



# MUNSCHE ECM+

ENERGY SAVING MAGNET DRIVE CHEMICAL PUMP

# NON-METALLIC PUMPS FROM THE SPECIALIST

As a family-owned company, MUNSCH has been a reliable partner to the chemical and process industries for more than 50 years, working shoulder to shoulder with their customers. From the very beginnings of our activities, our single-minded focus has been on non-metallic pumps for corrosive and abrasive service environments satisfying the highest quality, reliability and efficiency standards.

Our dedicated staff and their drive for innovation are steering us into the world of tomorrow. At MUNSCH, digitalization has long been part of our corporate philosophy, being lived out to the fullest and putting us in a position to respond flexibly to our customers' special product and service needs. Thanks to our high level of vertical integration and latest manufacturing technology, we are well placed for cost-effective manufacture.

## **TOGETHER WITH OUR CUSTOMERS ...**

and built on many years of experience, we select optimal solutions from our product portfolio that guarantees reliable operation at ideal life cycle cost.

Competent advice by our field technicians and technical support throughout the lifecycle of the pump are the services that come with our products.

## **MUNSCH PUMPS ...**

have earned an excellent reputation among industry users and our customers' project engineers over the years. They stand for reliability, safe operation, easy handling, high efficiencies and thick-walled plastic casings. The ECM+ series unites these attributes and is setting new standards of efficiency and cost effectiveness.





# THE MUNSCH ECM+

The efficient pump for highly corrosive applications in the chemical industry

The ECM+ series pumps are the ideal solution for safely handling highly corrosive and aggressive fluids, including acids, alkalis, solvents, and chemically contaminated media. A special design feature even allows them to pump solid containing liquids.

Known for their outstanding energy efficiency, the ECM+ series ensures excellent performance while minimizing power consumption. With a focus on simplicity, it offers an economical option for hermetically sealed, magnetically coupled pumps, combining reliability, energy savings, and high performance.



## APPLICATIONS

The pump series for medium-duty applications

The hermetically sealed ECM+ and ECM-B+ series magnetically-coupled pumps are specifically designed for the safe handling of highly corrosive fluids such as acids, alkalis, solvents or chemically contaminated fluids in the presence or absence of solids.

Typical applications of the ECM+ include service in:

- chemicals distribution
- semi-conductor production
- the chemical and pharmaceutical industries
- waste water and exhaust gas treatment
- metal surface finishing



The ECM+ and ECM-B+ series pumps meet the requirements of EU-Directive 2014/34/EU for use in explosion hazard areas.

# MUNSCH ECM+ THE PUMP WITH THE PLUS



## PLUS IN PERFORMANCE

Thanks to optimized hydraulics, the ECM+ achieves an impressive efficiency of up to 75% – ensuring maximum energy efficiency and performance.

## PLUS IN STABILITY AND RELIABILITY

The replaceable, 10 mm thick-walled PFA casing offers chemical resistance and high stability. Even critical media are pumped safely and reliably.

## PLUS IN MATERIAL QUALITY

We prioritize quality over compromises: The ECM+ is made from high-purity PFA and is also available in PP as an option. With long-lasting SmCo magnets and PTFE seals (TFM1600), the pump ensures the highest safety and durability – for reliable operation in your system.

## PLUS IN EXTRA PROTECTION

For the highest demands, the ECM+ is also available with a secondary seal. This allows you to handle even the most critical media – safely and without risk.

## THE PLUS IN HANDLING

Our Easy-Maintenance systems, MagPull and QuickFit, make it easy and quick to maintain the pump without removing it from your system.

## THE PLUS IN QUALITY

With over 50 years of experience in manufacturing armored plastic pumps, our family-owned company stands for the highest quality and reliability – Made in Germany.

## THE PLUS IN SUSTAINABILITY

Sustainability is more than just a goal for us. At MUNSCH, we act responsibly – socially, ethically, and environmentally. Our pumps are synonymous with maximum operational safety, innovative technology, and highest efficiency. As an EcoVadis member, we take pride in our strong sustainability ranking.



## CONSERVING RESOURCES AND ENHANCING ENERGY EFFICIENCY – THE COMMITMENT BEHIND OUR ECM+

At MUNSCH, we combine high-performance engineering with responsible design. The ECM+ pump stands out for its exceptional energy efficiency, delivering outstanding performance while reducing power consumption.

The innovative, separately replaceable volute casing minimizes downtime, enhances maintainability, and reduces material use – conserving resources and optimizing performance.

