Plus optimizes pumping efficiency at all times, saving energy, driving down costs, and lessening system wear and tear. CRE pumps maintain constant pressure at any time, even with the most challenging variations in demand.

## FEATURES AND BENEFITS

- Superior efficiency plus variable speed control are a winning combination for saving on energy costs year after year
- Grundfos CR pump and speed control help to lower energy consumption
- Set-point via R100 (Infrared) control allows CRE pumps without a factory installed pressure sensor to control variables as demand changes
- Low-flow shutdown
- High-quality cartridge mechanical seal makes for easier maintenance and servicing without dismantling the pump
- UL-listed
- All components – pump, VFD motor, connections, and accessories – come from one supplier, which streamlines ordering and maintenance (single-source responsibility)

The CRE-Plus surpasses any other pump of its type in reliability and efficiency. This efficiency often makes it possible to power the pump with a smaller motor, thus increasing savings further.

## TYPICAL APPLICATIONS

- Water supply
- Irrigation
- Water treatment
- Industrial plants

## CONFIGURATION

The CRE-Plus is available with single and three-phase motors and a range of sizes. The complete pressure boosting system includes:

- Pump
- Motor frame
- VFD with terminal box
- Service disconnect switch
- Inlet and discharge piping
- Isolation valves
- Check valve
- Pressure transducer
- Low pressure inlet switch

The diaphragm tank is shipped separately.



**USA**

GRUNDFOS Pumps Corporation  
17100 West 118th Terrace  
Olathe, Kansas 66061  
Phone: (913) 227-3400  
Telefax: (913) 227-3500

**USA**

PACO Pumps - National Headquarters  
Grundfos CBS Inc.  
902 Koomey Road  
Brookshire, TX 77423  
Phone: (800) 955-5847  
Telefax: (800) 945-4777

**CANADA**

GRUNDFOS Canada Inc.  
2941 Brighton Road  
Oakville, Ontario  
L6H 6C9  
Phone: (905) 829-9533  
Telefax: (905) 829-9512

**MEXICO**

Bombas GRUNDFOS de Mexico S.A. de C.V.  
Boulevard TLC No. 15  
Parque Industrial Stiva Aeropuerto  
C.P. 66600 Apodaca, N.L. Mexico  
Phone: 011-52-81-8144 4000  
Telefax: 011-52-81-8144 4010



L-PB-SL-001 • 12/08 (US)

The name Grundfos, the Grundfos logo, and the payoff Be-Think-Innovate are registered trademarks owned by Grundfos Management A/S or Grundfos A/S, Denmark. All rights reserved worldwide.



**Mixed Sources**  
Product group from well-managed  
forests, controlled sources and  
recycled wood or fibre  
www.fsc.org Cert no. SGS-COC-003824  
© 1996 Forest Stewardship Council

