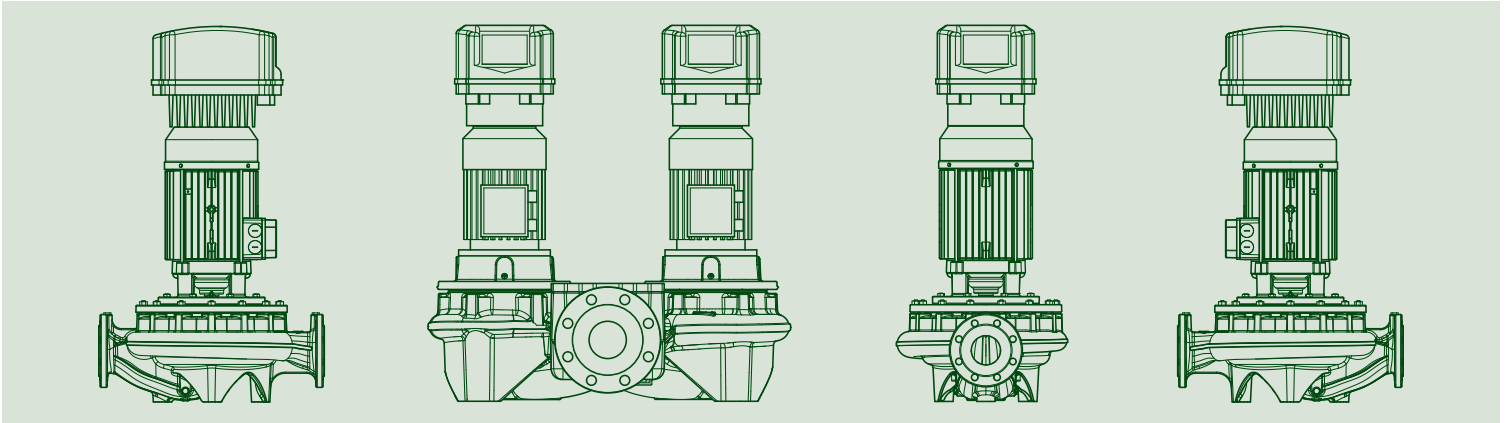


# ELECTRONIC IN-LINE PUMPS



**TECHNICAL  
CATALOGUE**



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**CERTIFICATO N.  
CERTIFICATE N. 9101.COGE**

SI CERTIFICA CHE IL SISTEMA DI GESTIONE PER LA QUALITÀ DI  
WE HEREBY CERTIFY THAT THE QUALITY MANAGEMENT SYSTEM OPERATED BY

**DWT HOLDING SPA**  
VIA MARCO POLO 14 - 35035 MESTRINO (PD)

UNITÀ OPERATIVE / OPERATIVE UNITS

Vedere gli Allegati per le Unità Operative (n° 6 pagine)  
View the Annexes for the Operative Units (n° 6 pages)

E CONFORME ALLA NORMA / IS IN COMPLIANCE WITH THE STANDARD  
**ISO 9001:2015**

PER LE SEGUENTI ATTIVITÀ / FOR THE FOLLOWING ACTIVITIES

Progettazione, produzione, commercializzazione e assistenza di pompe, elettropompe, gruppi di pompaggio e sistemi elettronici di controllo per acqua fredda, calda ad uso civile, industriale ed agricolo e relativi componenti ed accessori  
*Design, production, sale and assistance of pumps, electric pumps, pumping units and electronic control systems for cold and hot water, for residential, industrial and agriculture use including components and accessories*

Ulteriori informazioni riguardanti l'applicabilità dei requisiti ISO 9001:2015 possono essere ottenute consultando l'organizzazione  
Further clarifications regarding the applicability of ISO 9001:2015 requirements may be obtained by consulting the organization

IL PRESENTE CERTIFICATO È SOGGETTO AL RISPETTO DEL  
REGOLAMENTO PER LA CERTIFICAZIONE DEI SISTEMI DI GESTIONE  
THE USE AND THE VALIDITY OF THE CERTIFICATE SHALL SATISFY THE  
REQUIREMENTS OF THE RULES FOR CERTIFICATION OF MANAGEMENT SYSTEMS

DATE:	PRIMA CERTIFICAZIONE FIRST CERTIFICATION	EMISSIONE CORRENTE CURRENT ISSUE	SCADENZA EXPIRY
	1995-07-17	2021-05-11	2024-05-27

  
IMQ s.p.a. - VIA QUINTILIANO, 43 - 20138 MILANO ITALY  
Management Systems Division - Flavio Ormigo



SGQ N° 005 A

Modello degli Accordi di Riferimento, approvato dal Comitato di Gestione del Consorzio, è in vigore dal 15/05/2018. Per informazioni rivolgersi al Consorzio.

IAF: 18, 19, 29




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**ALLEGATO N. 9101.COGE-1  
ANNEX N.**

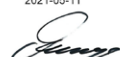
**DWT HOLDING SPA**  
VIA MARCO POLO 14 - 35035 MESTRINO (PD)  
**DAB PUMPS SPA**  
VIA MARCO POLO 14 - 35035 MESTRINO (PD)


Attività:  
Activities:

Progettazione, produzione, commercializzazione e assistenza di pompe, elettropompe, gruppi di pompaggio e sistemi elettronici di controllo per acqua fredda, calda ad uso civile, industriale ed agricolo e relativi componenti ed accessori  
*Design, production, sale and assistance of pumps, electric pumps, pumping units and electronic control systems for cold and hot water, for residential, industrial and agriculture use including components and accessories*

IL PRESENTE ALLEGATO HA LO SCOPO DI ESPlicitARE LE ATTIVITÀ SVOLTE PRESSO IL SINGOLO  
SITUAZIONI OPERATIVE NELL'AMBITO DELLA CERTIFICAZIONE DEL SISTEMA DI GESTIONE  
RILASCIATA A DWT HOLDING SPA  
THE AIM OF PRESENT ANNEX IS TO EXPLAIN THE ACTIVITIES PERFORMED IN EACH SITE/OPERATIVE UNIT  
OF THE MANAGEMENT SYSTEM CERTIFICATION ISSUED TO DWT HOLDING SPA  
PER LA VALIDITÀ RIFERIRSI AL CERTIFICATO N. 9101.COGE  
FOR THE VALIDITY PLEASE REFER TO CERTIFICATE N. 9101.COGE

DATE:	PRIMA CERTIFICAZIONE FIRST CERTIFICATION	EMISSIONE CORRENTE CURRENT ISSUE	SCADENZA EXPIRY
	1995-07-17	2021-05-11	2024-05-27


  
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Management Systems Division - Flavio Ormigo




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**SCAN HERE**  
For more information.

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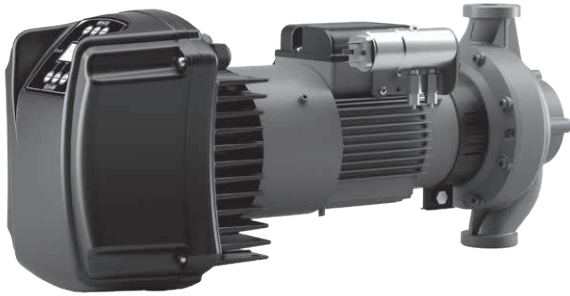
## TECHNICAL APPENDIX

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# ALME / ALPE

## ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS



### TECHNICAL DATA

**Flow rate (range):** from 1 m<sup>3</sup>/h to 8,4 m<sup>3</sup>/h

**Head:** Up to 21 m

**Type of pumped liquid:** clean, free from solid or abrasive substances, non-viscous, non-aggressive, non-crystallized

**Glycol percentage (maximum):** 50%

**Liquid temperature (range):** from -15°C to +120°C

**Maximum ambient temperature:** +40°C

**Operation pressure (maximum):** 10 bar / 1000 kPa

**Flanging or threading:** threading GAS 2" M

**Motor protection class:** IP55

**Motor insulation class:** F

**Impeller material:** technopolymer

**Single phase power input:** 230 V 50 Hz

**Type of installation:** fixed in horizontal position

Electronic in-line pumps for water recirculation in heating or conditioning systems and where there are solar thermal panels (solar collectors). Possibility of remote control thanks to the DConnect service (DConnect Box supplied separately).

### CONSTRUCTION FEATURES OF THE PUMP

Pump body and motor support in cast iron. Threaded suction and delivery port. Technopolymer impeller, silicon carbide/silicon carbide seal.

### CONSTRUCTION FEATURES OF THE MOTOR

Closed and air-cooled asynchronous motor, it is available with two pole (ALPE) or four-pole (ALME). Rotor mounted on ball bearings greased for life. Thermo-ampereometric protection and capacitor incorporated in the single-phase version.

### CONSTRUCTION FEATURES OF THE ELECTRONIC

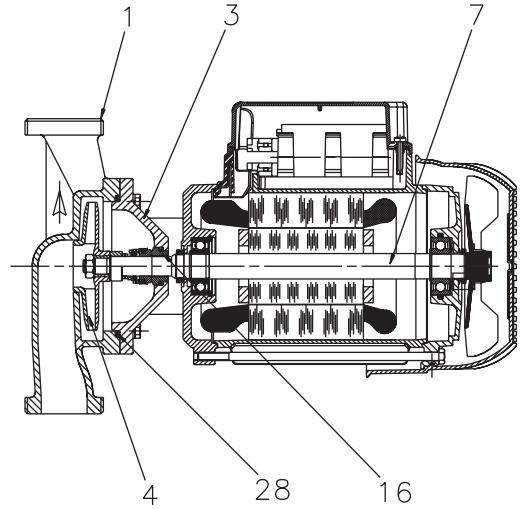
MCE-C variable frequency drive installed as standard for greater pump operating efficiency. It is equipped with a display for configuration and control. MEC-C is settable in pressure regulation mode, differentiates constant, constant curve, constant curve with external analogue signal, with the proportional differential pressure. The variable frequency drive allows energy savings and protection against water hammer. It must be mounted on the motor fan cover to take advantage of the cooling. It is possible to connect two MCE-C variable frequency drive together (through a special connection cable, supplied separately) for the creation of twin units. Compatibility with the DConnect service (DConnect Box supplied separately).

# ALME / ALPE

## ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

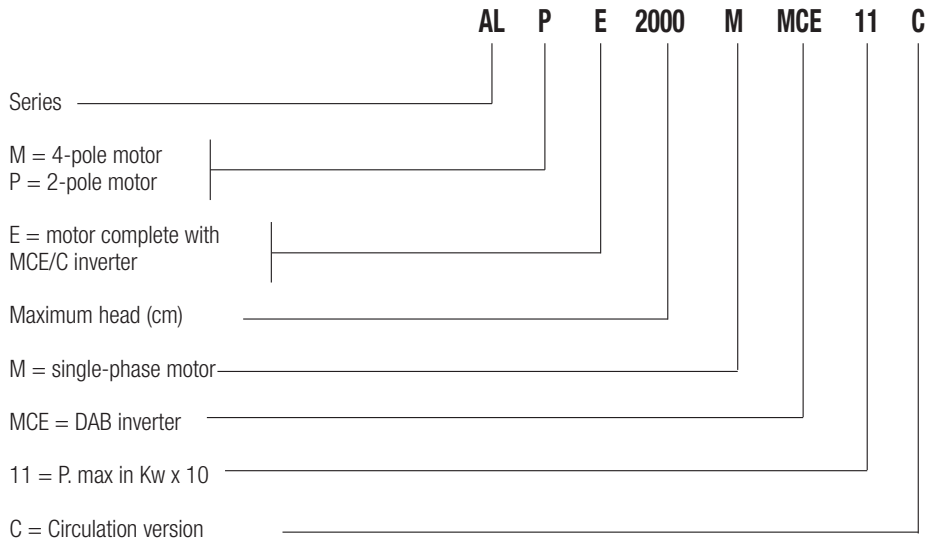
### MATERIALS

N.	PARTS	MATERIALS
1	PUMP BODY	CAST IRON 250 UNI ISO 185
3	SUPPORT	CAST IRON 250 UNI ISO 185
4	IMPELLER	TECHNOPOLYMER
7	SHAFT WITH ROTOR	AISI 316 STAINLESS STEEL
16	MECHANICAL SEAL	SILICON CARBIDE / SILICON CARBIDE
28	OR RING	EPDM RUBBER



\* In contact with the liquid

**– Legend:**  
(example)



**Installation: fixed, horizontal position.**



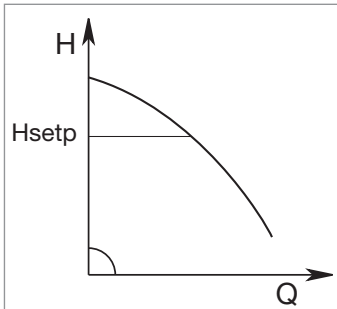
### MCE/C INVERTER

#### MODES OF OPERATION

All the functions listed below can be consulted by the users (including less experienced ones) by simply scrolling through the MCE/C menu. The calibration and the modification of the parameters are protected, and can only be completed by expert users.

#### 1 - $\Delta P$ -c constant differential pressure adjustment mode

The  $\Delta P$ -c adjustment mode keeps the differential pressure of the system constantly at the H (setp) value set, even in case of variation of the flow rate. This is the standard adjustment used. It can be set directly from the MCE/C control panel. The inverter keeps the differential pressure (H setp) constant even in case of flow variation.



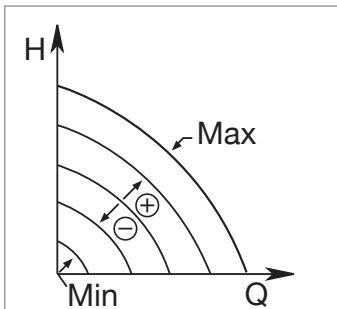
This adjustment is particularly indicated for the following systems:

- a. two-pipe heating systems with thermostat valves
- b. underfloor heating systems with thermostat valves
- c. single-pipe heating systems with thermostat valves and calibration valves
- d. systems with primary circuit pumps

#### 2 - Constant curve adjustment modes

##### 2.1 - Constant curve adjustment

The rotation speed is kept at a constant number of revolutions. This rotation speed can be set between a minimum value and the nominal frequency of the circulation pump (e.g. between 15 Hz and 50 Hz). This mode can be set using the control panel on the MCE cover.

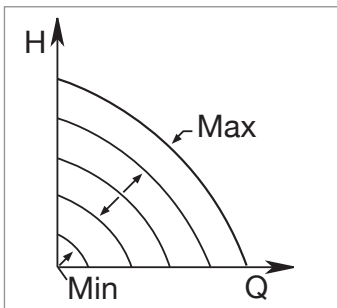


##### 2.2 - Adjustment of the constant curve with external analogue signal

The rotation speed is kept at a constant number of revolution in proportion with the voltage of the external analogue signal.

The rotation speed changes in a linear way, between the nominal frequency of the pump when  $V_{in} = 10$  V, and the minimum frequency when  $V_{in} = 0$  V.

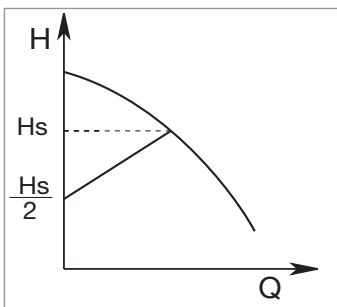
This mode can be set using the control panel on the MCE cover.



#### 3 - $\Delta P$ -v \* proportional differential pressure adjustment mode

With  $\Delta P$ -v adjustment mode, with the variation of the flow rate, the value of the delivery of the head also varies in a linear manner, from Hsetp to Hsetp/2.