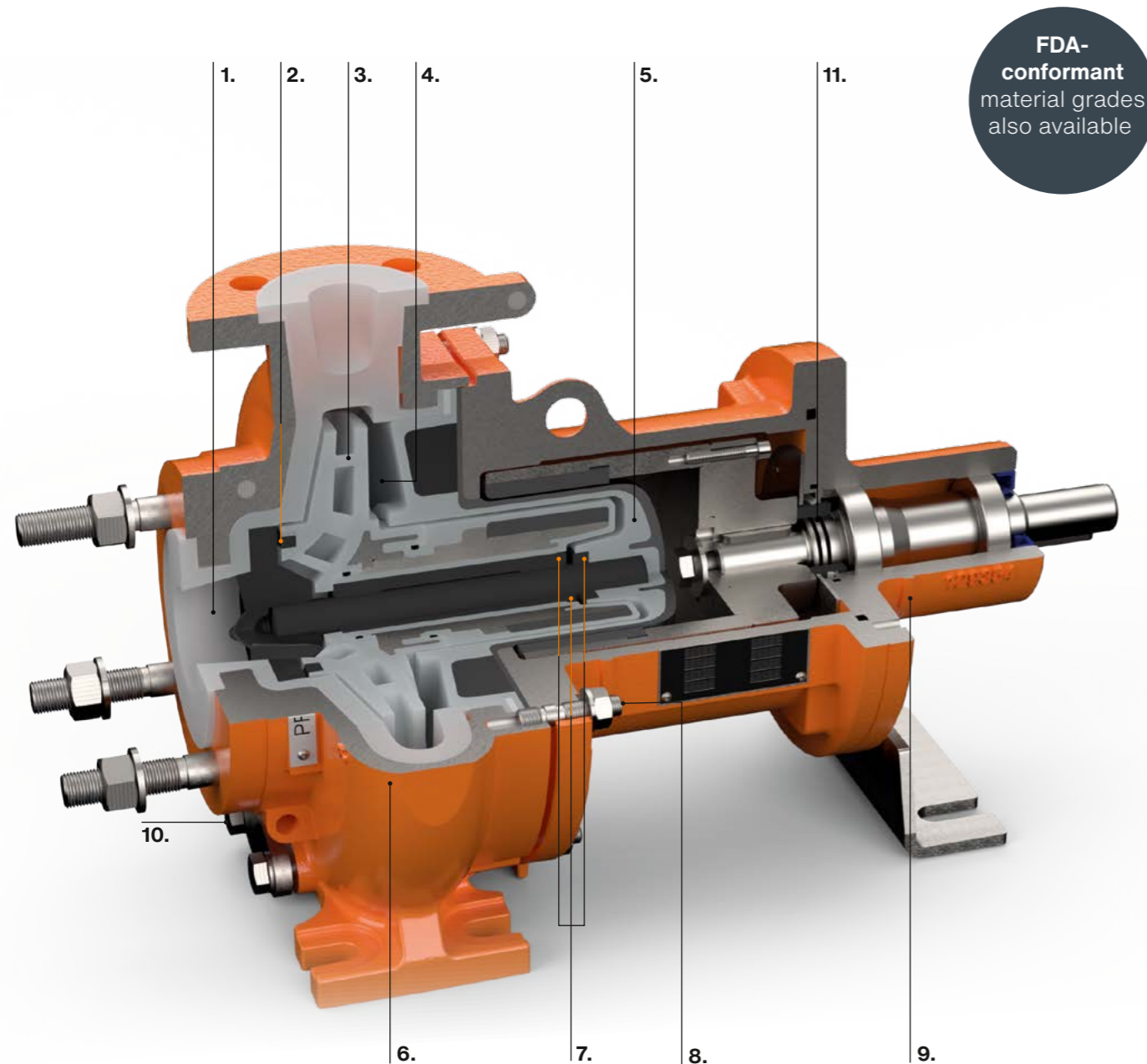
Designed for the rigorous demands of modern industries, the ECM+ balances operational excellence with sustainability. Manufactured in our EcoVadis-certified facility in Germany, it reflects our commitment to responsible production and efficiency.

Did you know? Pumps like the ECM+ significantly reduce carbon footprints. A global 3-5% energy efficiency improvement in centrifugal pumps could cut carbon emissions by up to 54 million tons annually – equal to the emissions of countries like New Zealand or Finland. It's a big step toward sustainability and a smart way to save energy and costs.



# COMPONENTS AND PROPERTIES

Only a look inside the MUNSCH ECM+ reveals the unique features of this innovative magnetic pump.



## 1. VOLUTE CASING

Replaceable, thick-walled (10 mm) PFA casing with ductile iron armor for maximum durability.

## 2. AXIAL BEARING

Integrated into the impeller, with minimized clearance for low NPSHr and high efficiency.

## 3. IMPELLER

CFD-optimized, closed-design impeller for superior efficiency.

## 4. SOLIDS DEFLECTOR

Keeps larger solids away from the plain bearing, ensuring smooth operation.

## 5. SPACER CAN

Metal-free double-wall design with outer shell and separate liner:

- No eddy currents - no heat transfer to the fluid.
- Zero energy and efficiency losses.
- Protected from mechanical contact with the outer magnet.

## 6. CASING ARMOR

Robust PN16 pressure-resistant metal armor, ATEX-compliant, and fire-protected.

## 7. ROBUST BEARINGS

High-performance SSiC bearings for superior wear and corrosion resistance. Optional SSiC/Carbon bearings for improved dry-run protection.

## 8. QUICKFIT

Enables pump replacement in minutes.

## 9. MAGPULL

Simplifies maintenance of the bearing bracket and outer magnet assembly.

## 10. CASING DRAIN

Optional low-point drainage for complete volute casing emptying.

## 11. SECONDARY SEAL

Optional secondary seal enhances safety for handling critical media.



