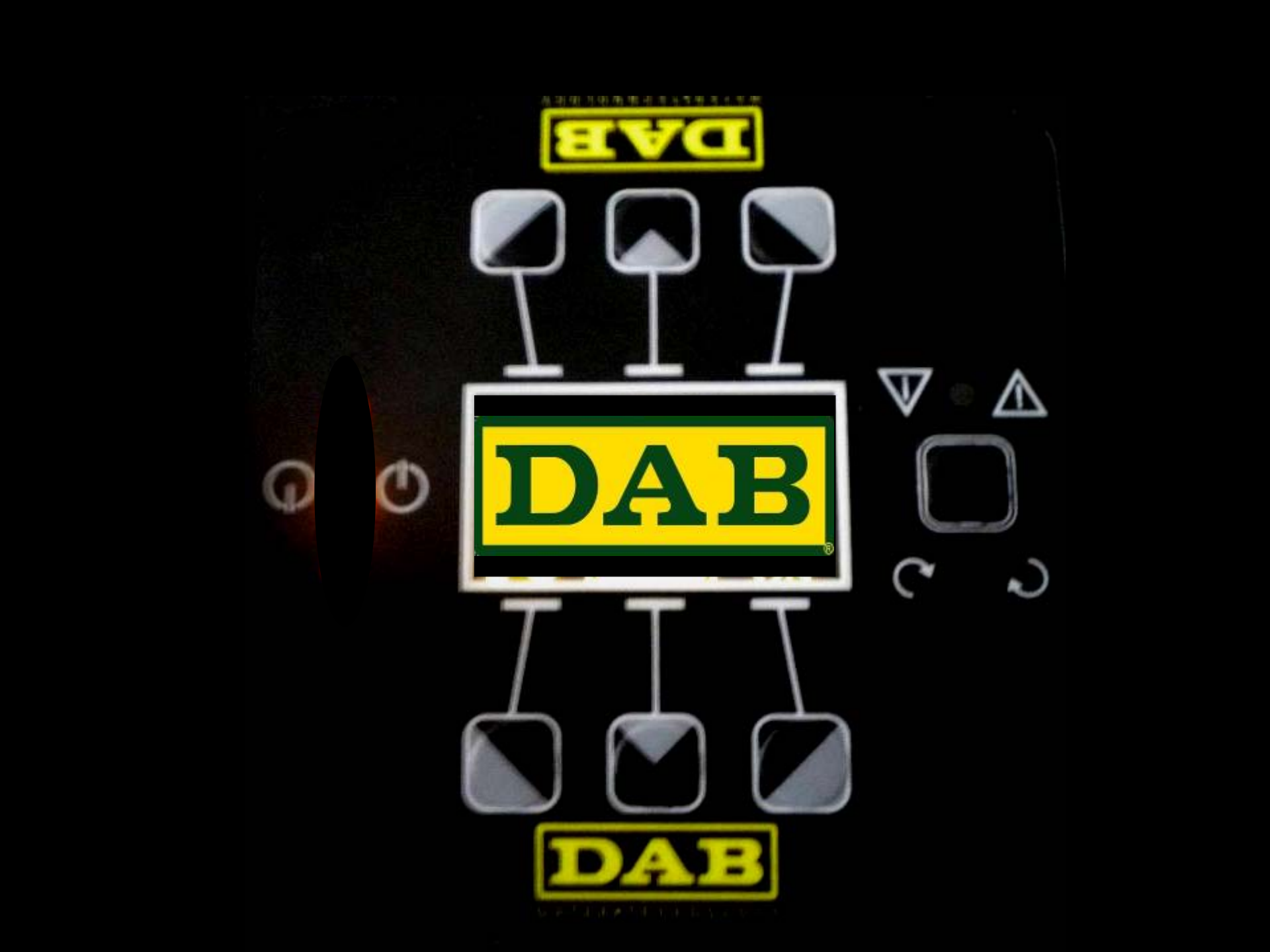

DAB
DAB
DAB

VARIABLE SPEED ELECTRONIC PUMPS FOR CIRCULATION SYSTEMS

Quality Innovation Technology

New range of electronic pumps for circulation systems controlled by newly designed **DAB frequency converters** type **MCE/C** on-board of the motor.

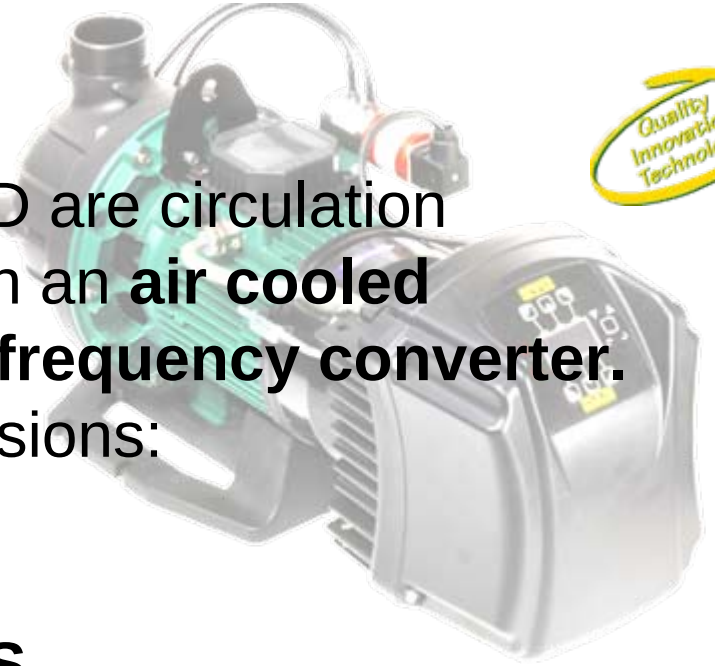
DAB

WATER•TECHNOLOGY

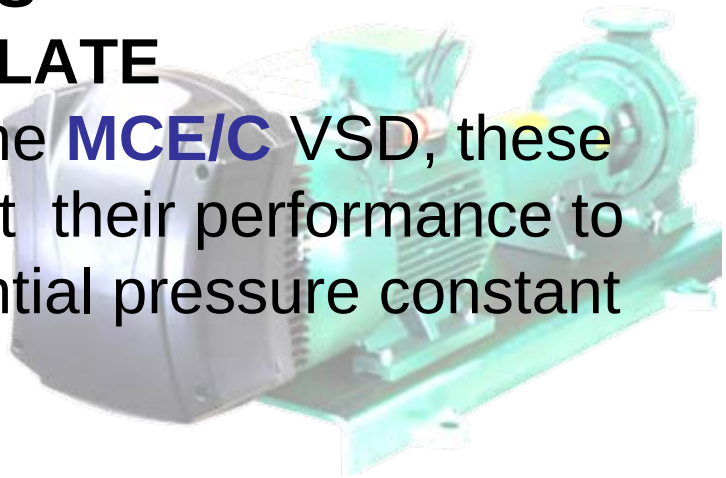
DWT GROUP PUMPS • MOTORS • ELECTRONICS

VARIABLE SPEED ELECTRONIC PUMPS FOR CIRCULATION SYSTEMS

What are?