\* in order to know the availability of the function on specific models contact our customer service.



For more information refer to the technical appendix.

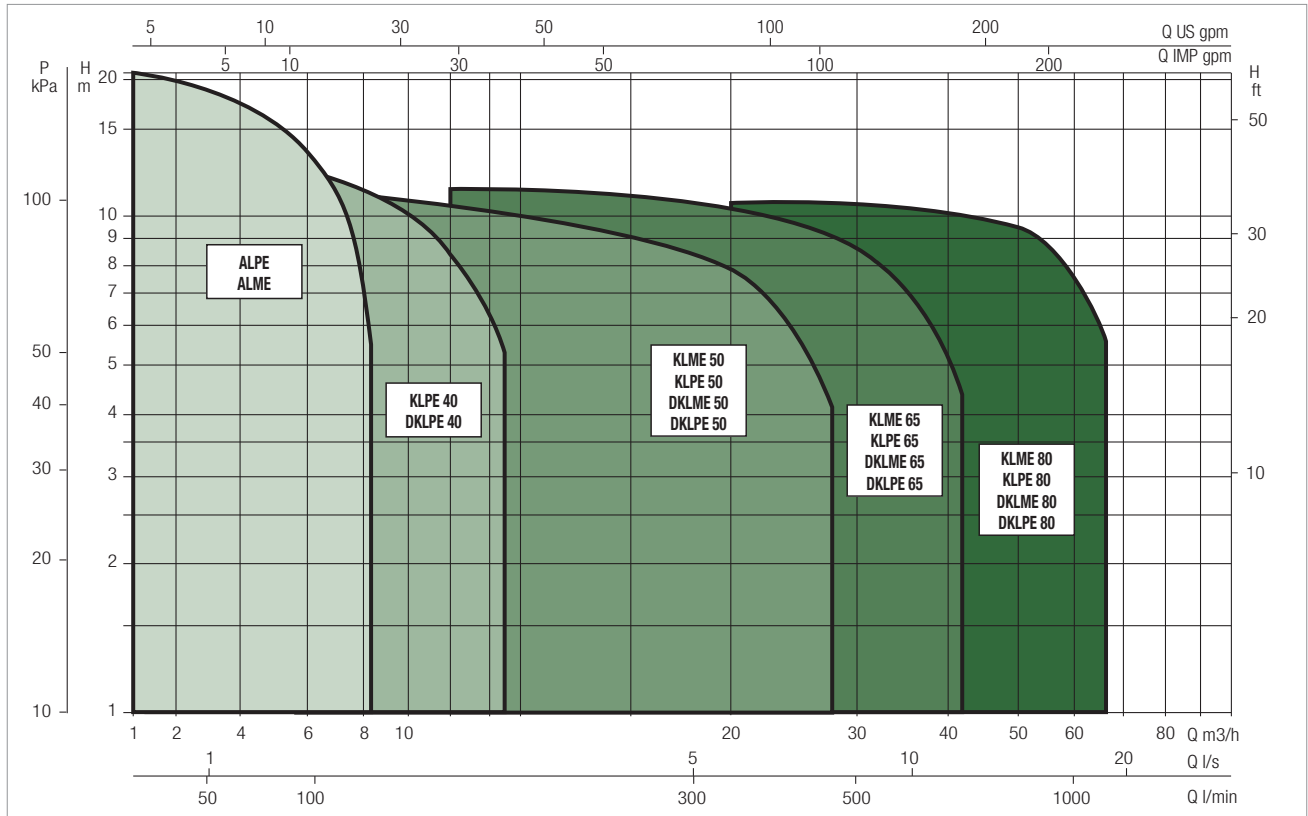
# ELECTRIC IN-LINE PUMPS

## ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

### PERFORMANCE RANGE

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

### GRAPHIC SELECTION TABLE



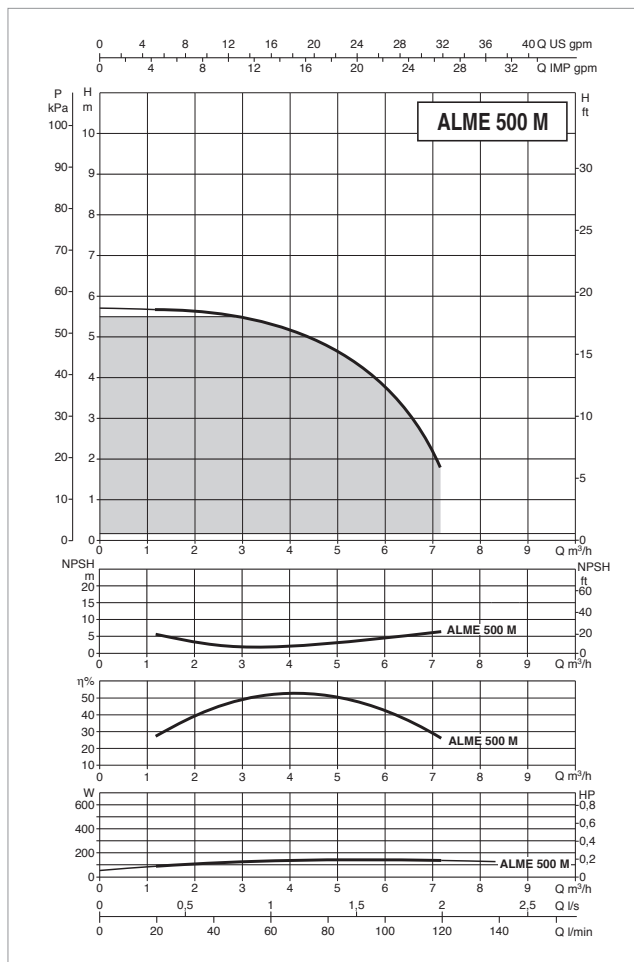
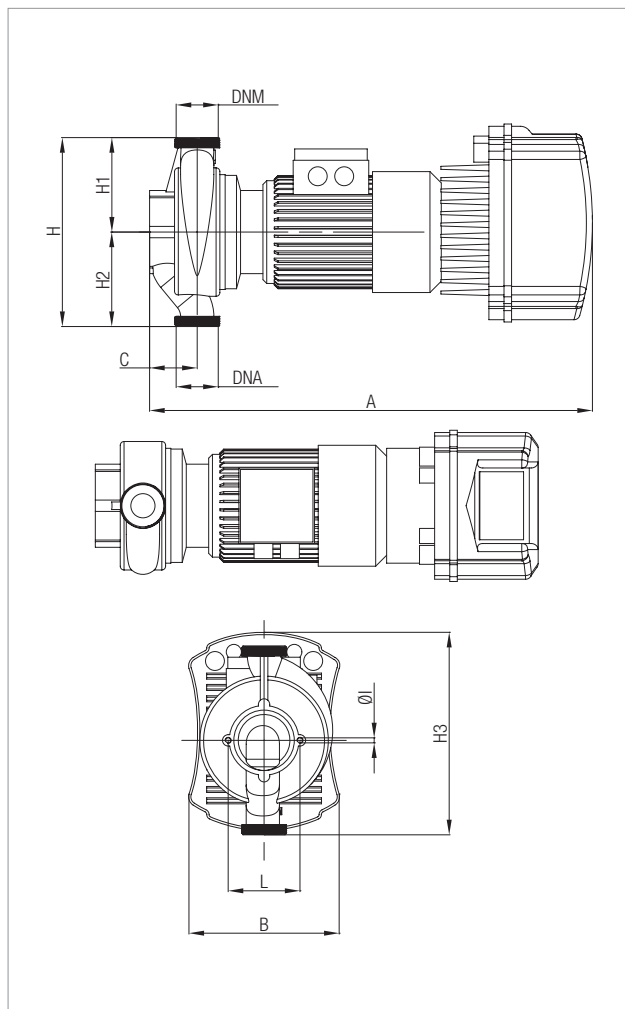
### SELECTION TABLE - ALME / ALPE

MODEL	Q (m <sup>3</sup> /h)	0	1,2	2,4	3,6	4,8	6	7,2	8,4
	(l/min)	0	20	40	60	80	100	120	140
ALME 500 M MCE11/C	H (m)	5,5	5,4	5,3	4,8	4,1	3	1,5	-
ALPE 2000 M MCE11/C		21,1	20,6	19,6	18	16	13,8	10,5	5,3



# ALME 500 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

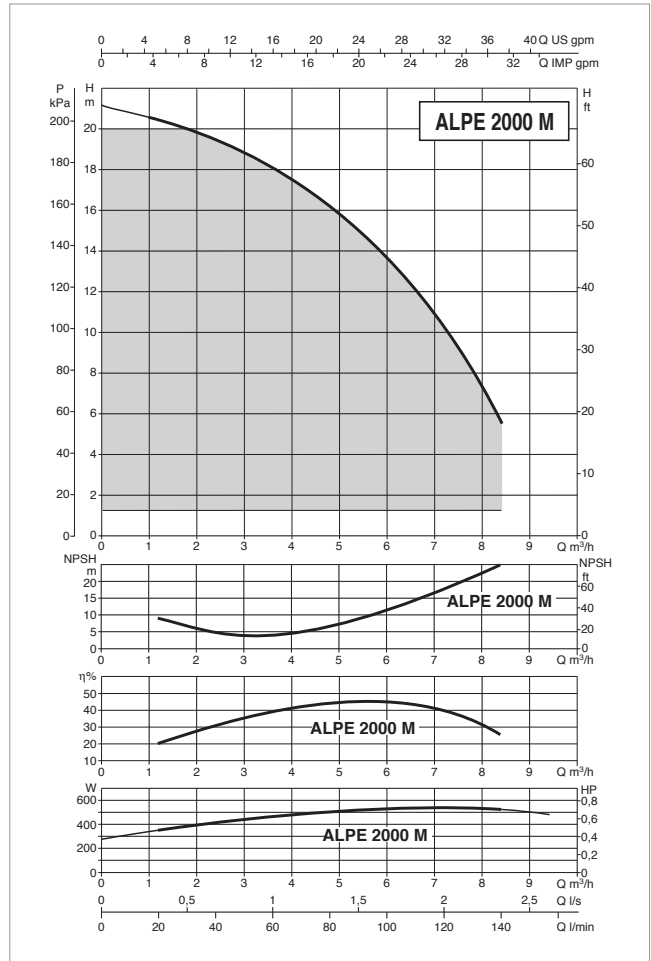
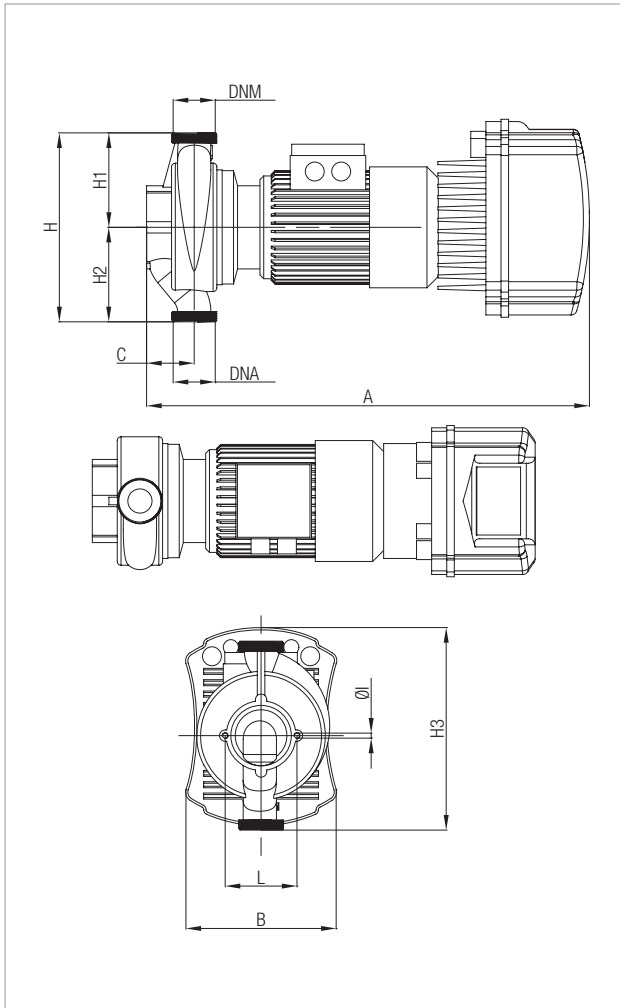
MODEL	ELECTRICAL DATA						
	POWER INPUT 50Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
ALME 500 M MCE11/C*	1 x 230 V ~	4	1425	0,2	0,25	0,33	3,2

\* Three-phase version on request

MODEL	A	B	C	L	I Ø	H	H1	H2	H3	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT Kg
												L/A	L/B	H		
ALME 500 M MCE11/C	586	200	63	95	8	250	125	125	256	2" M	2" M	600	234	275	0,039	19,5

# ALPE 2000 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA						
	POWER INPUT 50Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
ALPE 2000 M MCE11/C*	1 x 230 V ~	2	2870	0,69	0,55	0,75	6,4

\* Three-phase version on request

MODEL	A	B	C	L	Ø	H	H1	H2	H3	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT Kg
												L/A	L/B	H		
ALPE 2000 M MCE11/C	586	200	63	95	8	250	125	125	256	2" M	2" M	600	234	275	0,039	19,5



### TECHNICAL DATA

**Flow rate (range):** from 2 m<sup>3</sup>/h to 84 m<sup>3</sup>/h

**Head up to:** 23,4 m

**Type of pumped liquid:** clean, free from solid or abrasive substances, non-viscous, non-aggressive, non-crystallized and chemically neutral.

**Glycol percentage (maximum):** 50%

**Liquid temperature (range):** from -15°C to +120°C

**Maximum ambient temperature:** +40°C

**Operation pressure (maximum):** 10 bar / 1000 kPa

**Flanging or threading:** DN 40, 50, 65, 80 with PN10, PN16 (4 hole)

**Motor protection class:** IPX5

**Motor insulation class:** F

**Efficiency rating:** IE5

**Impeller material:** technopolymer

**Single phase power input:** 230 V 50 Hz

**Three phase power input:** 3x230 V 50 Hz / 3x400 V 50 Hz

**RPM:** 2950 for KLPE - 1400 for KLME

**Type of installation:** fixed in horizontal position

KLPE and DKLPE are electronic inline pumps with permanent magnetic motors for hot water circulation in residential, institutional and commercial settings and for water recirculation in medium-sized heating and air-conditioning systems, including systems incorporating solar panels. The twin-head pumps can operate in duty/standby or parallel mode. Option of remote control using the new NgDrive with integrated connectivity.

### CONSTRUCTION FEATURES OF THE PUMP

Cast iron pump casing and motor mount. Flanged inlet and outlet with threaded connections for control pressure gauges. Compatibility with PN16 mating flanges (for easier replacement of products in existing systems). Technopolymer impeller, silicon carbide mechanical seal.

Versions with the letter D are twin-head models, and also come with a swing check valve built into the outlet to stop the reverse flow of water into the unit when idle, as well as a blind flange for maintenance on one of the two motors. These versions can operate in parallel mode or with one of the two motors as a backup. The following are available on request:

threaded mating flanges DN 40, DN 50, DN 65 in PN 6

weld-neck flanges DN 40, DN 50, DN 65, DN 80 in PN 10 or PN 6 (4 holes)

weld-neck flanges DN 80 in PN 10 or PN 16 (8 holes)

### CONSTRUCTION FEATURES OF THE MOTOR

Permanent magnet motor, controlled by the new NgDrive controller. IE5 efficiency rating. AISI 316 stainless steel motor shaft, mounted on ball bearings.