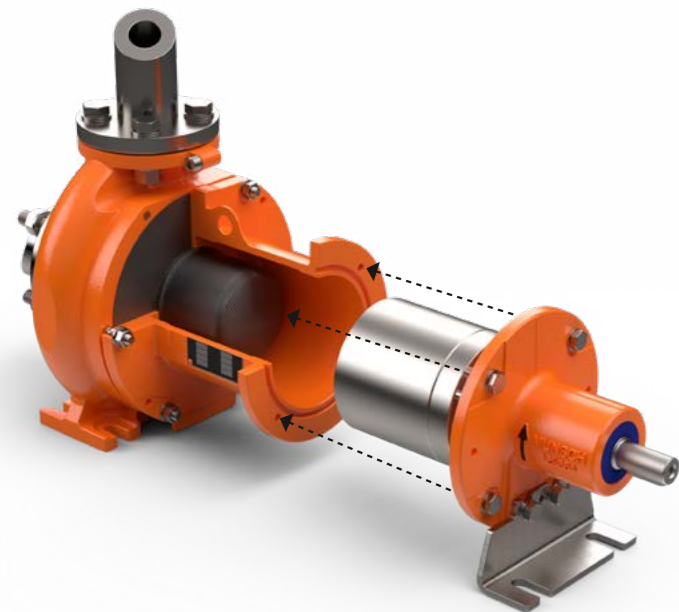
# HANDLING

Our MagPull and Quickfit easy-maintenance systems facilitate and accelerate pump maintenance, without having to remove the pump from your system.

## QUICKFIT

The pump casing can be removed from the remaining pump unit within a few minutes while remaining connected to the discharge- and suction-side piping.

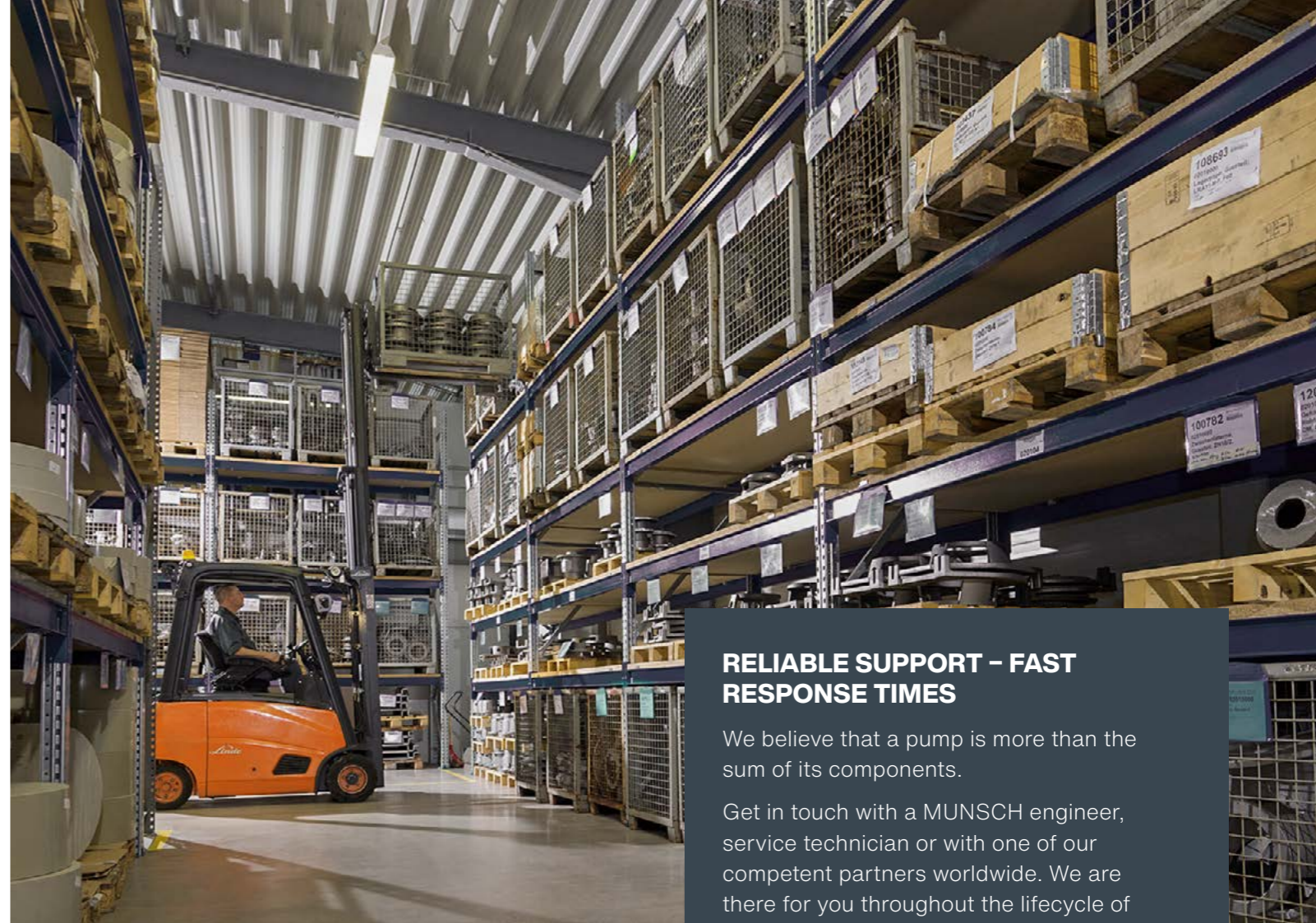
The QUICKFIT unit can be replaced with the casing staying in line, which allows for the pump to be restarted with a minimum of downtime.