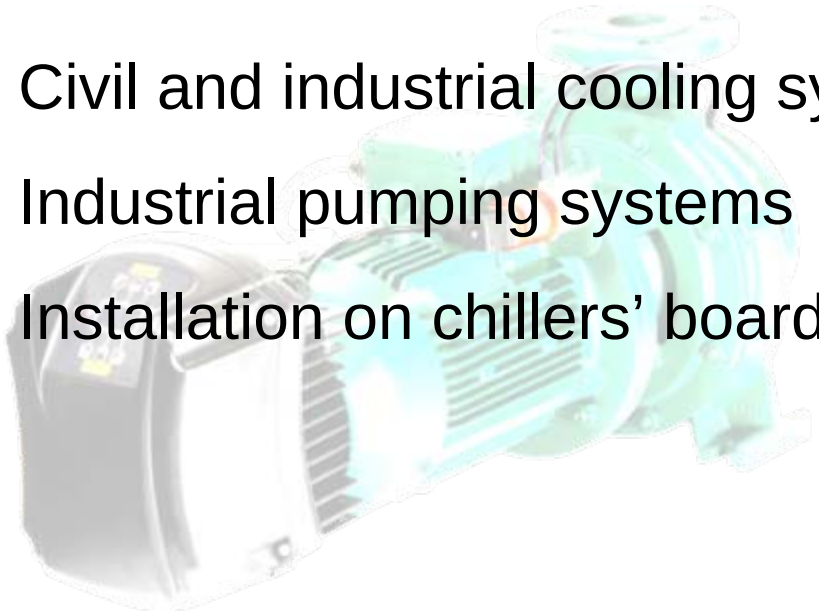
The pumps equipped with **MCE/C** VSD are circulation pumps for **hot and/or cold water**, with an **air cooled** electric motor equiped with **on-board frequency converter.**
They are available in the following versions:
IN LINE PUMPS,
CENTRIFUGAL BLOCK PUMPS
STANDARDIZED ENBLOCK PUMPS
STANDARDIZED PUMPS ON BEDPLATE
Versatile range thanks to the use of the **MCE/C** VSD, these pumps are able to automatically adapt their performance to the system's request, keeping differential pressure constant

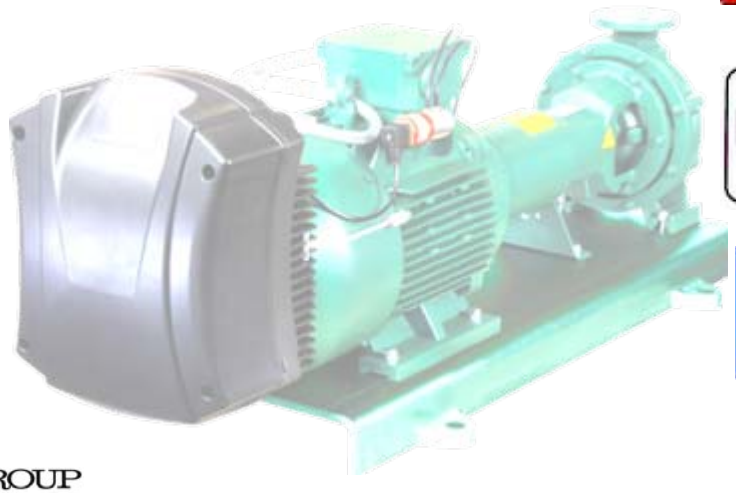


VARIABLE SPEED ELECTRONIC PUMPS FOR CIRCULATION SYSTEMS

Suitable for:

- Civil and industrial heating systems
- Civil and industrial air conditioning systems
- Civil and industrial cooling systems
- Industrial pumping systems
- Installation on chillers' board





VARIABLE SPEED ELECTRONIC PUMPS FOR CIRCULATION SYSTEMS

Pluses:

- Hydraulic efficiency and high performance
- Versatility thanks to the high quality materials
- Reliability: designed to guarantee a long life, using selected components.
- Soft start: this function prevents water hammering, protecting the pump and the system.
- Reduced noise in the system
- Reduced consumption of electricity and reduced mechanical wear

MCE/C info

Go to Menu

VARIABLE SPEED ELECTRONIC PUMPS FOR CIRCULATION SYSTEMS

MCE/C Frequency converter

Quality Innovation Technology

The pumps with MCE/C drivers on-board ensures **considerable energy savings** compared to the traditional constant speed ones.

The great versatility of the new MCE/C driver allows the application on a wide range pumps with **maximum power up to 15 KW**
and 2-pole or 4-pole motors