### CONSTRUCTION FEATURES OF THE ELECTRONIC

The inline motor-driven pumps are controlled using NgDrive, the variable-speed control unit designed to adapt performance to match the system's actual requirements, with a resulting reduction in power demand along with energy savings. The gradual motor speed adjustment decreases the potential for component wear and protects the pump from water hammer.

The graphic display makes the unit easy to read and simplifies the process of entering operation settings; system setup is also very simple thanks to the relevant wizard.

A lot of thought has gone into the functional design to ensure installation and maintenance are straightforward: it is easy to handle; it can be mounted on a wall or on the pump in 5 different positions; and it is split into two parts so that the various components inside can be mounted and serviced separately. It delivers efficiency, energy savings, and is supremely user friendly.

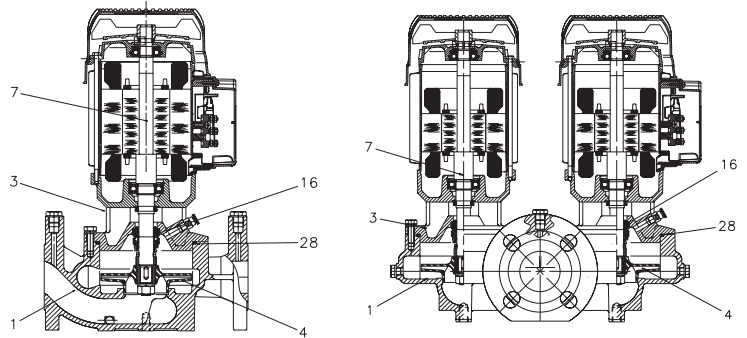
# KLPE / DKLPE

## ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

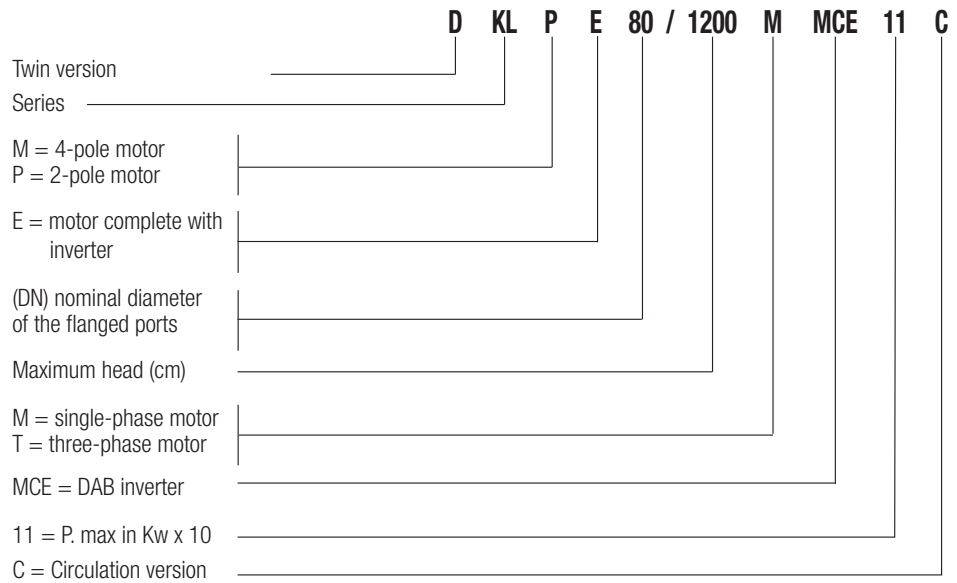
### MATERIALS

N.	PARTS*	MATERIALS
1	PUMP BODY	CAST IRON 250 UNI ISO 185
3	SUPPORT	CAST IRON 250 UNI ISO 185
4	IMPELLER	TECHNOPOLYMER
7	SHAFT WITH ROTOR	AISI 303 STAINLESS STEEL X10 CrNiS 1809 UNI 6900/71
16	MECHANICAL SEAL	CARBON / CERAMIC
28	OR RING	EPDM RUBBER

\* In contact with the liquid

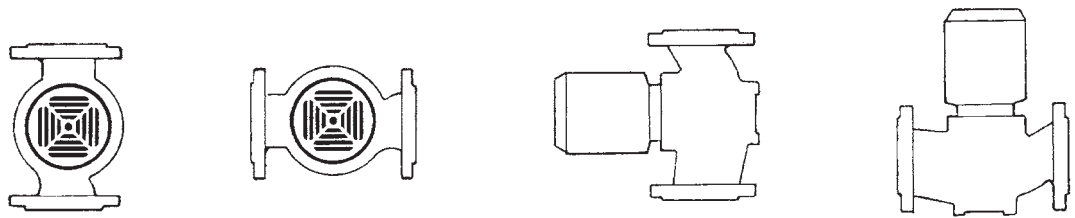


### - Legend: (example)

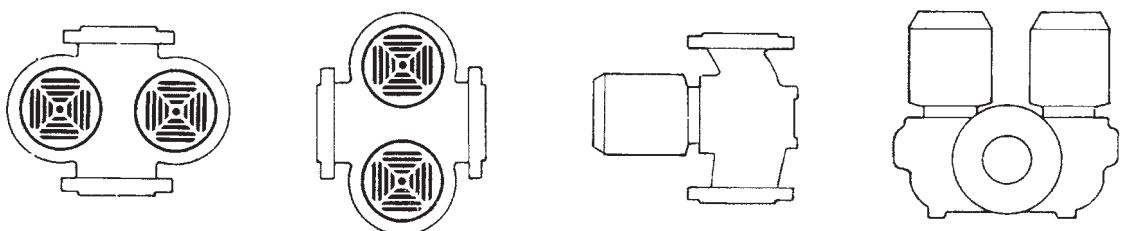


**Installation: horizontal or vertical position, provided that the motor is always above the pump.**

#### KLPE



#### DKLPE



# CONSTRUCTION FEATURES ELECTRICAL SECTION

NGDRIVE

The technological product of over 40 years' experience in the water handling sector. NgDrive is not just a variable frequency drive, it is the hardware component of a fully-fledged smart system, conceived to cater to the needs of its users, not least in its design.

VERSATILITY and EASE of use make NgDrive the most comprehensive controller available in the market. A new generation of variable frequency drives, designed for the control and protection of circulation and pressure booster pumps, adjusting them to suit the system's actual demands, thus resulting in both occupant comfort and real energy savings.

Drawing on cutting-edge TECHNOLOGIES and the DAB group's lengthy experience, NgDrive features a meticulously engineered design that is not just design for design's sake; instead, it was conceived specifically to cater to the needs of its users. Moreover, it is split into two parts that can be separated so that the components inside can even be fitted at different times and serviced without disconnecting any wires.

With the option of being fitted on the actual pump or wall mounted, NgDrive gives you the tool you need to get the most out of the DAB range of pumps and use them in the most efficient way. NgDrive has been designed and built to offer the best user experience: easy to install, set up and monitor.

- 2.8" TFT colour display
- A single software for different applications (circulation and pressure boosting)
- Keypad with intuitive commands
- Setup and getting started wizards
- Software updates via app
- Integrated connectivity (Wi-fi, Bluetooth, Wireless, Modbus) for remote control

NgDrive introduces new standards in DAB technology: cooling via built-in fan with speed control based on temperature, and architecture with four microprocessors:

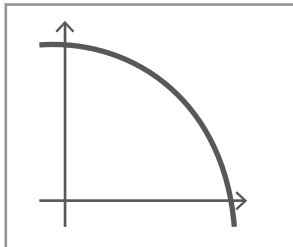
- Wireless communication
- Pump functions managed via display
- Motor control
- Input and output signals

Between two and a maximum of six variable frequency drives can be connected wirelessly.

## OPERATING MODES

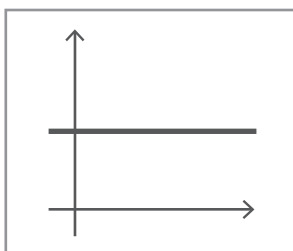
NgDrive can be used to control pumps both for pressure boosting systems and circulation systems. Constant-pressure control is the method used for pressure boosting applications, while for circulation, the control options are as follows:

- Constant speed
- Constant differential temperature
- Constant temperature
- Proportional differential pressure
- Constant differential pressure



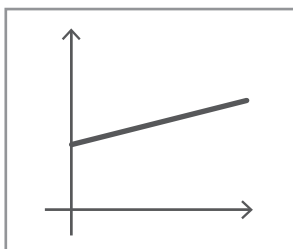
### Constant speed

The speed of rotation is kept at a constant rpm. This speed can be set in a range from a minimum value to the circulation pump's nominal frequency. This mode can be set via the control panel.



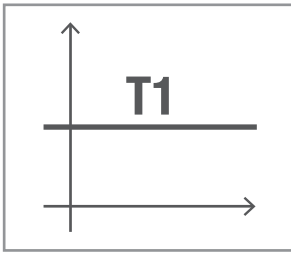
### Constant differential pressure

The maximum head is constant, regardless of the water demand. This mode can be set via the control panel, where you can specify the pressure setpoint and, where applicable, the liquid temperature dependence (in this case, you will need to connect a T1 and T2 sensor).



### Proportional differential pressure

In this control mode, the differential pressure is reduced or increased as water demand drops or rises. This mode can be set via the control panel, where you can specify the pressure setpoint and, where applicable, the liquid temperature dependence (in this case, you will need to connect a T1 and T2 sensor).

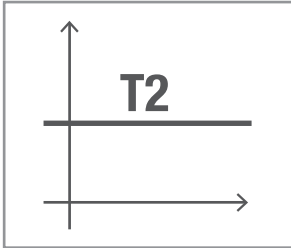


### Constant temperature

With this function, the circulation pump increases or decreases flow rate to keep constant the temperature measured by the NTC sensor connected.

You can set 2 operating modes:

- T1 increase mode → if the desired temperature ( $T_s$ ) is greater than the temperature measured ( $T_1$ ), the circulation pump increases flow rate until the temperature reaches  $T_s$ .
- T1 decrease mode → if the desired temperature ( $T_s$ ) is greater than the temperature measured ( $T_1$ ), the circulation pump decreases flow rate until the temperature reaches  $T_s$

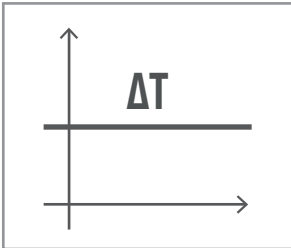


### Constant temperature

With this function, the circulation pump increases or decreases flow rate to keep constant the temperature measured by the NTC sensor connected.

You can set 2 operating modes:

- T2 increase mode → if the desired temperature ( $T_s$ ) is lower than the temperature measured ( $T_1$ ), the circulation pump increases flow rate until the temperature reaches  $T_s$ .
- T1 decrease mode → if the desired temperature ( $T_s$ ) is greater than the temperature measured ( $T_1$ ), the circulation pump decreases flow rate until the temperature reaches  $T_s$ .



### Constant temperature difference

With this function, the circulation pump increases or decreases flow rate to keep constant the T1-T2 temperature difference as an absolute value. This mode can be set via the control panel, where you can specify the temperature setpoint.

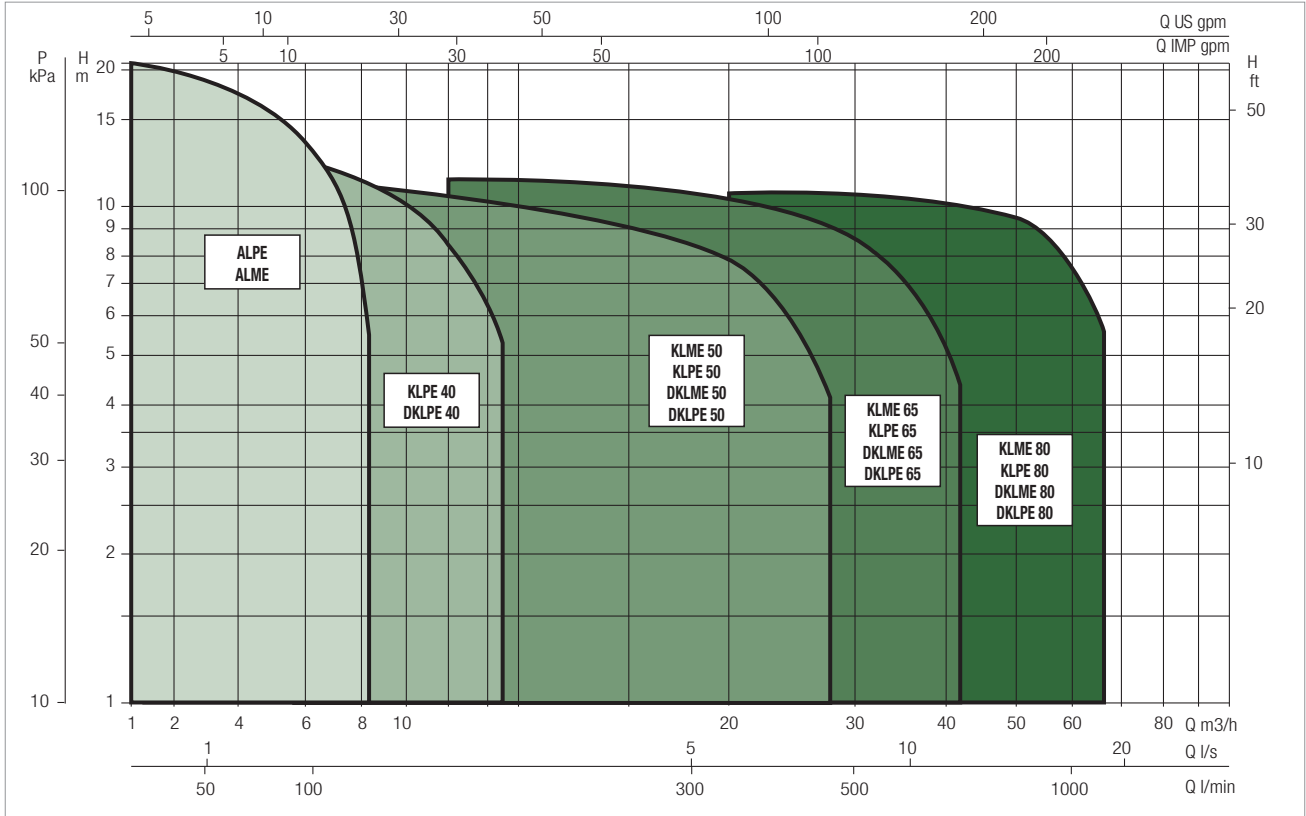
# ELECTRIC IN-LINE PUMPS

## ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

### PERFORMANCE RANGE

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

### GRAPHIC SELECTION TABLE



MODEL	Q (m <sup>3</sup> /h)	0	5	10	15	20	25
	Q (l/min)	0	83	167	250	333	417
KLPE 40-1600 M IE5	H (m)	16,36	15,66	14,19	11,31	6,78	0,75
KLPE 40-1800 M IE5		18,59	17,70	16,06	12,87	7,85	1,29

MODEL	Q (m <sup>3</sup> /h)	0	5	10	15	20	25
	Q (l/min)	0	83	167	250	333	417
DKLPE 40-1600 M IE5	H (m)	16,19	15,32	13,51	10,24	5,05	-
DKLPE 40-1800 M IE5		18,64	17,53	15,48	11,75	6,06	-