## MAGPULL

Maintenance within the plant? No problem with our MagPull system! The bearing bracket can be removed from the remaining pump unit with the piping connections remaining connected.

The pump will continue to be hermetically sealed while the bearing bracket and outer magnet assembly are being serviced.



## RELIABLE SUPPORT – FAST RESPONSE TIMES

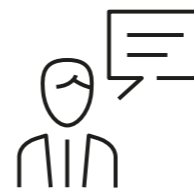
We believe that a pump is more than the sum of its components.

Get in touch with a MUNSCH engineer, service technician or with one of our competent partners worldwide. We are there for you throughout the lifecycle of your MUNSCH pump.

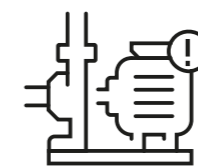
Spare parts have priority and leave our production site within the shortest possible time.

# THE BEST SERVICE

Service ranks high at MUNSCH. Our service team will also be there for you after placement of the order!



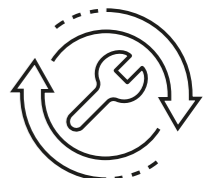
HIGHLY  
MOTIVATED  
SERVICE TEAM



PREVENTIVE  
MAINTENANCE



SPARE PARTS AND  
TAILOR-MADE  
PARTS



REPAIRS AND  
UPGRADES

# FACTS

## The MUNSCH ECM+ at a glance



### TYPES OF CONSTRUCTION

Horizontal centrifugal pump with volute casing designed to EN 22858/ ISO 2858/ ISO 5199

### COATING SYSTEM (metal components)

The pumps are equipped with a highly durable powder coating that withstands even the harshest environmental conditions. Optionally, a conductive coating <math>< 10^8 \text{ Ohm}</math> is available..

- Primer: Epoxy resin, layer thickness 60–80  $\mu\text{m}$
- Topcoat: Polyurethane, layer thickness 60–80  $\mu\text{m}$
- Total layer thickness: 130–150  $\mu\text{m}$
- Color: RAL 2003

### PERFORMANCE DATA

Capacity [Q]:	up to 200 m <sup>3</sup> /h
Differential head [H]	up to 90 m
Operating temperature:	up to 130 °C
Motor rating [P] up to:	up to 30 kW

### DRIVE

Three-phase a.c. motor, frame types B3 and B3/B5 to IEC, BS or NEMA; type of protection, flameproof enclosure and motor voltage to customer specifications.

### PIPING CONNECTION

Standard design to DIN 2501, PN 16, optionally to:

- ASME B16.5, Class 150, metric
- JIS B2210, Class 10K, metric

### PUMP MATERIALS

Part designation	Standard materials
Volute casing	optionally PFA or PP
Inner magnet assembly	optionally PFA or PP
Outer magnet assembly	steel
Intermediate lantern	ductile cast iron
Casing armour	ductile cast iron
Spacer can	optionally PFA/PPS or PP/PPS
Plain bearing	SSIC / carbon
Drive shaft	steel
Bearing bracket	ductile cast iron

### EXPLOSION PROTECTION TO EU DIRECTIVE 94/9/EG (OPTION)

Additional engineering measures can be provided to allow use of the pumps in explosion hazard areas. The pump meets the requirements of EU Directive 94/9/EC.