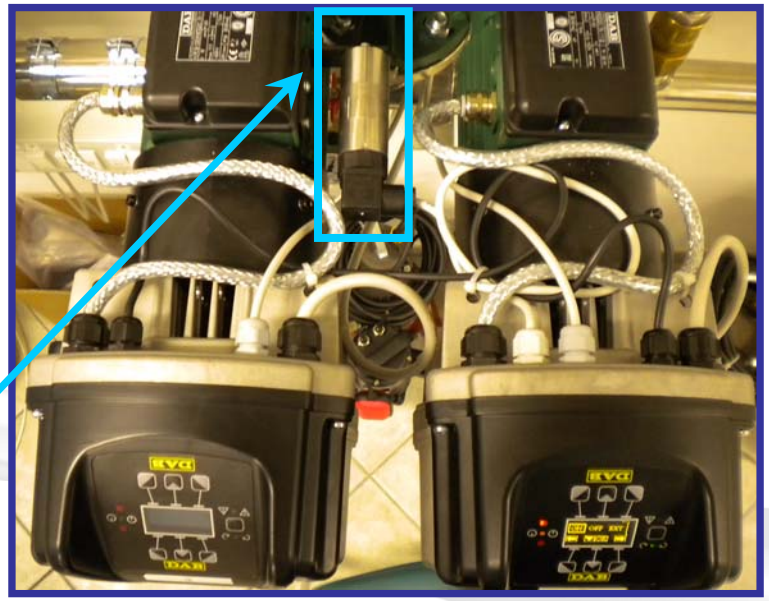
DWT GROUP PUMPS • MOTORS • ELECTRONICS

VSD PUMPS WITH MCE/C

MCE/C Frequency converter

MCE/C is designed for the managment of circulation pumps and, enabeling the **constant differential pressure control**, allows to adjust the pump performance to the effective system's demand.

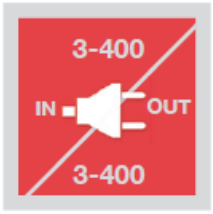
The MCE/C inverter is placed on the motor fan cover, making **installation quick and easy;** the differential pressure sensor is fixed to the motor.



MCE/C inverter: power supply

The MCE/C inverter is available in **7 sizes for different powers:**

- **1.1 KW; 1.5 KW; 2.2 KW**
  power supply 1x 220/240v. 50/60 Hz
  on request 3x 400v. 50Hz and 3x 460v. 60 Hz
- **3 KW; 5.5 KW**
  power supply 3x 400v. 50 Hz
  on request 3x 460v. 60 Hz
- **11 KW; 15 KW**
  power supply 3x 400v. 50
  on request 3x 460v. 60 Hz



VSD PUMPS WITH MCE/C

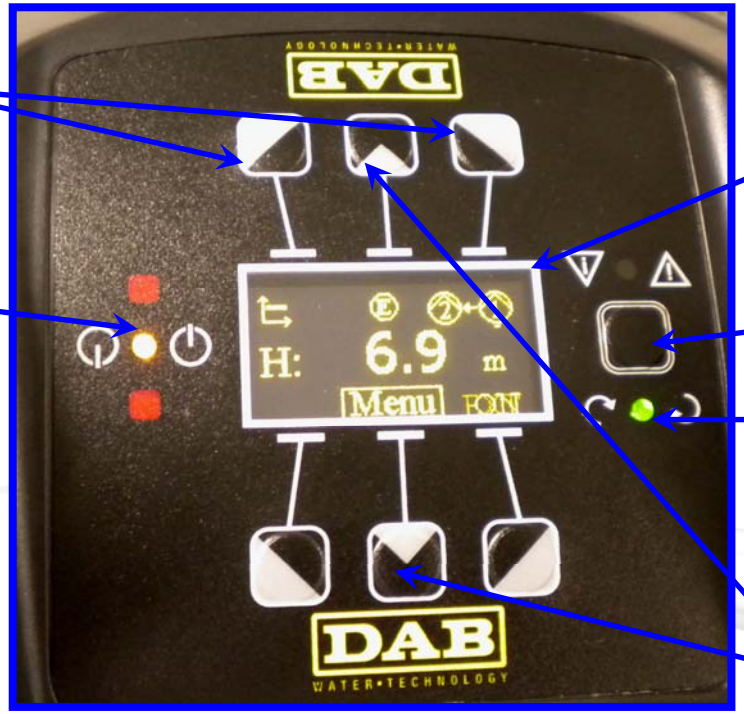
MCE/C inverter: Pluses

- ✓ Fast and simple setting thanks to the user-friendly **control panel**
- ✓ The MCE/C inverter **protects the motor**, but it is however recommended to install a properly sized thermal magnetic circuit breaker.
- ✓ Protection and increased average lifetime of the pump since the water hammering effect has been eliminated (**soft start**)
- ✓ Considerable **energy savings** because the MCE/C inverter allows the pump to consume the power strictly necessary to meet the system's requests
- ✓ Possibility to make **twin groups** using the special connection cable for the comunication of MCE/C inverters

VSD PUMPS WITH MCE/C

MCE/C inverter: User interface

MCE/C is equipped with a **user friendly interface display**(similar to the Dialogue+ interface), and the internal architecture with **double microprocessor** ensures maximum efficiency and reliability



DUPLICATED SELECTION KEYS

POWER SUPPLY LED

REVERSIBLE DISPLAY

UNLOCK/LOCK & MENU RETURN KEY

PUMP RUNNING LED

NAVIGATION & CONFIRMATION DUPLICATED KEY

VSD PUMPS WITH MCE/C

MCE/C inverter: User interface

The display is switched off and locked after 60 minutes from the setting. To modify the MCE/C settings, it is necessary to unlock the display by pressing the unlock/lock button and the button under the key simultaneously.

DISPLAY UNLOCKING

DISPLAY LOCKING

VSD PUMPS WITH MCE/C

MCE/C inverter: User interface

The MCE/C inverter parameters are set by the user using the **intuitive and simple** navigation menu.

To scroll through the options inside the menu, all you have to do is to **press the central button** on the inverter control interface

NAVIGATION MENU

MCE/C inverter: User interface

The new generation MCE/C inverter is equipped with an adjustable display that ensures correct reading on both installations with vertical and horizontal axis pumps.

The user can select the MCE/C display orientation by pressing the lower (**fig.1**) or upper (**fig.2**) keyboard. The MCE/C inverter display orients itself based on the user's preferences

Fig.1

Fig.2

VSD PUMPS WITH MCE/C

MCE/C inverter: Economy function

The **economy function** of the MCE/C allows the user to set a reduction factor of the set point up to a maximum of 50% in order to save energy during the night using the strictly necessary power to satisfying the reduced system's requirements .