MODEL	Q (m <sup>3</sup> /h)	0	5	10	15	20	25	30	35	40	50
	Q (l/min)	0	83	167	250	333	417	500	583	667	833
KLPE 50-1200 M IE5	H (m)	12,3	12,3	11,9	11,1	9,7	7,7	5,3	2,4	-	-
KLPE 50-1600 M IE5		16,3	16,5	16,1	15,3	13,9	11,9	9,4	6,5	-	-
KLPE 50-2000 M IE5		23,1	23,8	23,7	22,7	21,0	18,9	16,2	13,2	9,9	2,7
KLPE 50-2000 T IE5		23,2	23,8	23,5	22,6	21,2	19,3	17,0	14,2	10,9	2,2

**KLPE / DKLPE****ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS****SELECTION TABLE - KLPE / DKLPE**

MODEL	Q (m³/h)	0	5	10	15	20	25	30	35	40	50
	Q (l/min)	0	83	167	250	333	417	500	583	667	833
DKLPE 50-1200 M IE5	H (m)	12,3	12,3	11,6	10,4	8,6	6,3	3,6	0,5	-	-
DKLPE 50-1600 M IE5		16,5	16,5	15,7	14,3	12,5	10,1	7,3	4,0	-	-
DKLPE 50-2000 M IE5		23,0	23,5	23,0	21,6	19,6	17,2	14,3	11,0	-	-
DKLPE 50-2000 T IE5		23,1	23,6	23,3	22,3	20,7	18,4	15,6	12,3	-	-

MODEL	Q (m³/h)	0	5	10	15	20	25	30	35	40
	Q (l/min)	0	83	167	250	333	417	500	583	667
KLPE 65-900 M IE5	H (m)	9,2	8,9	8,8	8,6	8,1	7,1	5,7	3,9	1,8
KLPE 65-1200 M IE5		12,1	12,0	12,1	12,0	11,5	10,5	9,1	7,1	4,7
KLPE 65-1600 M IE5		16,3	16,6	16,7	16,6	16,1	15,1	13,8	12,0	9,8
KLPE 65-1600 T IE5		16,3	16,5	16,7	16,6	16,1	15,3	14,1	12,4	10,3
KLPE 65-2000 T IE5		20,3	20,7	20,8	20,6	20,1	19,2	18,0	16,5	14,5

MODEL	Q (m³/h)	0	5	10	15	20	25	30	35	40
	Q (l/min)	0	83	167	250	333	417	500	583	667
DKLPE 65-900 M IE5	H (m)	9,5	9,3	9,0	8,6	7,7	6,3	4,5	2,4	0,3
DKLPE 65-1200 M IE5		12,3	12,4	12,4	11,9	11,0	9,6	7,6	5,2	2,4
DKLPE 65-1600 T IE5		16,7	17,1	17,1	16,7	15,8	14,6	12,8	10,6	7,9
DKLPE 65-1600 M IE5		16,6	17,0	17,0	16,6	15,7	14,4	12,6	10,3	7,5
DKLPE 65-2000 T IE5		20,6	21,3	21,3	20,7	19,6	18,1	16,3	14,1	11,4

MODEL	Q (m³/h)	0	10	20	30	40	50	60
	Q (l/min)	0	167	333	500	667	833	1000
KLPE 80-900 M IE5	H (m)	16,0	16,6	16,8	16,7	16,2	15,2	13,8
KLPE 80-900 T IE5		11,9	12,0	12,1	11,9	11,2	9,9	8,1
KLPE 80-1200 M IE5		11,8	11,9	12,0	11,8	11,1	9,8	7,9
KLPE 80-1200 T IE5		8,9	8,8	8,5	8,0	7,0	5,5	3,3
KLPE 80-1600 T IE5		8,8	8,7	8,4	8,0	7,1	5,6	3,2

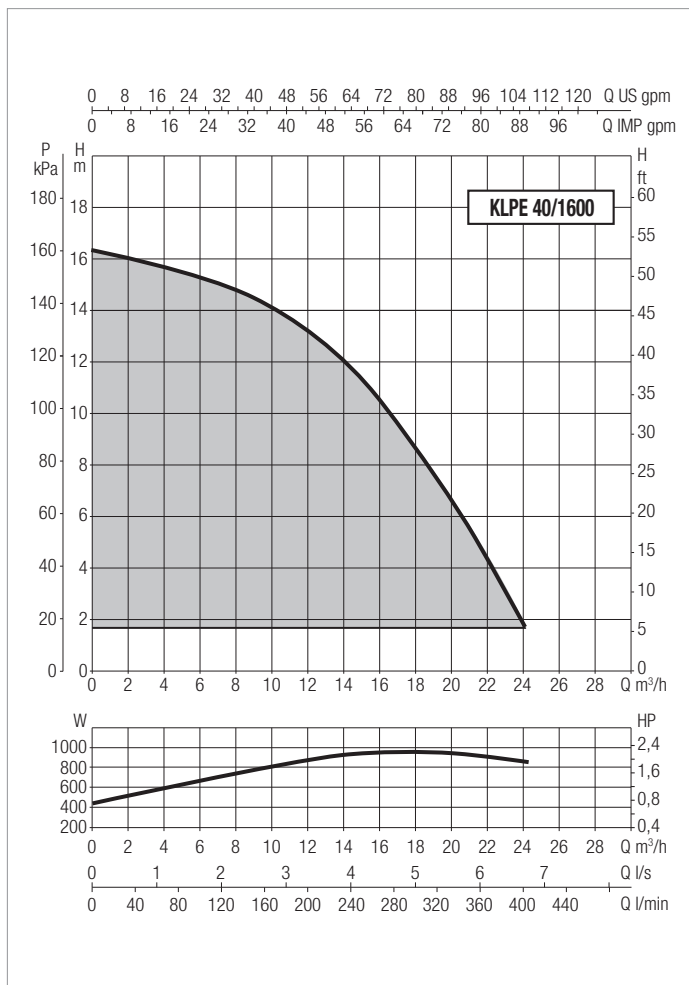
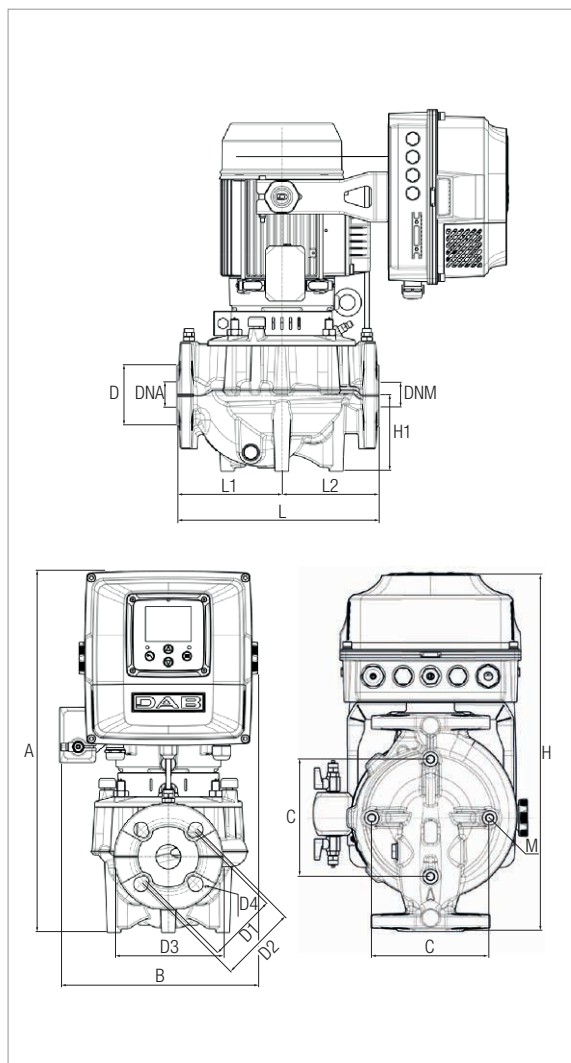
MODEL	Q (m³/h)	0	10	20	30	40	50	60
	Q (l/min)	0	167	333	500	667	833	1000
DKLPE 80-900 M IE5	H (m)	9,0	8,7	8,3	7,5	6,2	4,2	1,5
DKLPE 80-900 T IE5		9,0	8,8	8,2	7,4	6,1	4,3	1,6
DKLPE 80-1200 M IE5		12,0	11,9	11,7	11,0	9,8	8,0	5,6
DKLPE 80-1200 T IE5		11,9	11,9	11,6	10,9	9,7	7,8	5,4
DKLPE 80-1600 T IE5		16,2	16,3	16,2	15,6	14,5	12,8	10,5

MODEL	Q (m³/h)	0	2,4	3,6	4,8	6	7,2	8,4	9,6	12	14,4	16,8	18	24	30	36	48	60	72	84
	Q (l/min)	0	40	60	80	100	120	140	160	200	240	280	300	400	500	600	800	1000	1200	1400
KLPE 80-2000 T IE3	H (m)	20,8	20,9	20,9	21	21	21	21	21	21,1	21,1	21,1	21,1	21,1	21	20,6	19,3	17,4	14,8	11,7
DKLPE 80-2000 T IE3		20,3	20,3	20,3	20,3	20,3	20,3	20,3	20,3	20,3	20,2	20,2	20,1	19,9	19,4	18,8	16,8	13,9	10,4	-



# KLPE 40 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.  
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

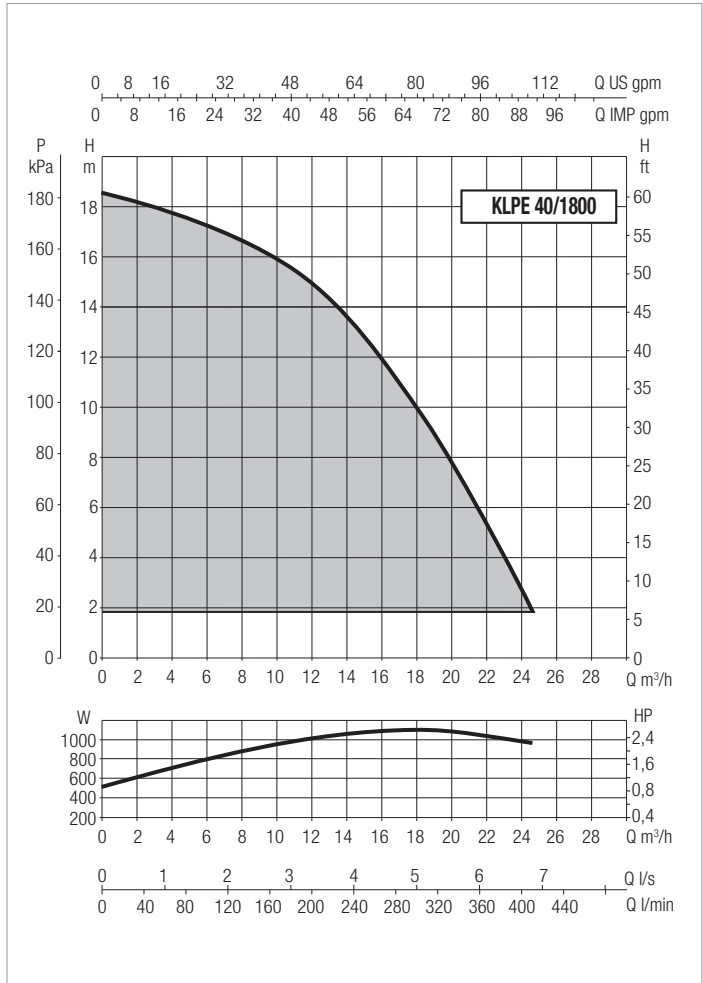
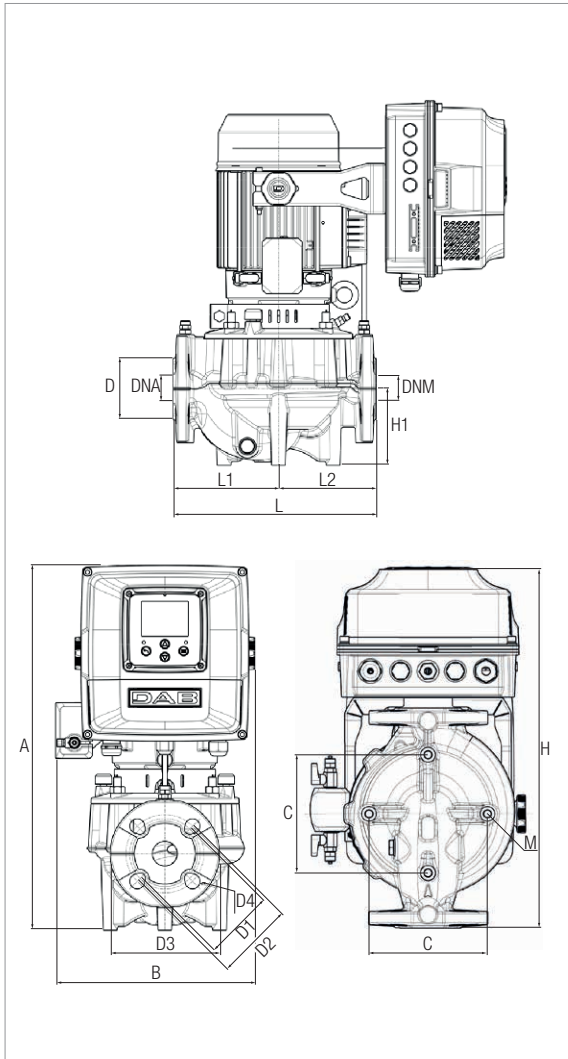
MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 Hz	P1 MAX kW	ELECTRICAL DATA			
					P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
KLPE 40-1600 IE5*	250	DN 40 PN 16	230 V	0,95	0,7	0,94	4,2	-

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	BODY	A	B	C	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																		L/A	L/B	H
																		KLPE 40-1600 IE5*	KL40250	419