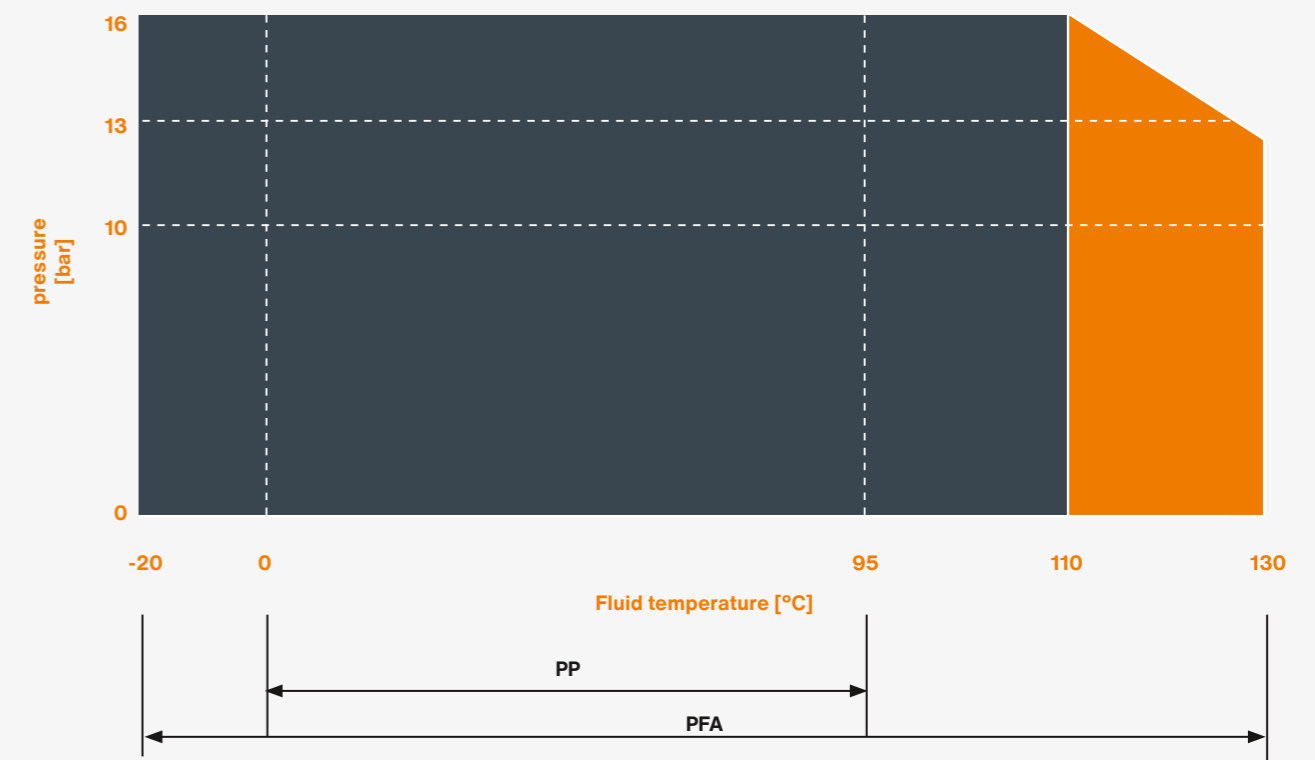
### ACCESSORIES/OPTIONS

- Base plate
- Levelling elements for anchor-free setup
- Coupling with/without spacer piece
- Sturdy coupling guard
- Casing drain
- Priming pot
- Motor overload switch
- RAL colour of pump: customer-specific

### PUMP MATERIALS

	<b>PP</b>	0 to 95 °C	Cost-effective material featuring excellent resistance to many inorganic acids, alkalis and salts
	<b>PFA</b>	-20 to 130 °C	Virtually universally chemical-resistant fluoropolymer with a broad temperature and application range

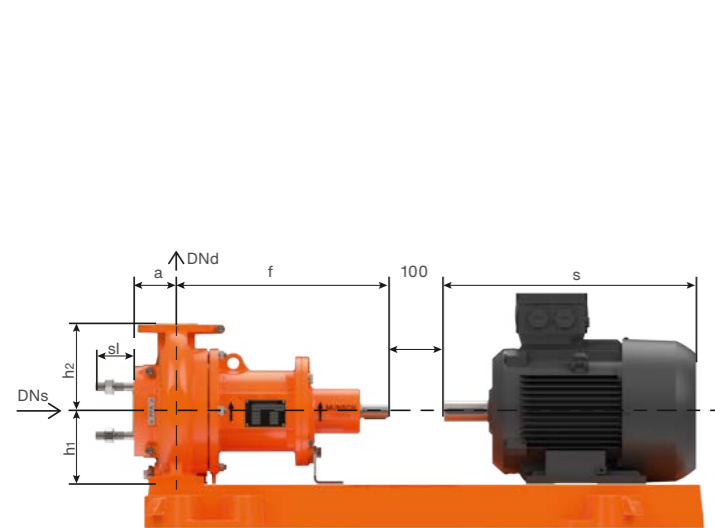
### MAXIMUM ALLOWABLE OPERATING PRESSURES AND TEMPERATURES





# PUMP SIZES AND PUMP DIMENSIONS

## MOTOR DIMENSIONS ECM+



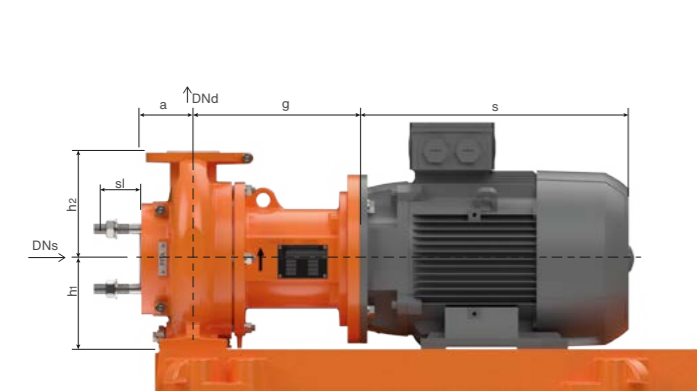
speed 1450 min<sup>-1</sup>

Bau-größe	IP55 [kW]	Ex eb IIC [kW]	S
100L	2,2	2	396
100L	3	2,5	396
112M	4	3,6	389
132S	5,5	5	465
132M	7,5	6,8	465
160M	11	10	590
160L	-	-	-
180M	-	-	-
180L	-	-	-
200L	-	-	-
225M	-	-	-

speed 2900 min<sup>-1</sup>

Bau-größe	IP55 [kW]	Ex eb IIC [kW]	S
100L	3	2,5	396
100L	-	-	-
112M	4	3,3	389
132S	7,5	4,6	465
132M	-	5,5	465
160M	15	10	604
160L	18,5	12,5	604
180M	22	15	668
180L	30	20	721
200L	-	24	721
225M	-	28	818