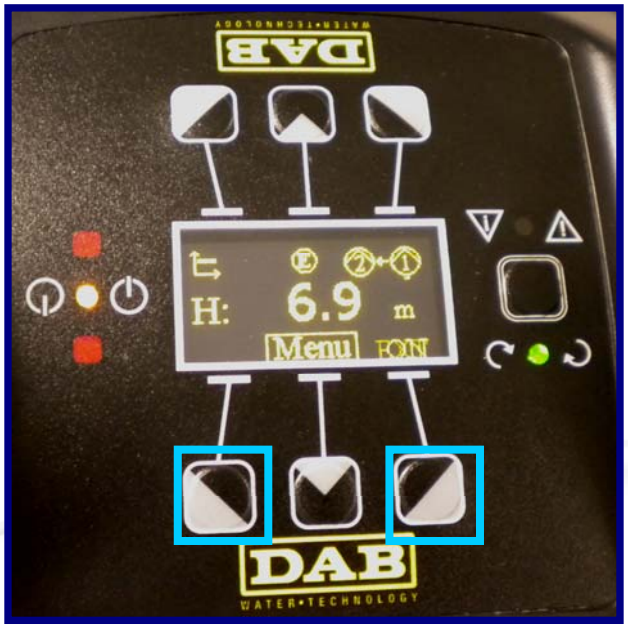
It is **directly settable from the control panel** and is indicated by the fixed E symbol in place of auto on the display; it is activated by an external control. When activated, the symbol E flashes.

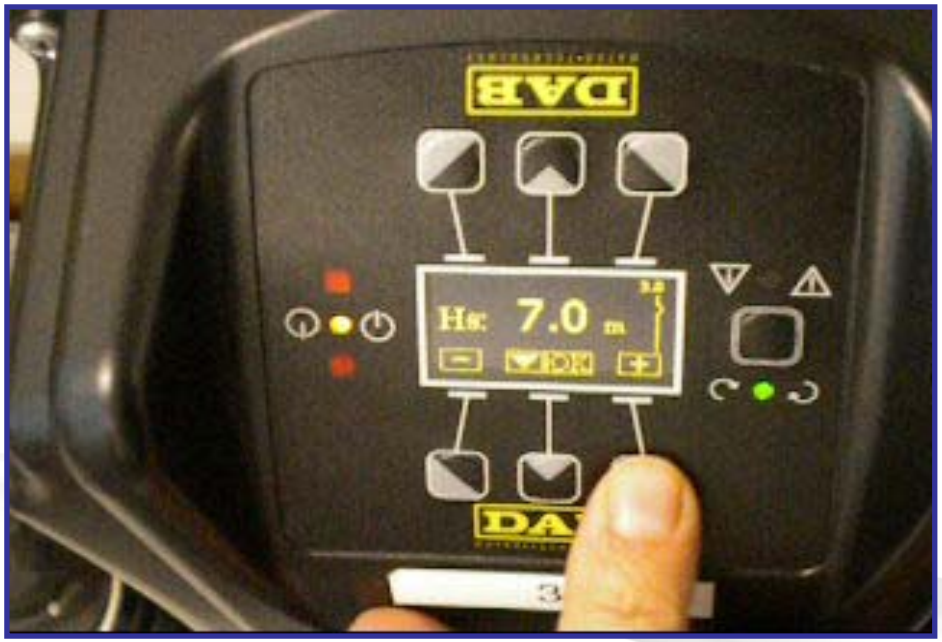
VSD PUMPS WITH MCE/C

MCE/C inverter: Set point

To set the set point it is necessary to unlock the display and scroll through the functions inside the menu **up to the third screen**.

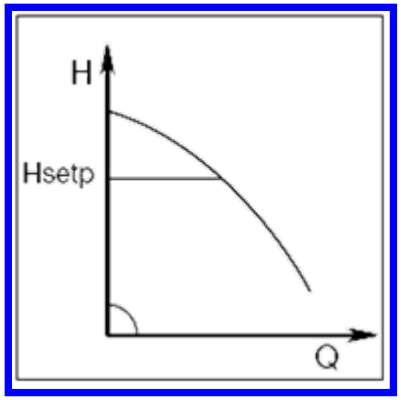
Afterwards **set the desired value** by pressing the side buttons(+ or -) on the MCE/C control interface and confirm with the central button





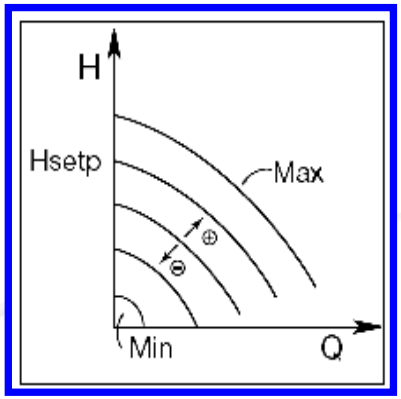
VSD PUMPS WITH MCE/C

MCE/C inverter: Adjustment



Mode: constant differential pressure

Keeps the constant differential pressure in the system at the set value H (setp) as the flow changes. This is a standard setting and can be directly set from the control panel.

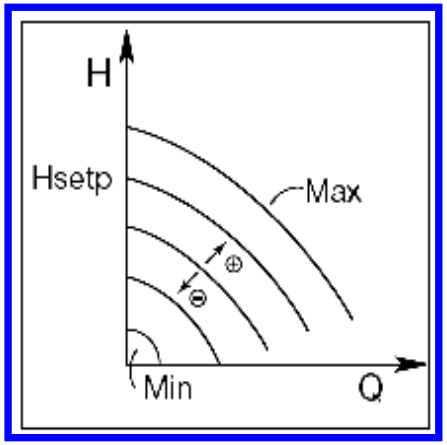


Mode: constant curve

Keeps the rotation speed at a constant rpm. It can be set between a minimun value and the nominal pump frequency. This setting can be directly set from the control panel

VSD PUMPS WITH MCE/C

MCE/C inverter: Adjustment



Mode:

constant curve with external analog signal

It keeps the speed rotation at a constant rpm, proportional to the voltage of the external analog signal.