# KLPE 40 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



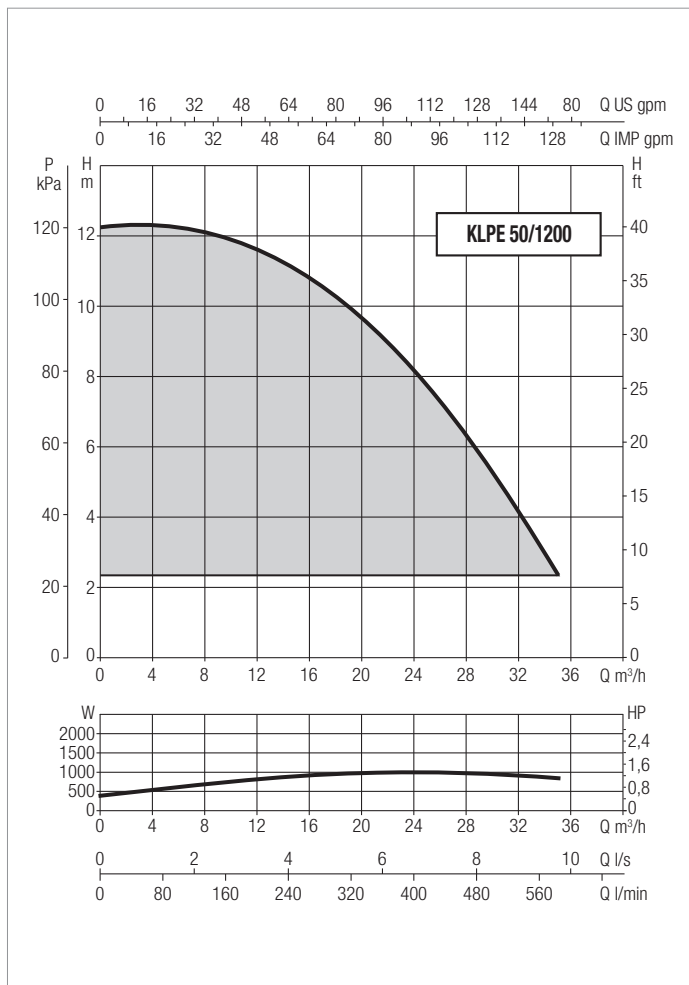
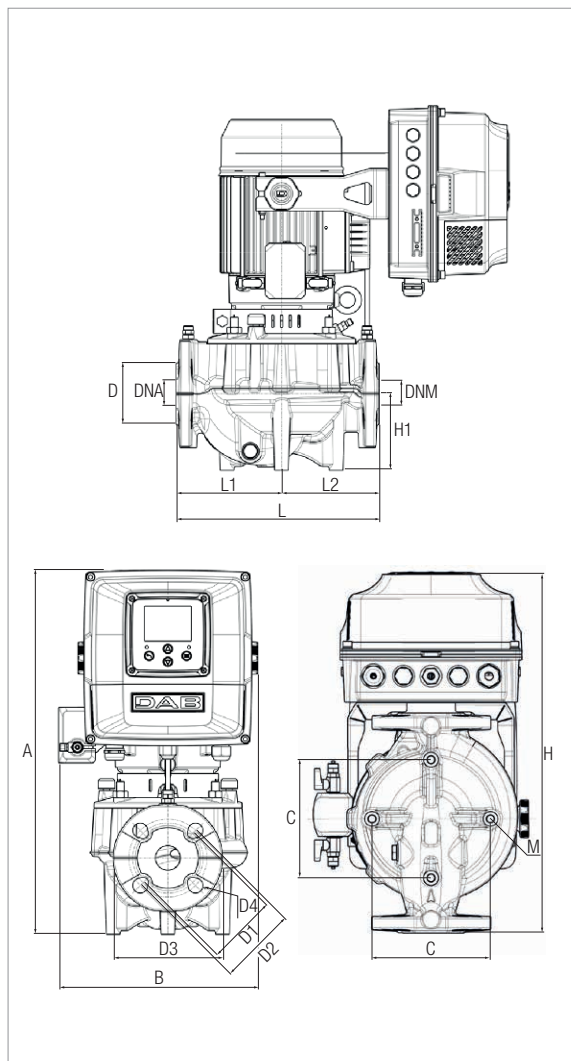
**For the MEI index refer to the hydraulic data of the individual pump.**  
 The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 Hz	P1 MAX kW	ELECTRICAL DATA			
					P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
KLPE 40-1800 IE5	250	DN 40 PN 16	230 V	1,1	0,8	1,07	4,8	-

MODEL	BODY	A	B	C	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																		L/A	L/B	H
																		KLPE 40-1800 IE5	KL40250	419

# KLPE 50 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



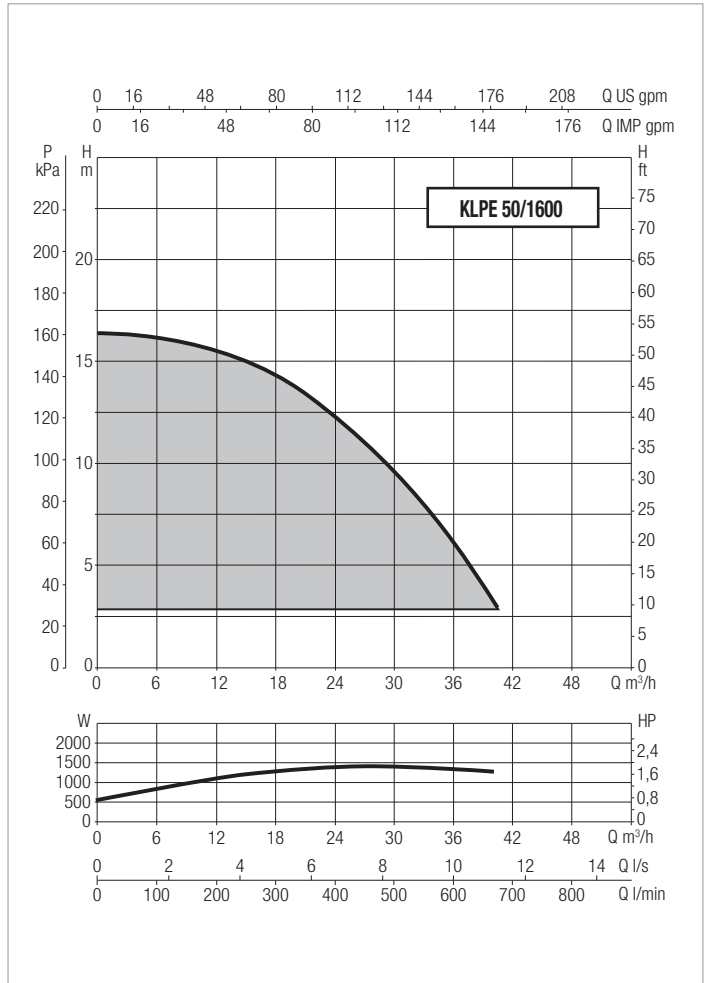
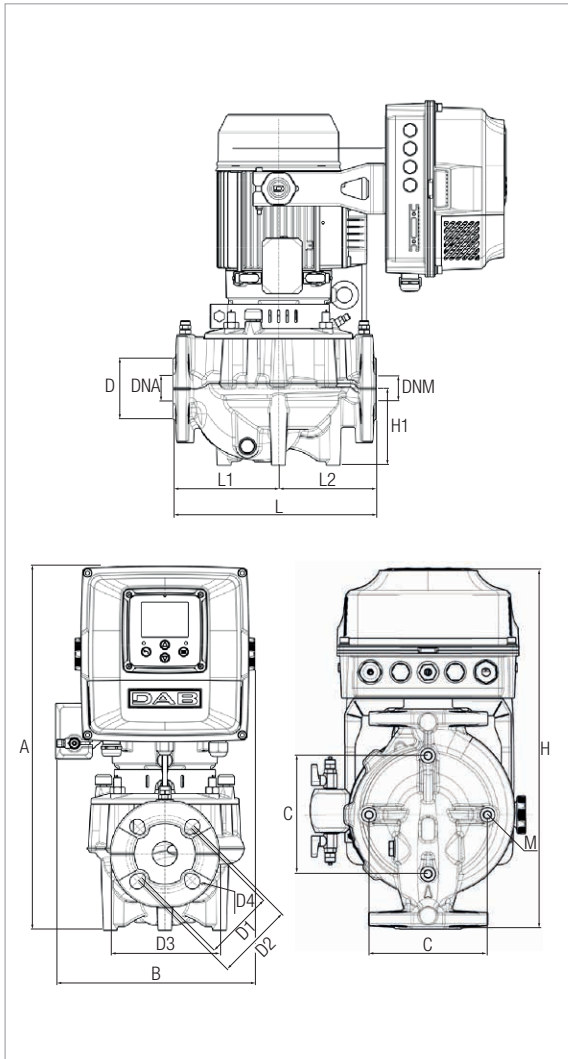
**For the MEI index refer to the hydraulic data of the individual pump.**  
 The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	ELECTRICAL DATA					
			POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
KLPE 50-1200 IE5	280	DN 50 PN 16	230 V	0,98	0,7	0,9	4,3	-

MODEL	BODY	A	B	C	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																		L/A	L/B	H
KLPE 50-1200 IE5	KL50280	438	255	100	90	110	125	165	18	431	73	280	140	140	10	50	50	600	300	637

# KLPE 50 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



**For the MEI index refer to the hydraulic data of the individual pump.**

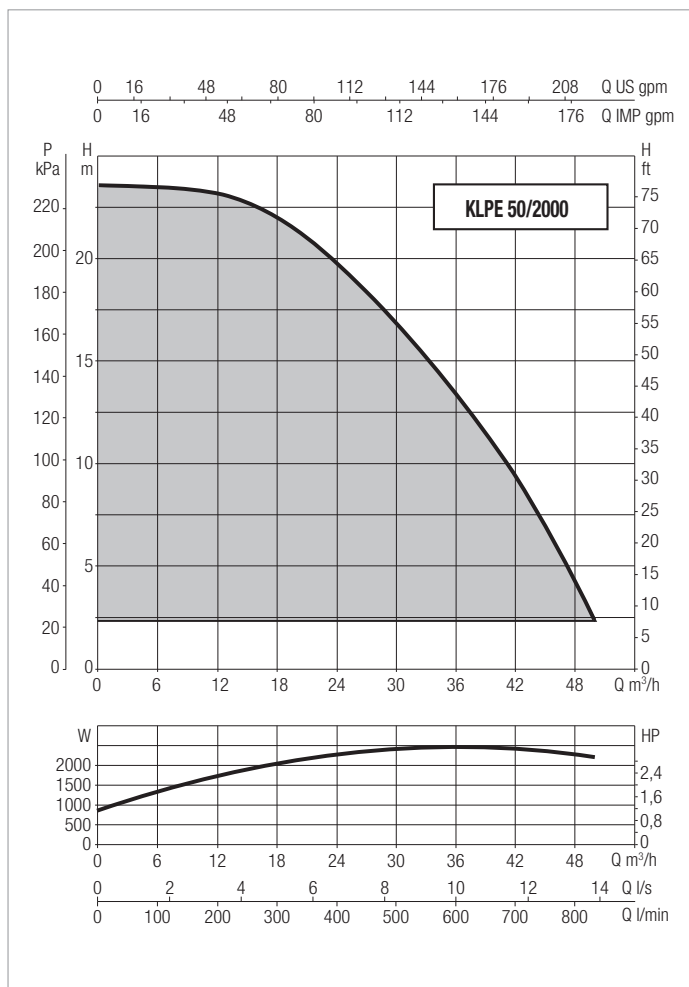
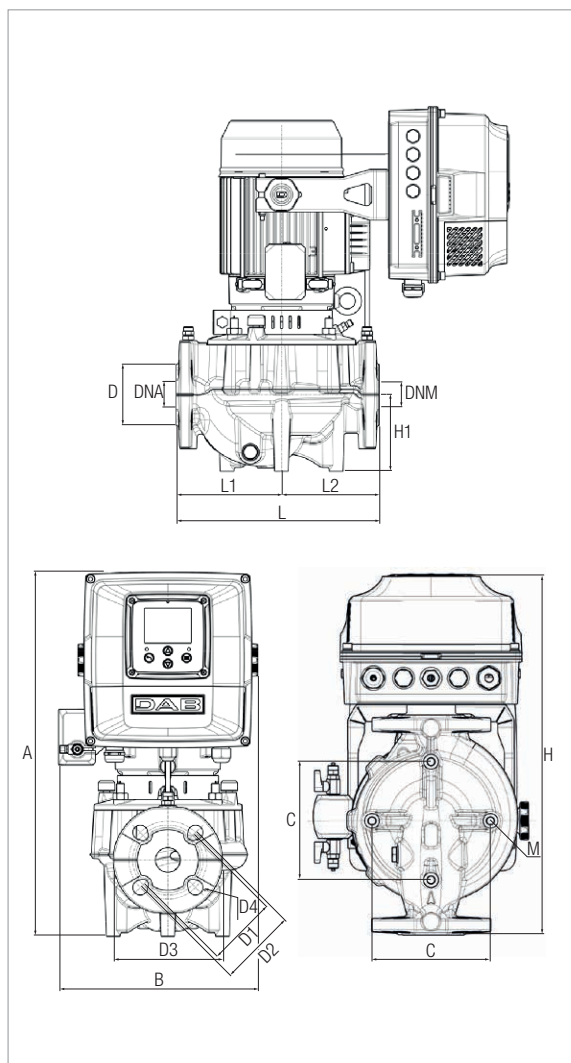
The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 Hz	P1 MAX kW	ELECTRICAL DATA			
					P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
KLPE 50-1600 IE5	280	DN 50 PN 16	230 V	1,4	1	1,3	6,2	-

MODEL	BODY	A	B	C	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																		L/A	L/B	H
KLPE 50-1600 IE5	KL50280	508	256	100	90	110	125	165	18	435	73	280	140	140	10	50	50	600	300	637

# KLPE 50 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

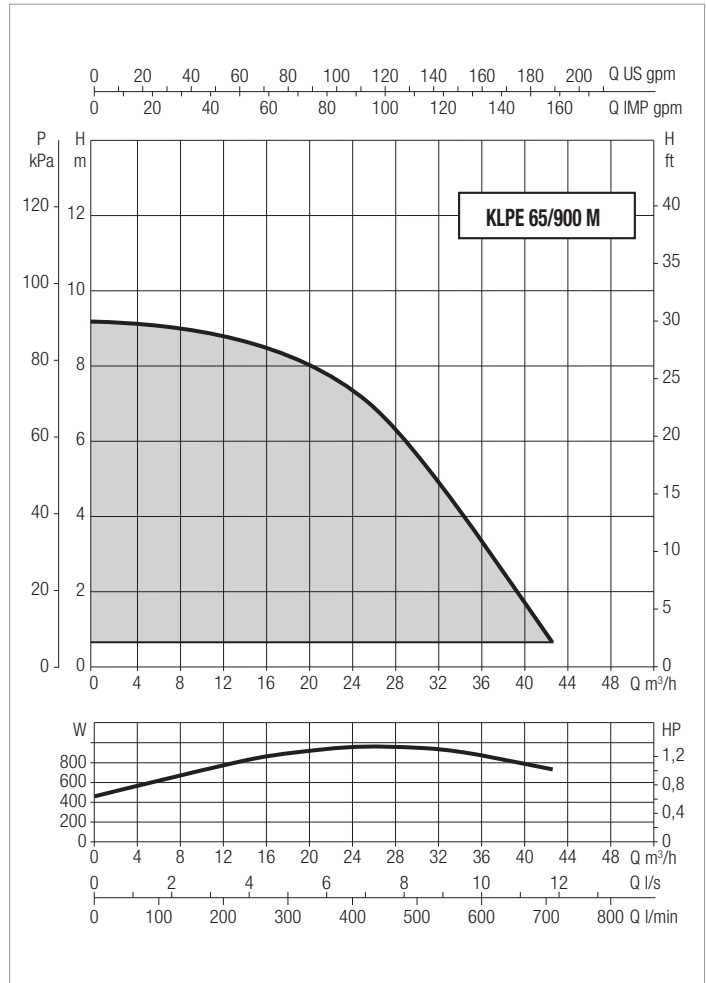
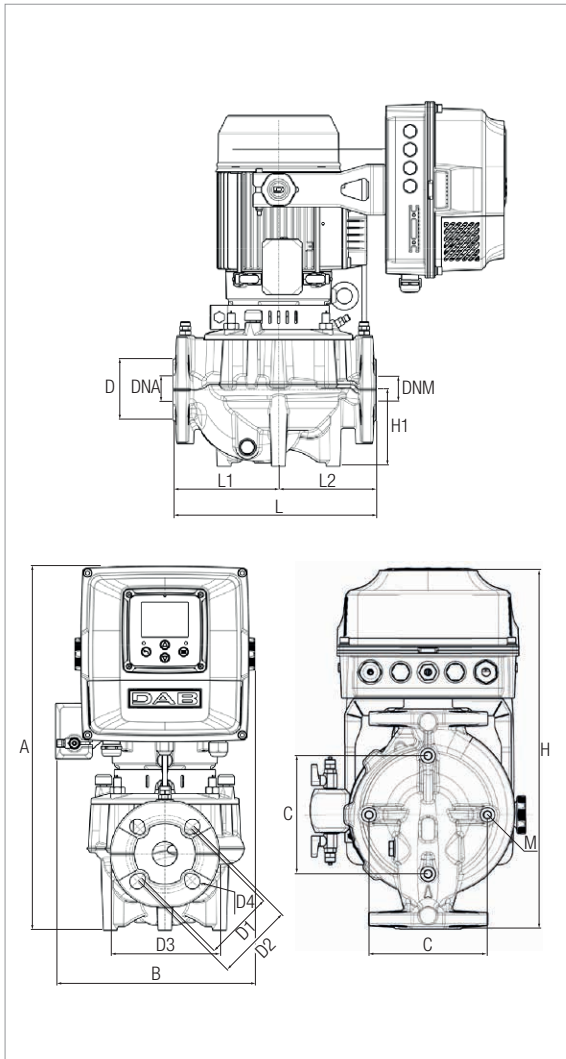
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	ELECTRICAL DATA					
			POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
KLPE 50-2000 IE5	280	DN 50 PN 16	230 V	2,3	1,8	2,4	10,04	-
KLPE 50-2000 IE5	280	DN 50 PN 16	400 V	2,4	1,8	2,4	4,07	-