## MOTOR DIMENSIONS CLOSE-COUPLED ECM-B+



speed 1450 min<sup>-1</sup>

Bau-größe	IP55 [kW]	Ex eb IIC [kW]	S
100L	2,2	2	336
100L	3	2,5	336
112M	4	3,6	329
132S	5,5	5	385
132M	7,5	6,8	465
160M	11	10,0	590
160L	-	-	-

speed 2900 min<sup>-1</sup>

Bau-größe	IP55 [kW]	Ex eb IIC [kW]	S
100L	3	2,5	336
100L	-	-	-
112M	4	3,3	329
132S	5,5	-	385
132M	7,5	4,6	385
160M	15	10	494
160L	18,5	12,5	494

**Flanges according to EN 1092, PN 16, optionally:**

- Drilled according to ASME B16.5, Class 150
- Drilled according to JIS B2210, Class 10K

**Stud bolts (suction side): According to DIN 938**

Dimensions in [mm]

**Additional Notes:**

The motor frame length S refers to the Siemens manufacturer; dimensions are non-binding.

## MAIN PUMP DIMENSIONS ECM+ AND ECM-B+

Pump size	DNs	DNd	a	f	h1	h2	sl	Motor size				
								g				
								90	100	112	132	160
25-25-125	25	25	80	385	112	140	70	227,5	246,5	246,5	257,5	-
25-25-160	25	25	80	385	132	160	70	227,5	246,5	246,5	257,5	-
40-25-125	25	25	80	385	112	140	70	227,5	246,5	246,5	257,5	-
40-25-160	25	25	80	385	132	160	70	227,5	246,5	246,5	257,5	-
50-32-125	50	32	80	385	112	140	70	227,5	246,5	246,5	257,5	-
50-32-160	50	32	80	385	132	160	70	227,5	246,5	246,5	257,5	-
65-50-125	65	50	80	385	112	140	70	227,5	246,5	246,5	257,5	-
65-50-160	65	50	80	385	132	160	70	-	265,5	265,5	293	328
80-65-160	80	65	100	385	160	180	70	-	265,5	265,5	293	328
50-32-200	50	32	100	385	160	180	70	-	265,5	265,5	293	328
65-40-200	65	40	100	385	160	180	70	-	265,5	265,5	293	328
80-050-20	65	40	100	385	160	180	70	-	265,5	265,5	293	328
100-65-160	100	65	100	500	160	200	70	-	265,5	265,5	293	328