The rotation speed changes linearly between the pump's nominal frequency when $\mathbf{V_{in}=10V}$ and the minimum frequency when $\mathbf{V_{in}=0V}$

This setting can be directly set from the control panel

VSD PUMPS WITH MCE/C

MCE/C inverter: Displayable parameters

SYMBOL	DESCRIPTION
H S E P h	Display parameters
H:	Head (m)
S:	Speed (rpm)
E:	Analogue signal
P:	Power
h:	Working hours

VSD PUMPS WITH MCE/C

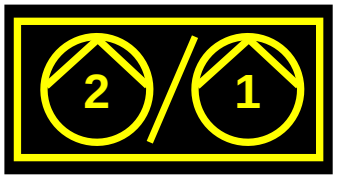
MCE/C inverter: Circulator status

1	Single or number 1 circulator; the symbol turns with the pump running
2	Number 2 circulator; the symbol turns with the pump running
ON	Circulator in on
OFF	Circulator off
EXT	Circulator controlled by a remote signal

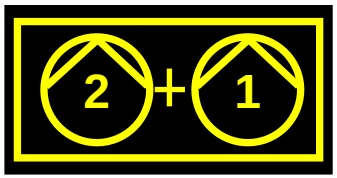
VSD PUMPS WITH MCE/C

MCE/C inverter: Execution

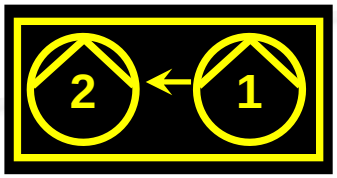
The connection of 2 MCE/C inverters on pumping groups makes 3 operation modes available:



Alternating every 24h: The 2 inverters alternate the work of the 2 pumps every 24h. In case of fault on working unit, the other is activated.



Simultaneous: The 2 inverters work at the same time. This mode is useful to get a flow that cannot be supplied by the single pump



Main/reserve: The adjustment is always carried out by the same inverter (main), and the other (reserve) intervenes only in the case of a fault on the main one

VSD PUMPS WITH MCE/C

MCE/C inverter: Connection

In the pumping groups of 2 pumps the MCE/C inverters are connected to each other with the appropriate connection cable.

It is sufficient to set the set point in one of the two MCE/Cs; **the second align itself**.

It is necessary to hydraulically connect the pumps on the same delivery and suction manifolds (not necessary for the twin circulators).

VSD PUMPS WITH MCE/C

MCE/C inverter: Errors and reset

Alarm symbol	Description	Reset
	**INTERNAL ERROR**	Cut off the voltage on the MCE After 5 min power the MCE again If it continues, replace the MCE
	**LOW MAINS VOLTAGE (LP)**	Cut off the voltage on the MCE After 5 min power the MCE again Check that the mains voltage is correct, otherwise reset to the plate data
	**HIGH MAINS VOLTAGE (HP)**	Cut off the voltage on the MCE After 5 min power the MCE again Check that the mains voltage is correct, otherwise reset to the plate data
	**CRITICAL OVERHEATING OF ELECTRONIC PARTS**	Cut off the voltage on the MCE After 5 minutes, remove the MCE from the pump and clean the motor cover and dissipator
	**SENSOR SIGNAL ABSENT**	Check the sensor connection; if it doesn't work, replace it

MCE/C inverter: Errors and reset

Alarm symbol	Description	Reset
	**OVERCURRENT PROTECTION**	Check that the circulator works freely Check that the antifreeze addition isn't greater than 30% maximum measurement
	**VOLTAGE ERROR**	Cut off the voltage on the MCE After 5 minutes, power the MCE again Check that the mains voltage is correct, otherwise reset to the plate data
	**TWIN COMMUNICATION ABSENT**	Check the integrity of the twin communication cable. Check that both circulators are powered