MODEL	BODY	A	B	C	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																		L/A	L/B	H
KLPE 50-2000 M IE5	KL50280	508	256	100	90	110	125	165	18	435	73	280	140	140	10	50	50	600	300	637
KLPE 50-2000 T IE5	KL50280	508	256	100	90	110	125	165	18	435	73	280	140	140	10	50	50	600	300	637

# KLPE 65 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



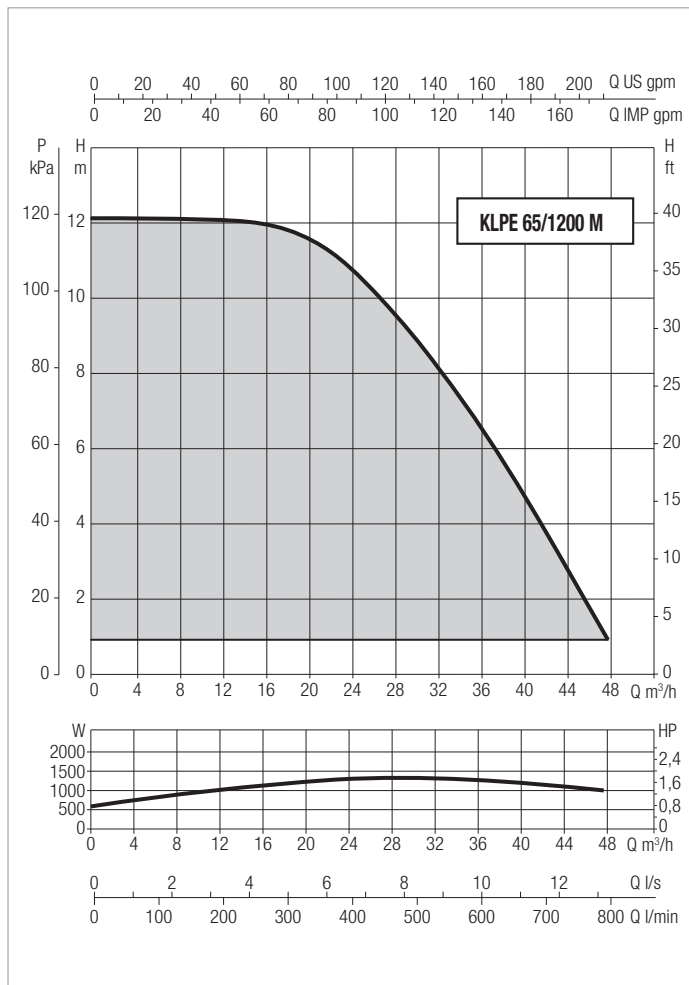
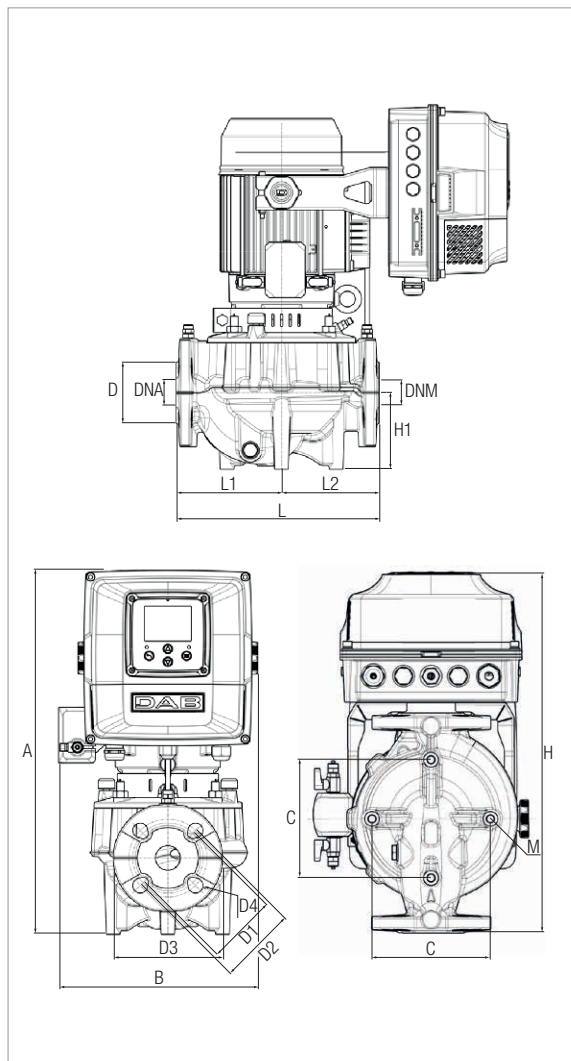
**For the MEI index refer to the hydraulic data of the individual pump.**  
 The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA							
	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
KLPE 65-900 IE5	340	DN 65 PN 16	230 V	0,95	1,1	1,48	4,2	-

MODEL	BODY	PACKING DIMENSIONS																		
		A	B	C	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	L/A	L/B	H
KLPE 65-900 IE5	KL65340	458	255	100	110	130	145	185	18	461	82	340	170	170	10	65	65	600	300	637

# KLPE 65 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

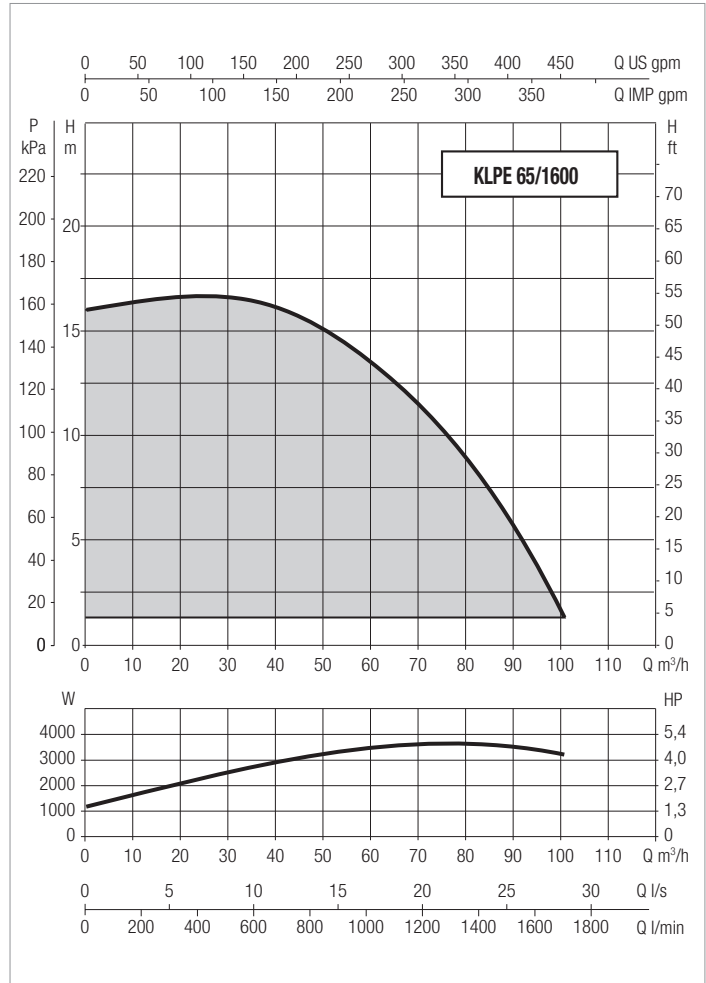
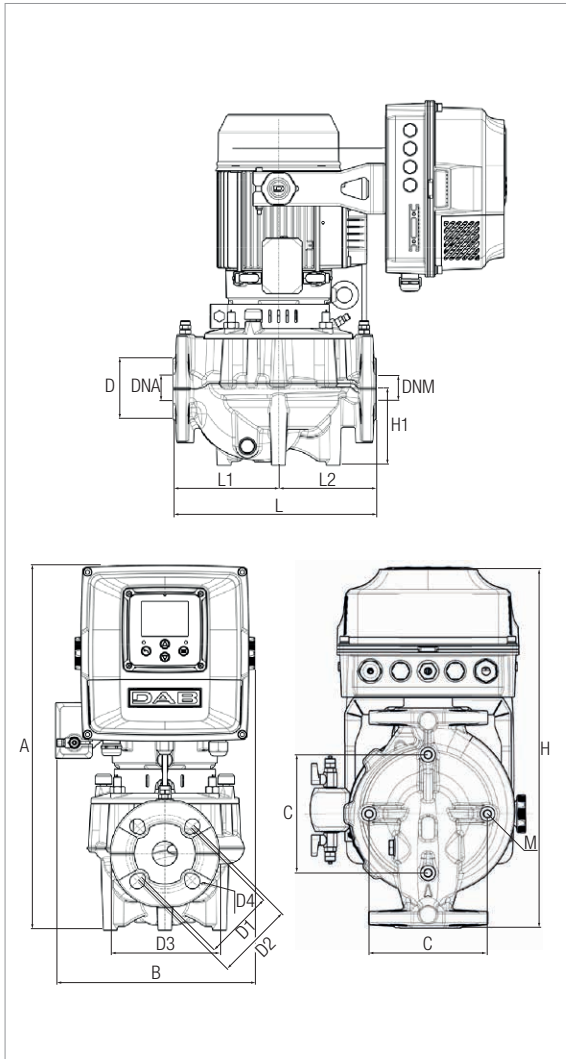
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA							
	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
KLPE 65-1200 M IE5	340	DN 65 PN 16	230 V	1,3	1,1	1,48	5,7	-

MODEL	BODY	A	B	C	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																		L/A	L/B	H
KLPE 65-1200 M IE5	KL65340	528	256	100	110	130	145	185	18	465	82	340	170	170	10	65	65	600	300	637

# KLPE 65 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



**For the MEI index refer to the hydraulic data of the individual pump.**

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

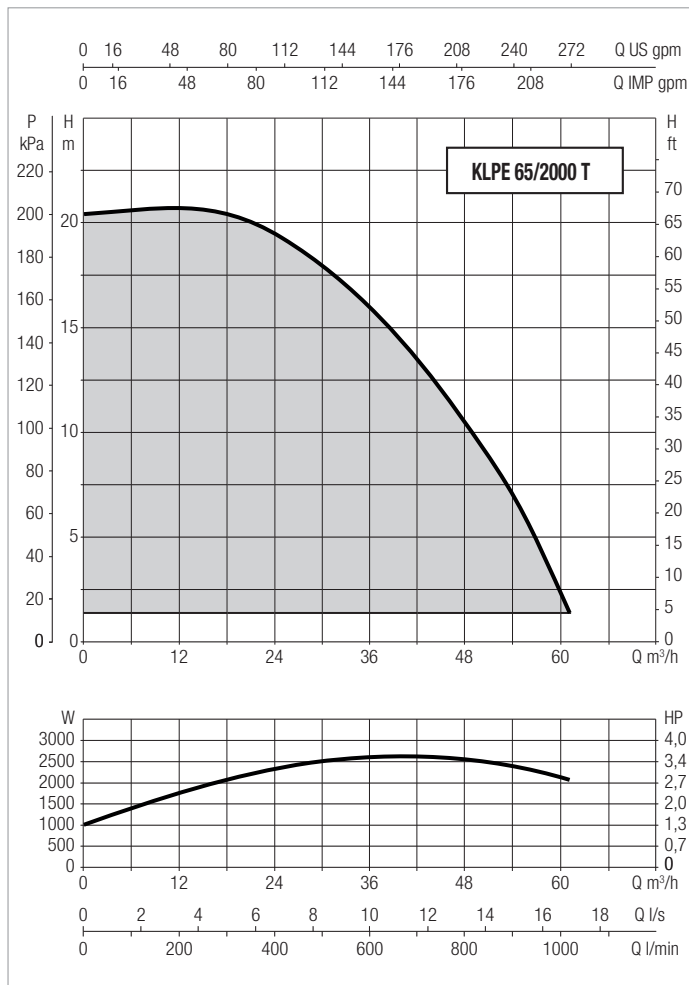
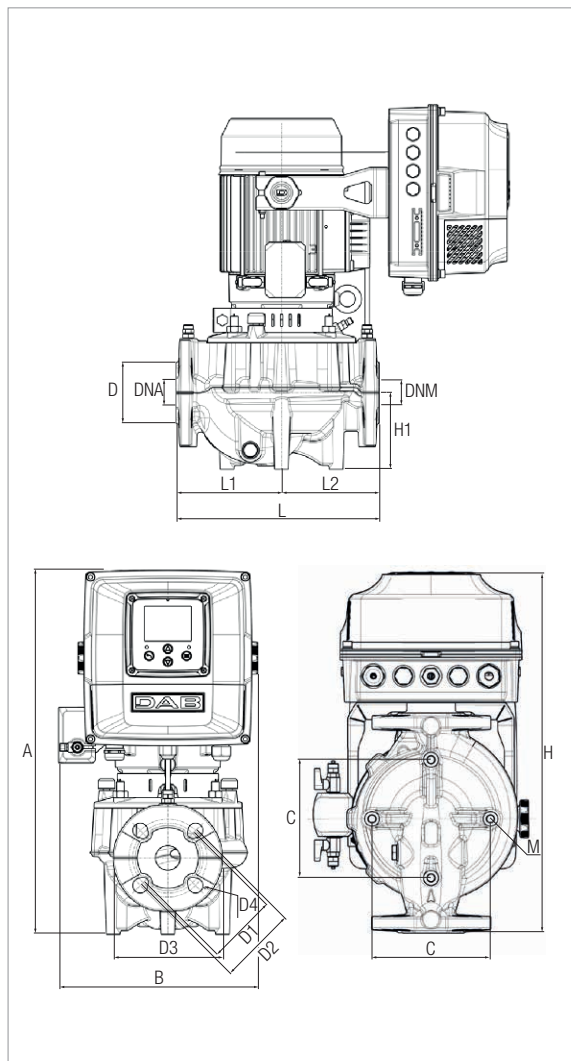
MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 Hz	P1 MAX kW	ELECTRICAL DATA			
					P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
KLPE 65-1600 IE5	340	DN 65 PN 16	400 V	1,9	2,2	2,95	-	3,4