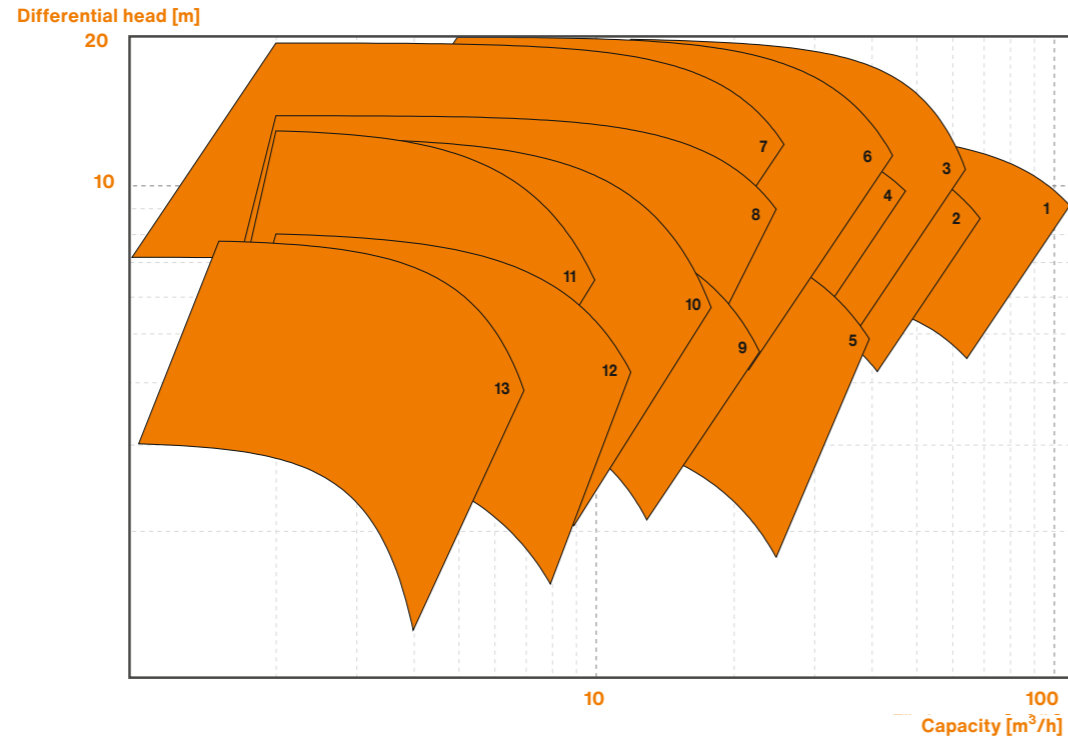




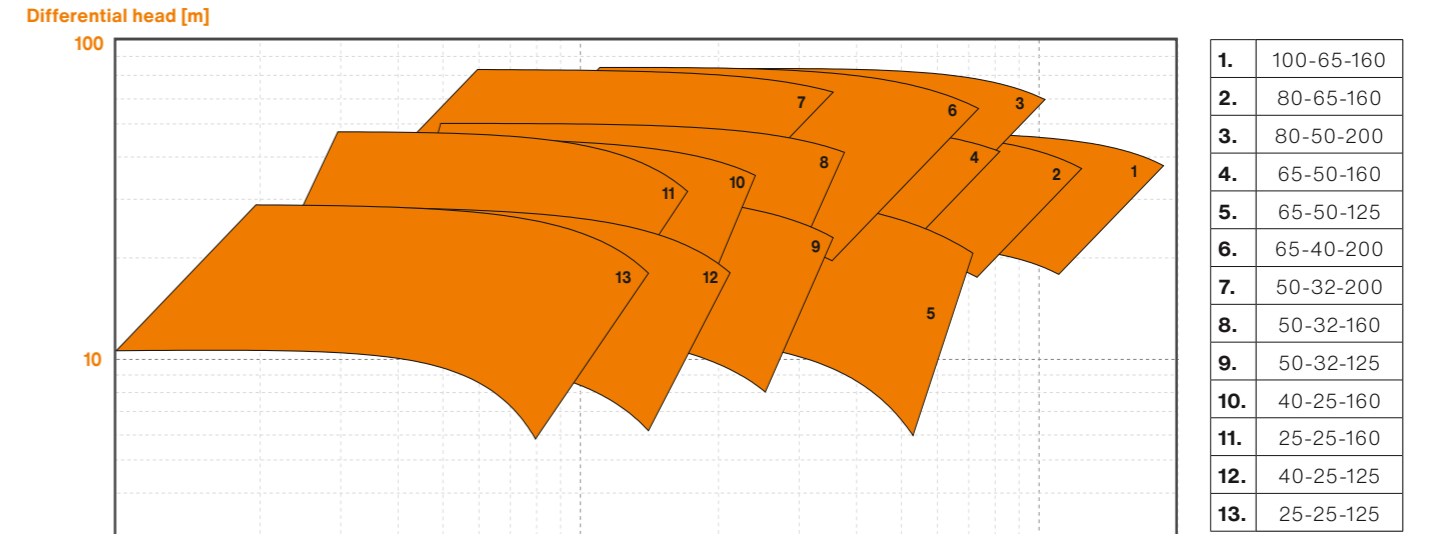
# PERFORMANCE RANGES

PERFORMANCE RANGE CHARTS 1.450 MIN<sup>-1</sup> (50 HZ)

1.	100-65-160
2.	80-65-160
3.	80-50-200
4.	65-50-160
5.	65-50-125
6.	65-40-200
7.	50-32-200
8.	50-32-160
9.	50-32-125
10.	40-25-160
11.	25-25-160
12.	40-25-125
13.	25-25-125

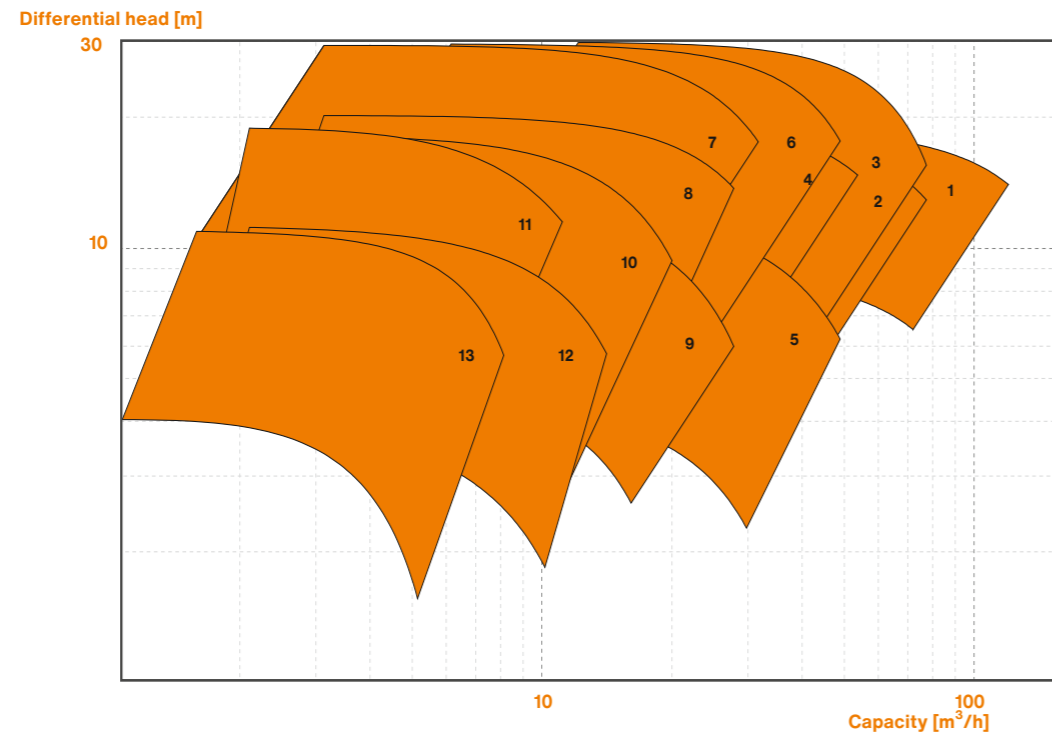


PERFORMANCE RANGE CHARTS 2.950 MIN<sup>-1</sup> (50 HZ)