VSD PUMPS WITH MCE/C

MENU: select a type of electric pump with MCE

IN LINE pumps with MCE/C

CENTRIFUGAL pumps with MCE/C

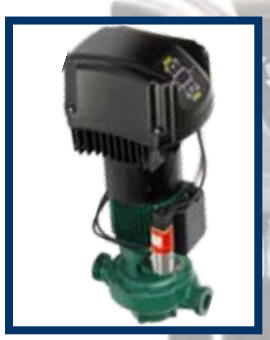
STANDARDIZED pumps with MCE/C

Enbock and on bedplate

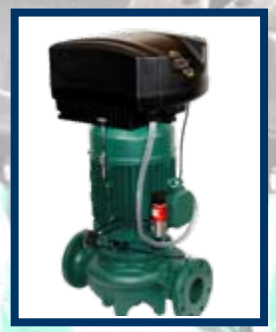
END

IN LINE with MCE/C

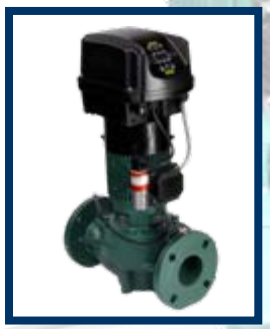
MENU: select the electric pump model



ALME - ALPE

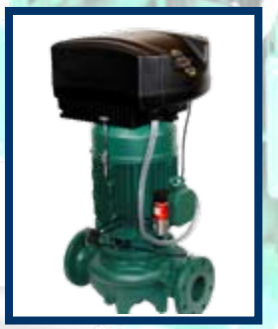


CPE - DCPE



KLME - DKLME /

KLPE - DKLPE



CME - DCME

END

STANDARDIZED WITH MCE/C

MENU: select the electric pump model

Quality Innovation Technology

NKM - GE & NKP - GE

KDNE

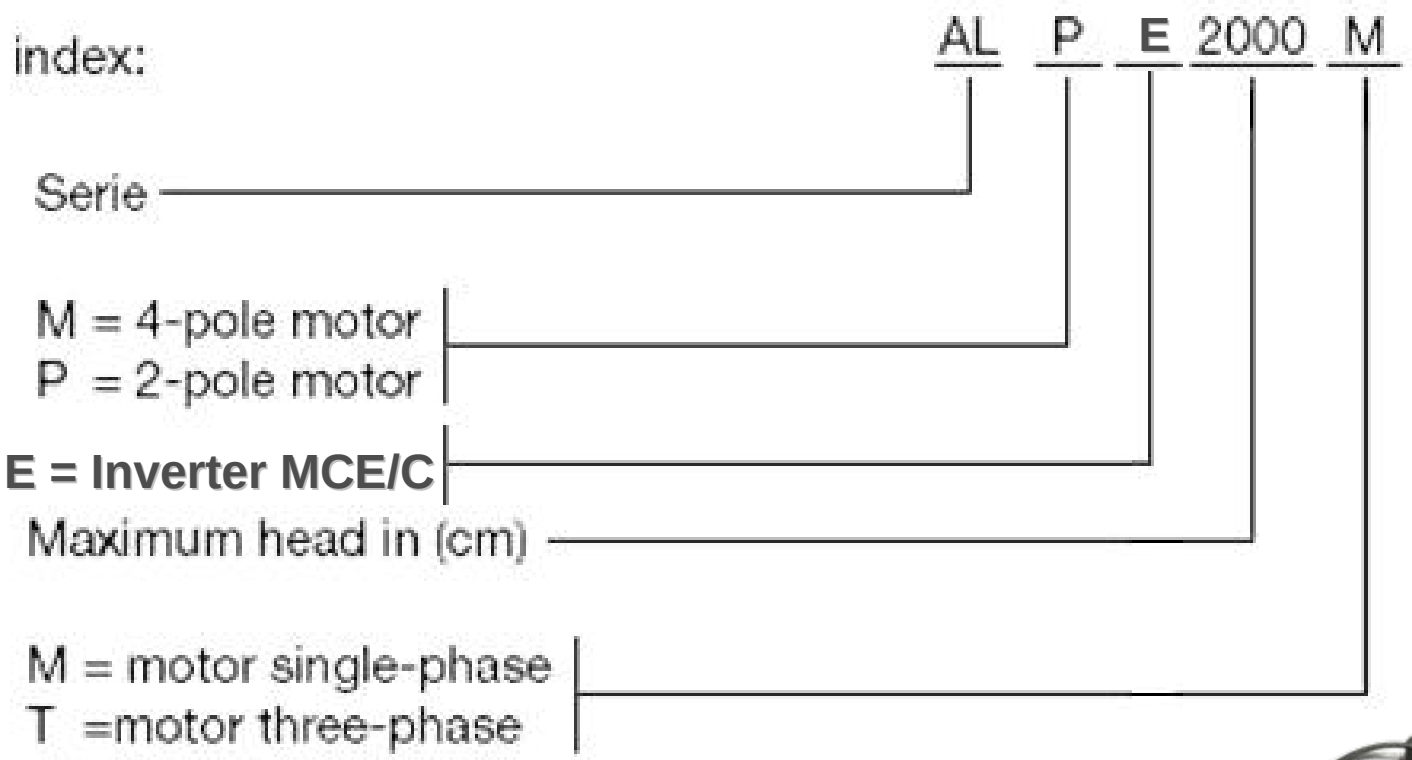
END

IN LINE PUMPS WITH MCE/C

ALME - ALPE

ALME - ALPE

Model identification



Construction characteristics: motor

Quality Innovation Technology

- Rotor mounted on oversized, greased-for-life ball brushings to guarantee **silent running and long life**.
- Induction asynchronous motor, closed and cooled with external ventilation, 4-pole for ALME 500 and 2-pole for ALPE 2000
- Construction compliant with the CEI 2-3 standard.
- Motor protection: IP55
- Insulation class: F
- Power supply: single phase 220-240 V, 50/60 Hz
- Installation: **Horizontal**

ALME - ALPE

Hydraulic characteristics

- Flow: from **1 to 8.4** m3/h
- Head **up to 21 m**
- Liquid characteristics: free from solid or abrasive substances, not aggressive, chemically neutral close to the characteristics of water (**max glycol 30%**)
- Temperature range: from -15°C to +120°C.
- Maximum ambient temperature: + 40° C
- Maximum working pressure: 10 bar (1000 kPa)

IN LINE PUMPS WITH MCE/C

KLME – KLPE / DKLME - DKLPE

KLME - KLPE / DKLME - DKLPE

Model identification

Quality Innovation Technology

D KL P E 80 / 1200 T

- Twin version
- Series
- M = 4-pole motor
  P = 2-pole motor
- **E = Inverter MCE/C**
- (DN) nominal diameter of the flanged connections
- Maximum head in (cm)
- M = single-phase motor
  T = three-phase motor

KLME - KLPE / DKLME - DKLPE

Construction characteristics

Quality Innovation Technology

- Flanged suction and delivery from DN 40 to DN 80 in PN 10
- Horizontal or vertical installation
- In the twin version an automatic clapet type valve incorporated in the delivery connection is provided to prevent water from recycling when the system is at a standstill
- The twin version alternates operation of the pumps when the reserve unit or the simultaneous operation of the two pumps is required.
- Cataphoresis coating for the pump body, upon request

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KLME - KLPE / DKLME - DKLPE

Technical characteristics

- Construction compliant with the CEI 2-3 standards.
- Motor protection: IP55
- Insulation class: F
- Power supply: single phase 220-240 V / 50-60 Hz
  Three-phase 400 V / 50 Hz
- Induction motor, closed and cooled with external ventilation

{ 4-pole for KLME and DKLME versions
2-pole for KLPE and DKLPE versions }

KLME - KLPE / DKLME - DKLPE

Hydraulic characteristics

- Flow: from 2 to 67 m3/h
- Head up to 13.7 m
- Liquid characteristics: free from solid or abrasive substances, not aggressive, chemically neutral close to the characteristics of water
- Temperature range: from -15°C to +120°C.
- Maximum working pressure: 10 bar (1000 kPa)
- Maximum ambient temperature: + +40° C

IN LINE PUMPS WITH MCE/C

CME / DCME & CPE / DCPE

CME / DCME & CPE / DCPE

Model identification

Quality Innovation Technology

C	M	E	65	420	A	BAQE	0,25	M

- C = Circulator
- M = 4 poles motore; P = 2 poles motore
- E = motor complete with MCE/C INVERTER
- 65 = (DN) Nominal diameter of flanged connectors
- 420 = Maximum head (cm)
- A = Cast iron impeller; B = Bronze impeller
- BAQE = Mechanical seal
- 0,25 = P2 (motor - kW)
- M = Single-phase; T = Three-phase

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Construction characteristics

- Flanged suction and delivery in PN 16 from DN 40 to DN 150
- Horizontal and vertical installation
- Impellers in technopolymer for DN 40 and DN 50
- Impellers in cast iron from DN 65 to DN 150.