MODEL	BODY	A	B	C	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																		L/A	L/B	H
KLPE 65-1600 M IE5	KL65340	528	256	100	110	130	145	185	18	465	82	340	170	170	10	65	65	600	300	637
KLPE 65-1600 T IE5	KL65340	528	270	100	110	130	145	185	18	465	82	340	170	170	10	65	65	600	300	637



# KLPE 65 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



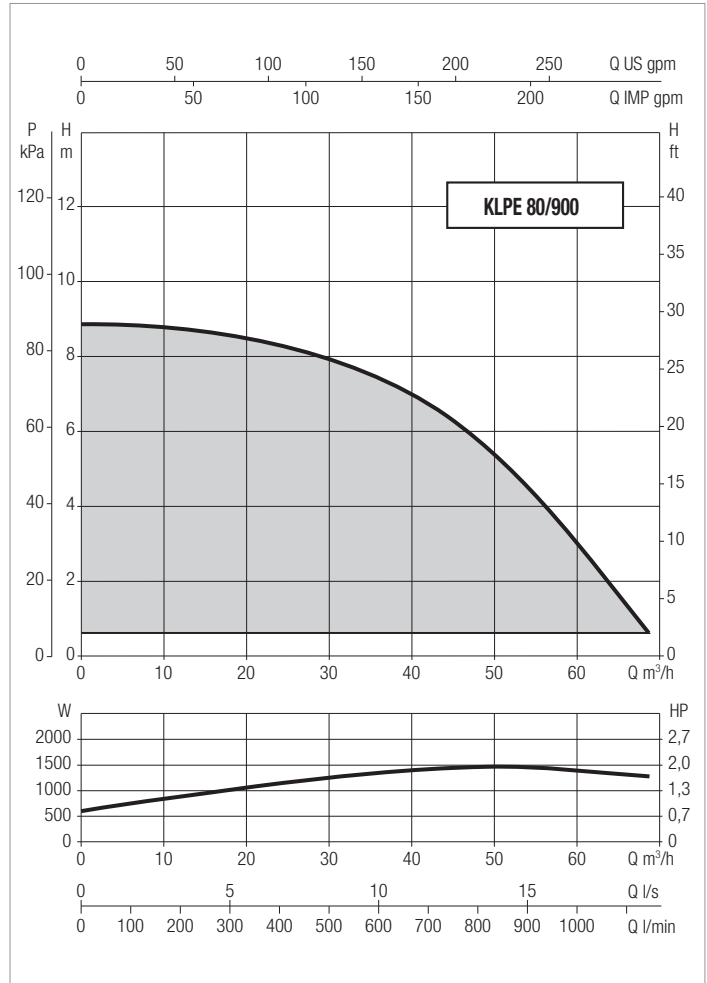
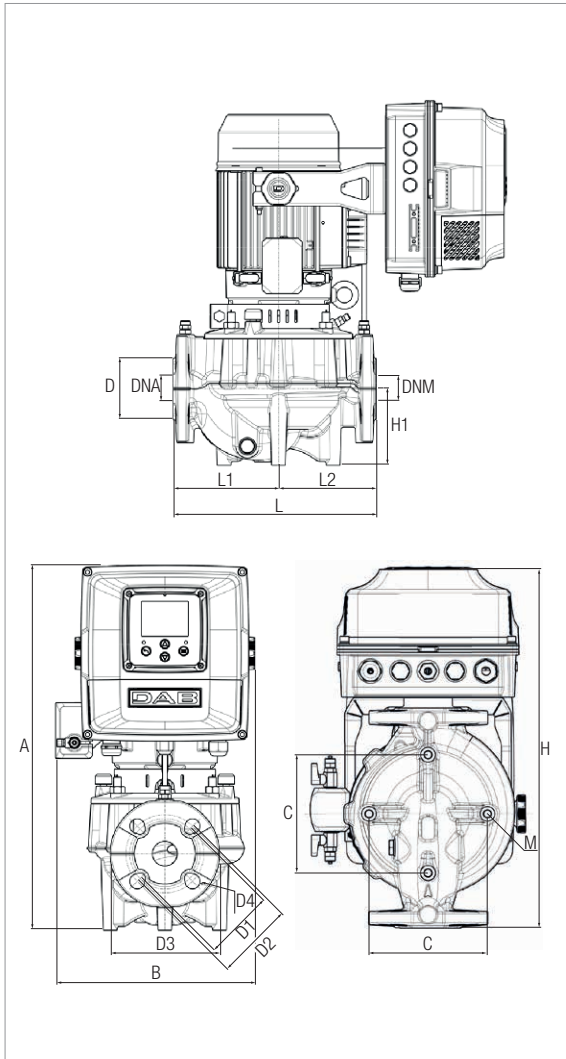
For the MEI index refer to the hydraulic data of the individual pump.  
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA							
	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
KLPE 65-2000 IE5	340	DN 65 PN 16	400 V	2,6	2	2,68	-	4,2

MODEL	BODY	A	B	C	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																		L/A	L/B	H
KLPE 65-2000 T IE5	KL65340	528	270	100	110	130	145	185	18	465	82	340	170	170	10	65	65	600	300	637

## KLPE 80 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

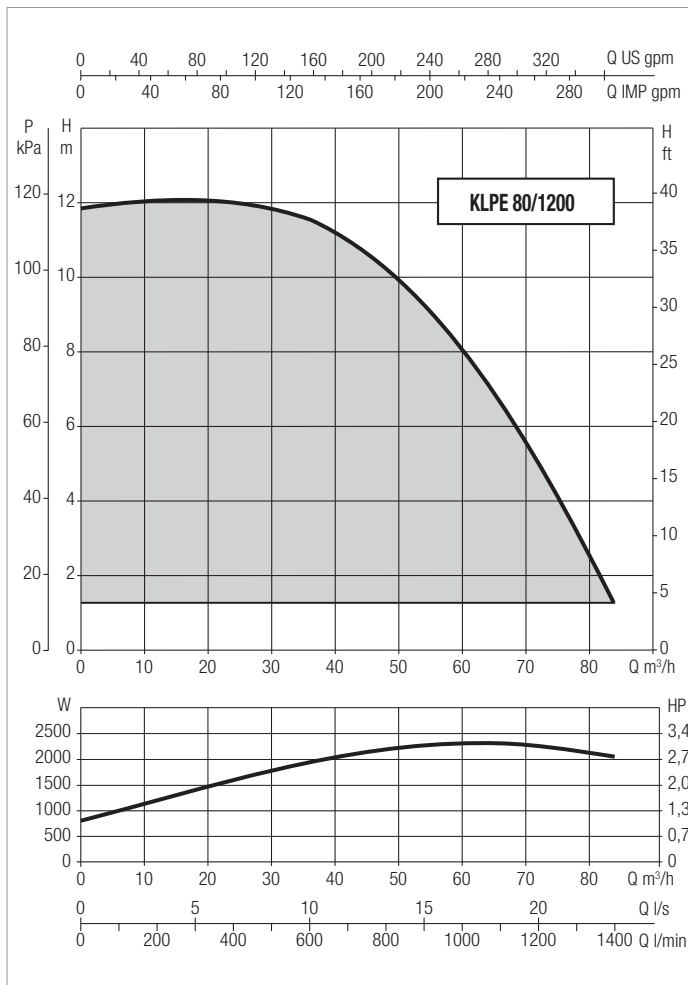
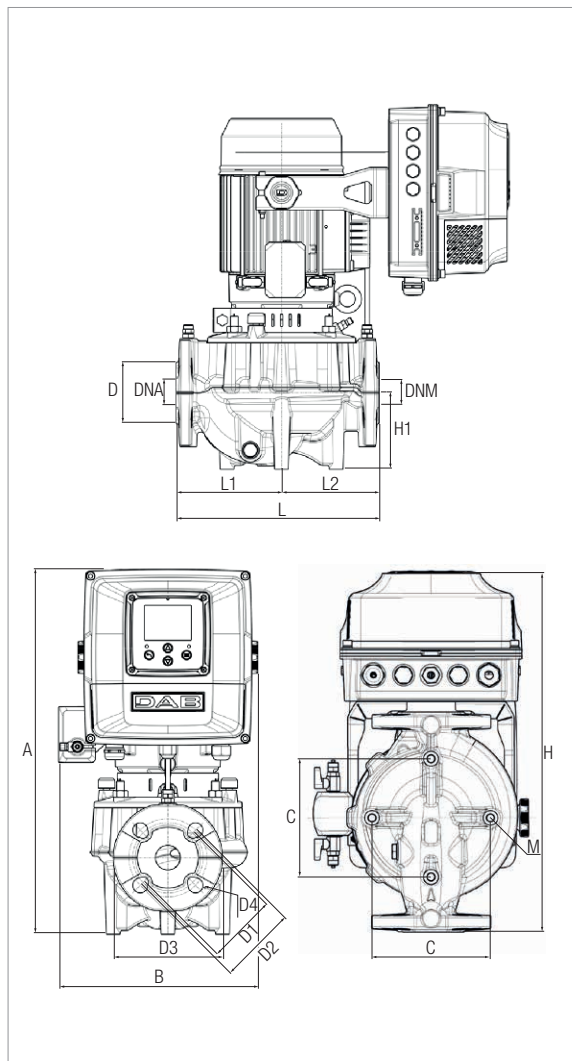
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 Hz	P1 MAX kW	ELECTRICAL DATA			
					P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
KLPE 80-900 IE5	360	DN 80 PN 16	230 V	1,4	1,8	2,41	6,4	-
KLPE 80-900 IE5	360	DN 80 PN 16	400 V	1,4	1,8	2,41	-	2,7

MODEL	BODY	A	B	C	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																		L/A	L/B	H
KLPE 80-900 M IE5	KL80360	547	256	115	128	150	160	200	18	485	97	360	190	170	10	80	80	600	300	637
KLPE 80-900 T IE5	KL80360	547	272	115	128	150	160	200	18	485	97	360	190	170	10	80	80	600	300	637

# KLPE 80 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

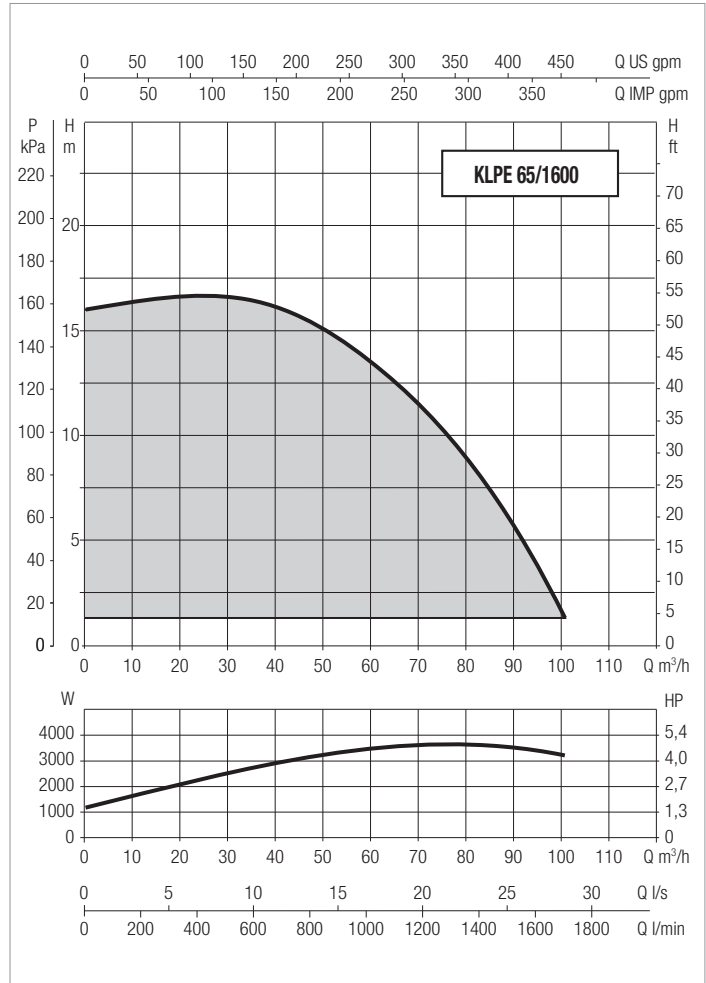
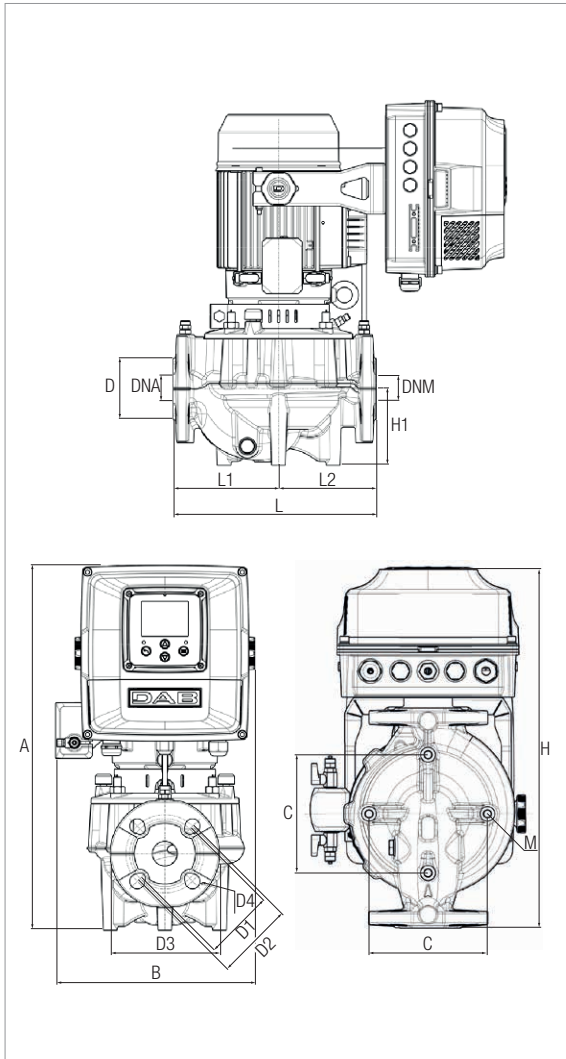
The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 Hz	P1 MAX kW	ELECTRICAL DATA			
					P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
KLPE 80-1200 IE5	360	DN 80 PN 16	230 V	2,3	1,8	2,41	10,1	-
KLPE 80-1200 IE5	360	DN 80 PN 16	400 V	2,2	1,8	2,41	-	3,8

MODEL	BODY	A	B	C	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																		L/A	L/B	H
																		KLPE 80-1200 M IE5	KL80360	547
KLPE 80-1200 T IE5	KL80360	547	272	115	128	150	160	200	18	485	97	360	190	170	10	80	80	600	300	637