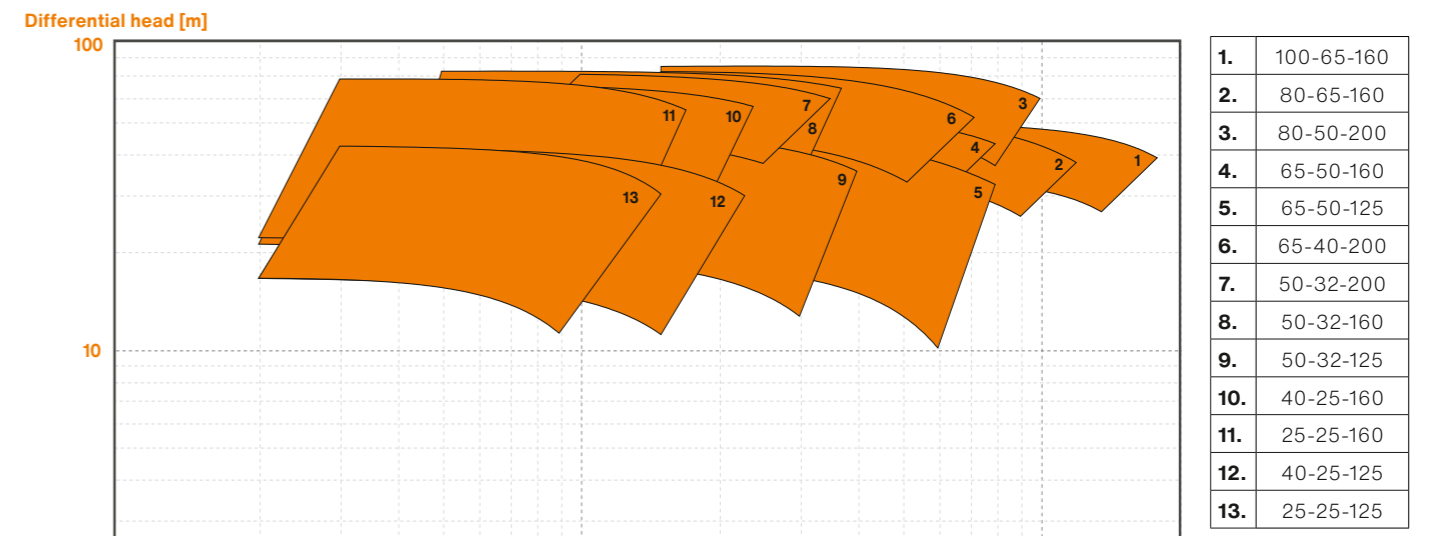


PERFORMANCE RANGE CHARTS 1.750 MIN<sup>-1</sup> (60 HZ)

1.	100-65-160
2.	80-65-160
3.	80-50-200
4.	65-50-160
5.	65-50-125
6.	65-40-200
7.	50-32-200
8.	50-32-160
9.	50-32-125
10.	40-25-160
11.	25-25-160
12.	40-25-125
13.	25-25-125



PERFORMANCE RANGE CHARTS 3.550 MIN<sup>-1</sup> (60 HZ)



# PORTFOLIO

Our solutions for all applications



## HORIZONTAL CENTRIFUGAL PUMPS WITH MECHANICAL SEALS

Capacity	up to 4,500 m <sup>3</sup> /h
Pump head	up to 90 m
Pump pressure	up to 16 bar
Main material	UHMW-PE (PE1000) · PP · PVDF · PTFE/PFA
Fluid temperature	up to 150°C
Pump sizes	40-25-125 to 500-400-700
Seals	Single/double metal-free MUNSCH REA mechanical seal



## HORIZONTAL CENTRIFUGAL PUMPS WITH MAGNETIC COUPLING

Capacity	up to 200 m <sup>3</sup> /h
Pump head	up to 90 m
Pump pressure	up to 16 bar
Main material	PP · PTFE/PFA
Fluid temperature	up to 180 °C
Seals	Sealless (magnetically coupled)

## PLASTIC EXTRUSION WELDERS

MUNSCH offers you a broad range of hand-held plastic extrusion welders with a full suite of accessories for container engineering, hydraulic engineering and landfill construction applications.

More information at:  
[www.munschwelding.com](http://www.munschwelding.com)



Already heard?



## VERTICAL CENTRIFUGAL PUMPS FOR TANKS AND PUMP SUMPS

Capacity	up to 650 m <sup>3</sup> /h
Pump head	up to 70 m
Pump pressure	up to 10 bar
Main material	PE-UHMW · PP · PVDF
Fluid temperature	up to 120 °C
Pump sizes	50-32-125 to 200-150-250
Vertical setting depth	500 to 3,000 mm

## WHAT YOU CAN EXPECT FROM MUNSCH

Expect more than just a pump! Our customers appreciate that we are accessible, good listeners and act fast. Our solutions do not stop at the pump discharge nozzle – we are interested in what our customers do and offer flexible solutions. We mean it – give us a try!

Your MUNSCH team is putting its heart and soul into problem solving and product development.

Together with our worldwide partners, we put every effort into meeting your pumping needs.



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