Special versions for CME and CPE

Quality Innovation Technology

Impeller in bronze for pumping aggressive liquids from DN65 to DN 150

Cataphoresis coating for pump body and seal disc

MECHANICAL SEALS:
versions **BQQE , BQQV , BAQV**
different materials available for special applications

CME / DCME & CPE / DCPE

Technical characteristics

- Construction compliant with the CEI 2-3 standards.
- Motor protection: IP55
- Insulation class: F
- Power supply: single phase 220-240 V / 50-60 Hz
  Three-phase 400 V / 50 Hz
- Induction motor, closed and cooled with external ventilation

  4-pole for CME and DCME
  2-pole for CPE and DCPE

CME / DCME & CPE / DCPE

Hydraulic characteristics

- CME, DCME Flow: from 1.2 to 360 m3/h with Head up to 34 metres
- CPE, DCPE Flow: from 1.2 to 23 m3/h with Head up to 56 metres
- Power up to 15 kW
- Liquid characteristics: free from solid or abrasive substances, not aggressive, chemically neutral
- Temperature range:
  from -10° C to +130° C for DN40 - 50 (and DCME - DCPE)
  from -10° C to +140° C for DN65 up to DN150
- Maximum working pressure: 16 bar (1600 kPa)
- Maximum ambient temperature: +40° C

CENTRIFUGAL PUMPS WITH MCE/C

KCE \ KCVE

Construction characteristics

- Impeller fitted on motor shaft extension
- Components in contact with the pumped liquid in technopolymer or stainless steel AISI 304
- Mechanical seal in silicon/graphite carbide and EPDM
- Pump body can be turned 90° for having a greater flexibility

Technical characteristics

- Asynchronous, air cooled motor with continuous work S1, 2-pole
- Max. ambient temperature: **+ 65° C**
- Protection IP55
- Insulation class F
- Watertight, water resistant, oversized bearings

Hydraulic characteristics

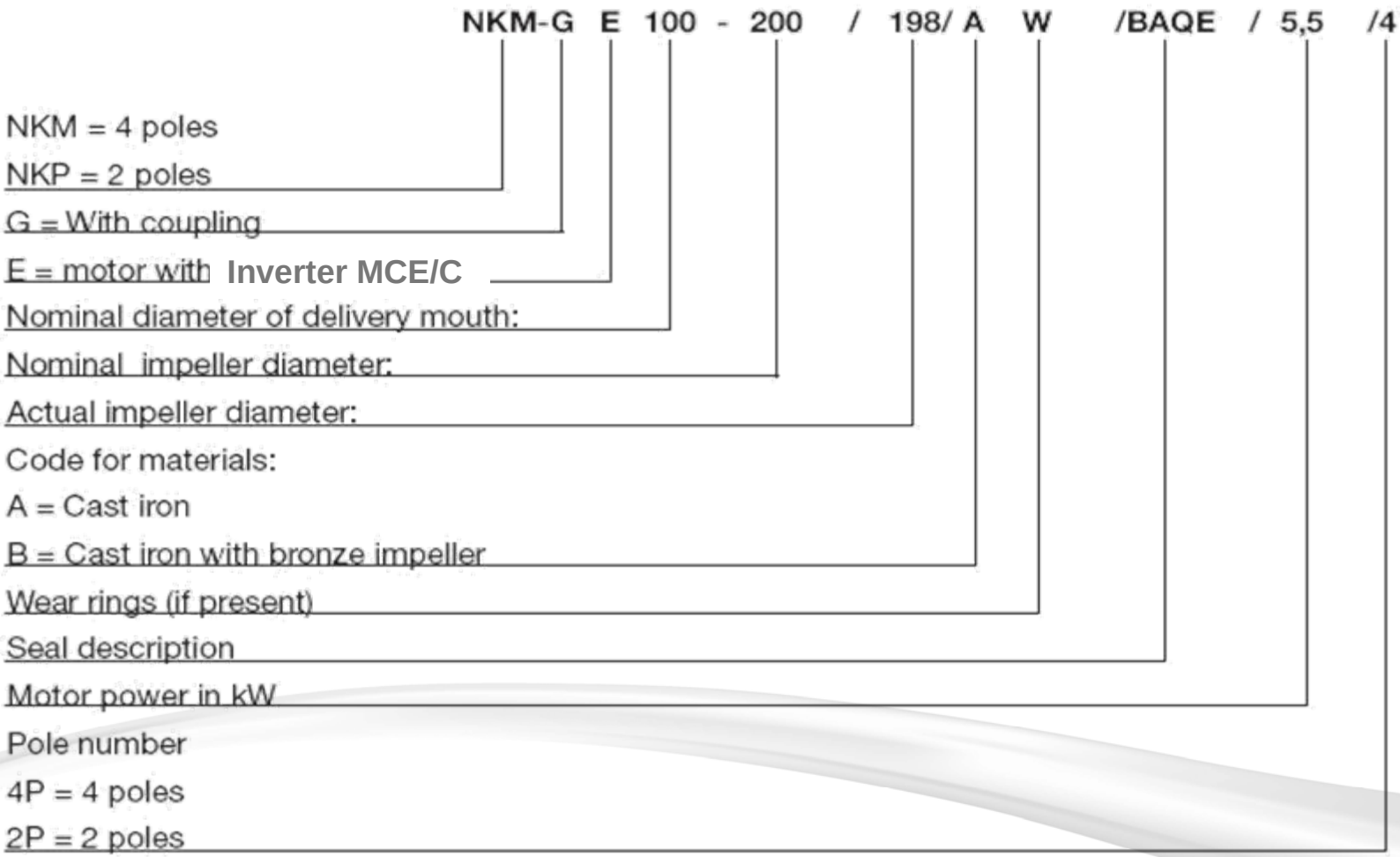
- Flow: from 3 to 45 m3/h
- Head: up to 24 m.
- Maximum working pressure: 6.5 bar
- Liquid temperature range: from -10° C to +55° C.
- Maximum percentage of glycole: up to 40%

ENBLOCK STANDARDIZED PUMPS WITH MCE/C

NKM-GE / NKP-GE

NKM-GE \ NKP-GE

Model identification



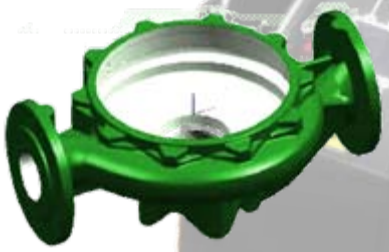
Construction characteristics

- Single stage, cast iron spiral body, compliant with DIN-EN 733; flanges compliant with DIN 2533 and DIN 2532 for DN 200.
- Closed cast iron impeller, dynamically balanced with axial thrust compensation holes
- Standardized mechanical seal according to DIN24960
- Horizontal and vertical installation
- Impellers in bronze upon request.

Special versions upon request

Quality Innovation Technology

Impeller in bronze for pumping aggressive liquids



Cataphoresis coating for pump body and seal disc

MECHANICAL SEALS:
versions **BQQE , BQQV , BAQV**
different materials available for special applications

Technical characteristics

- Construction compliant with the CEI 2-3 standards.
- Motor protection: IP55
- Insulation class: F
- Power supply: single phase 220-240 V / 50-60 Hz
  Three-phase 400 V / 50 Hz
- Induction motor, closed and cooled with external ventilation

NKM-GE \ NKP-GE

Hydraulic characteristics

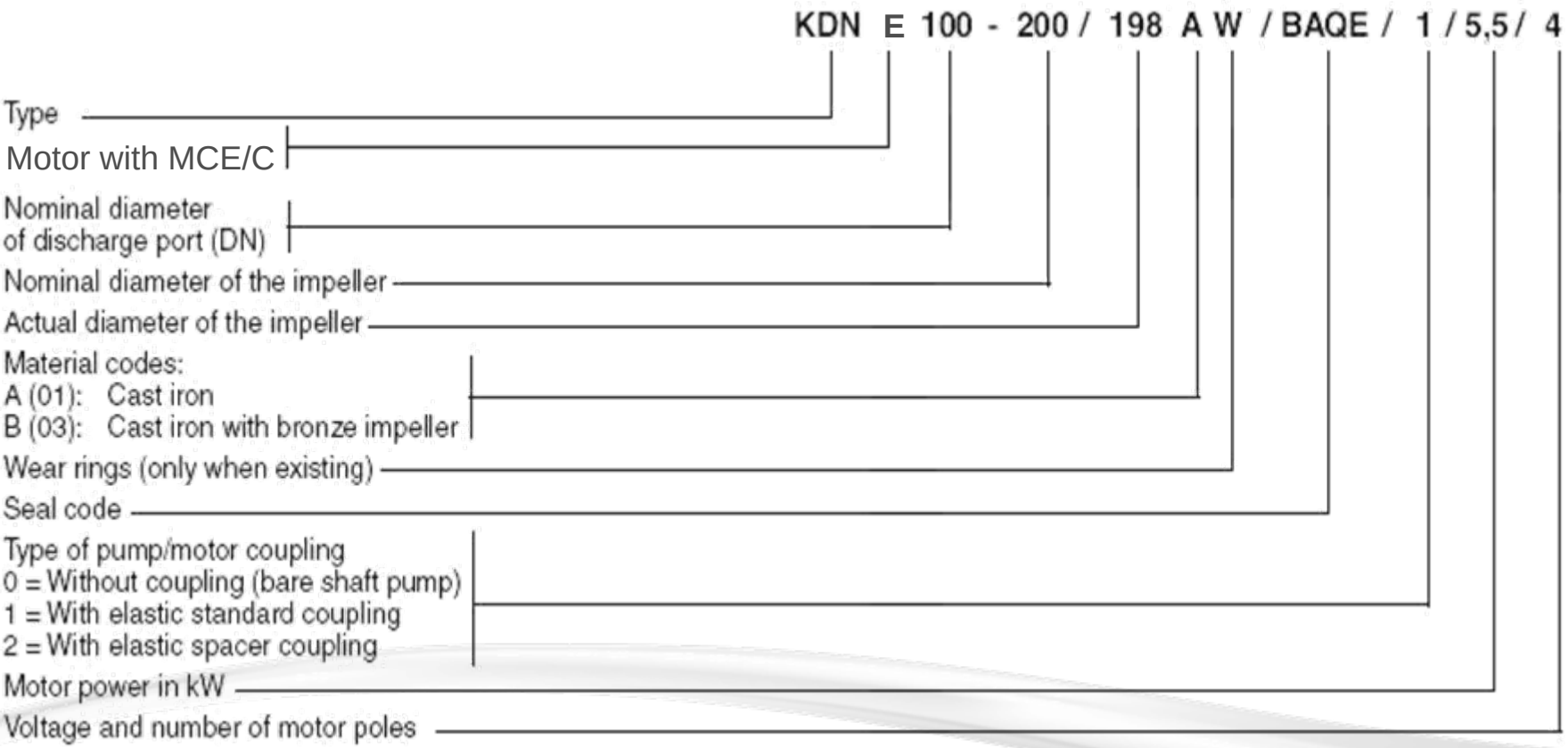
- Flow: from 1.2 to 420 m3/h
- Head up to 72 metres
- Power up to 15 kW
- Liquid characteristics: free from solid or abrasive substances, not aggressive, chemically neutral close to the characteristics of water
- Temperature range: from -10° C to +140° C.
- Maximum working pressure: 16 bar (1600 kPa)
- Maximum ambient temperature: + +40° C

STANDARDIZED PUMPS ON BEDPLATE WITH MCE/C

KDN-E 2 & 4-POLE

KDN-E 2 & 4-POLE

Model identification



KDN-E 2 & 4-POLE

Construction characteristics

- Single stage, cast iron spiral body, compliant with DIN-EN 733; flanges compliant with DIN 2533 and DIN 2532 for DN 200.
- Closed cast iron impeller, dynamically balanced with axial thrust compensation holes
- Standardized mechanical seal according to DIN24960
- Horizontal installation

KDN-E 2 & 4-POLE

Special versions upon request

Impeller in bronze for pumping aggressive liquids

Cataphoresis coating for pump body and seal disc

MECHANICAL SEALS:
versions **BQQE , BQQV , BAQV**
different materials available for special applications

KDN-E 2 & 4-POLE

Hydraulic characteristics

- Flow: from 1.2 to 420 m3/h
- Head up to 63 metres
- Power up to 15 kW
- Liquid characteristics: free from solid or abrasive substances, not aggressive, chemically neutral close to the characteristics of water
- Temperature range: from -10° C to +140° C.
- Maximum working pressure: 16 bar (1600 kPa)
- Maximum ambient temperature: + +40° C

ELECTRONIC PUMPS FOR CIRCULATION SYSTEMS

Quality Innovation Technology

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