# KLPE 80 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



**For the MEI index refer to the hydraulic data of the individual pump.**

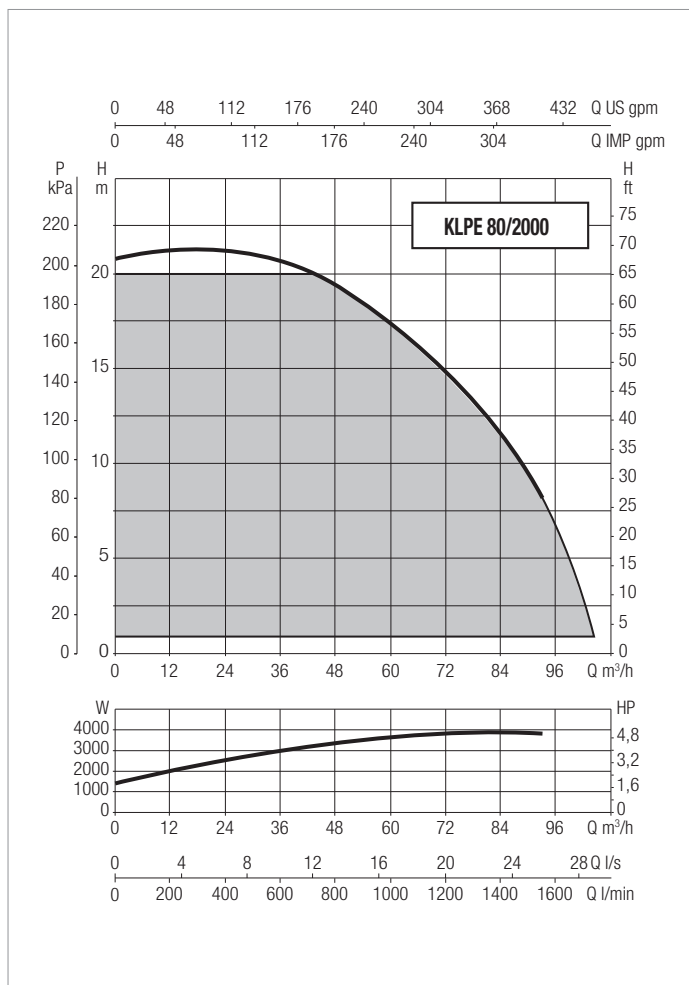
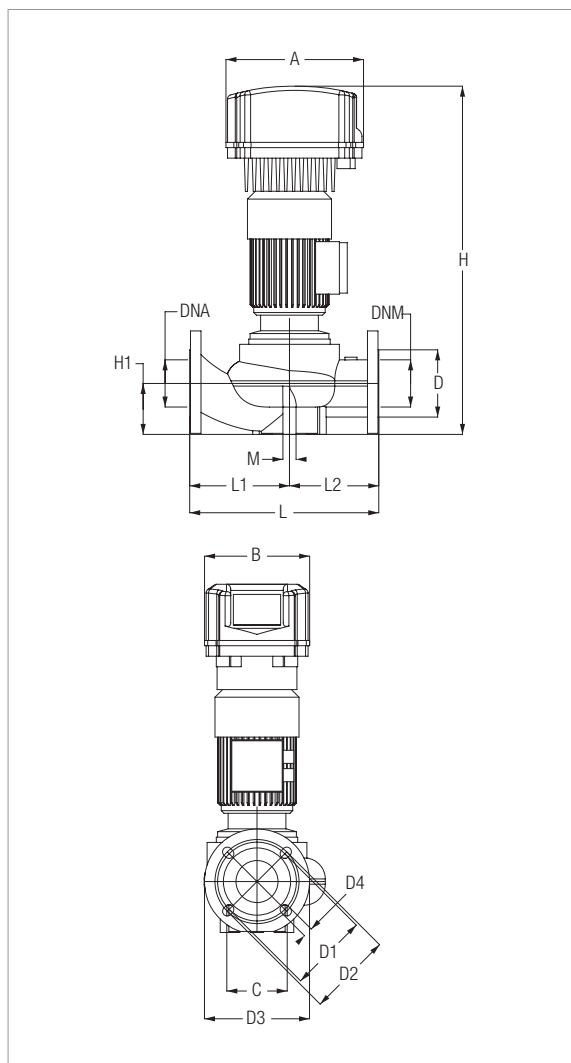
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA							
	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
KLPE 80-1600 IE5	360	DN 80 PN 16	400 V	3,6	2,5	3,35	-	5,8

MODEL	BODY	A	B	C	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																		L/A	L/B	H
KLPE 80-1600 T IE5	KL80360	547	272	115	128	150	160	200	18	485	97	360	190	170	10	80	80	600	300	637

# KLPE 80 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

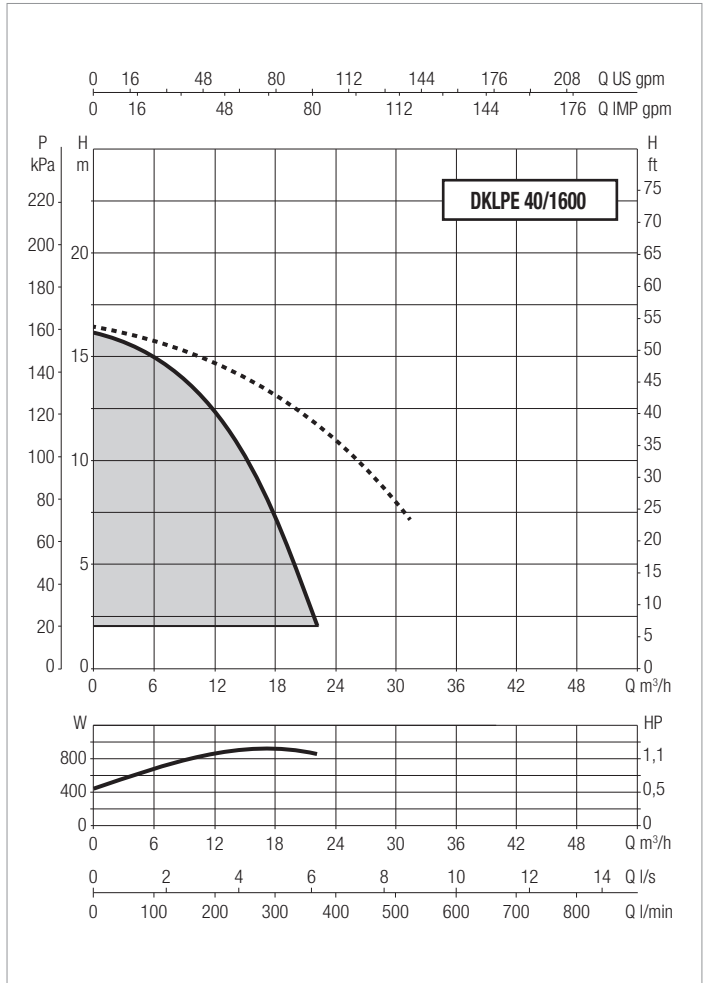
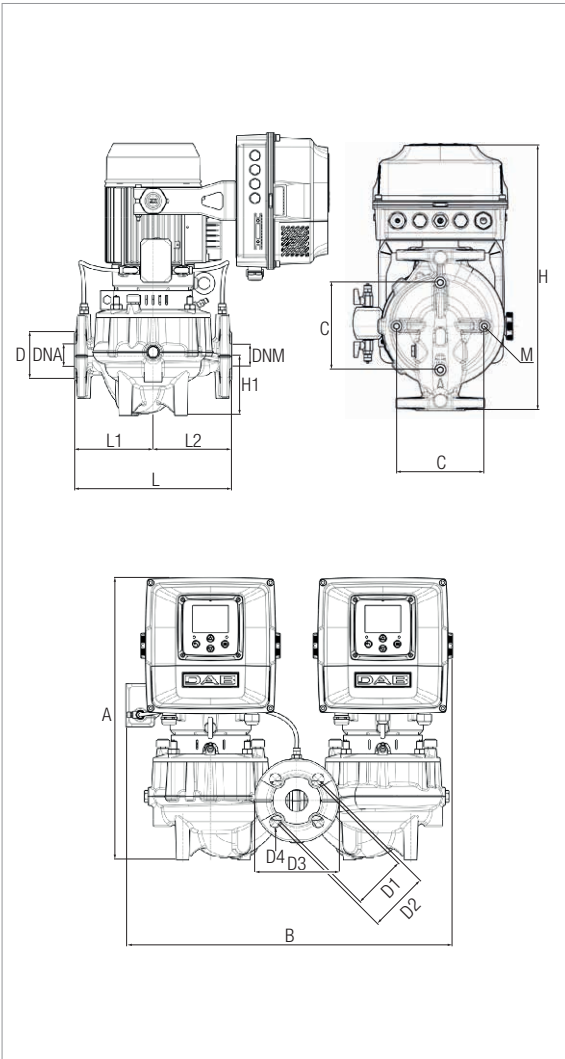
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA							
	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
KLPE 80-2000 T IE3	360	DN 80 PN 16	400 V	5	3,6	4,83	-	8,4

MODEL	A	B	B1	B2	C	D	D1	D2	D3	D4	H	H1	I	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																				L/A	L/B	H
KLPE 80-2000 T IE3	352	267	-	-	115	128	150	160	200	4 HOLES 18x23	722	97	-	360	190	170	2 HOLES M12	80	80	520	290	450

# DKLPE 40 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



**For the MEI index refer to the hydraulic data of the individual pump.**

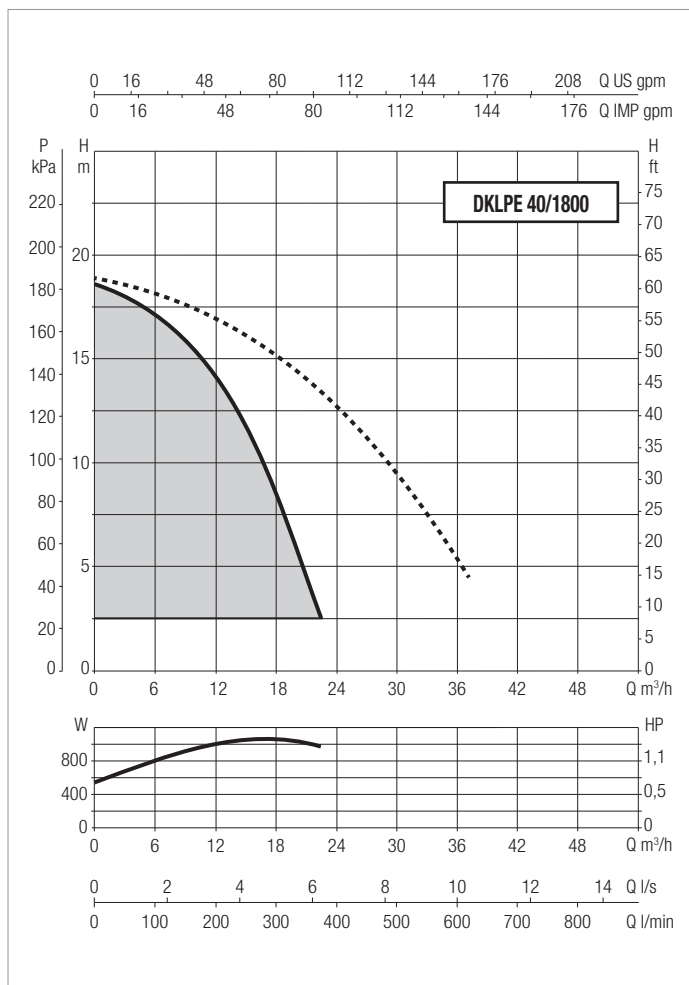
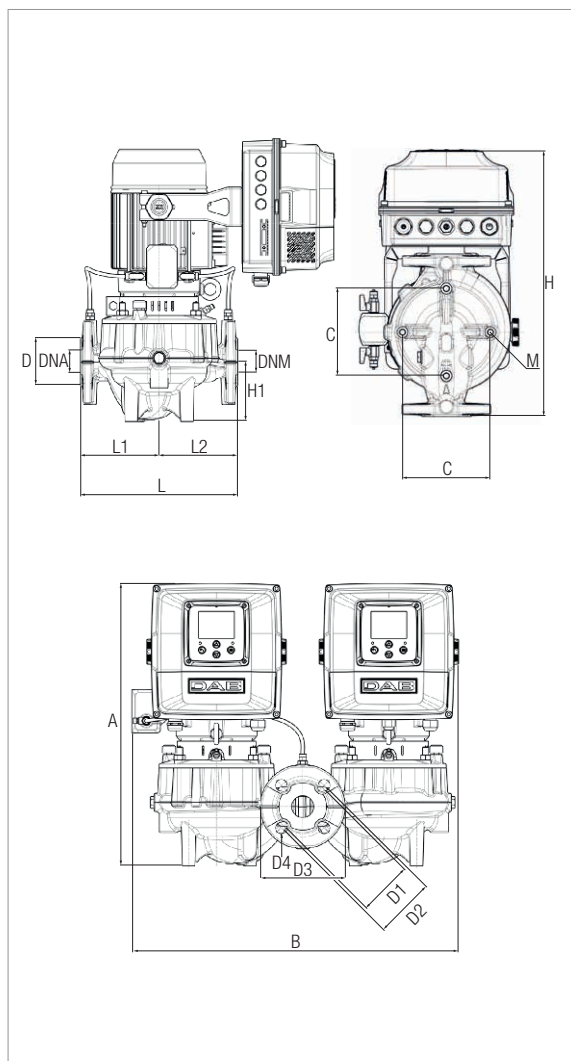
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	ELECTRICAL DATA					
			POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
DKLPE 40-1600 IE5	250	DN 40 PN 16	230 V	0,95	0,7	0,94	4,2	-

MODEL	BODY	A	B	C1	C2	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																			L/A	L/B	H
DKLPE 40-1600 IE5	KL40250	419	475	100	212	80	100	110	150	18	416	66	250	125	125	10	40	40	600	300	637

# DKLPE 40 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

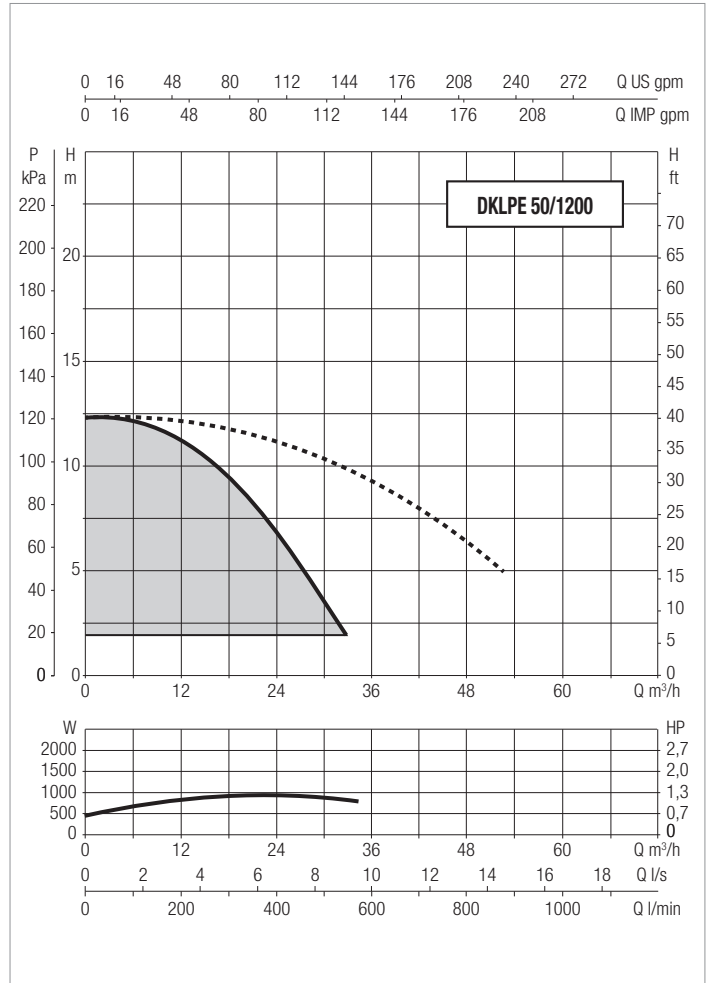
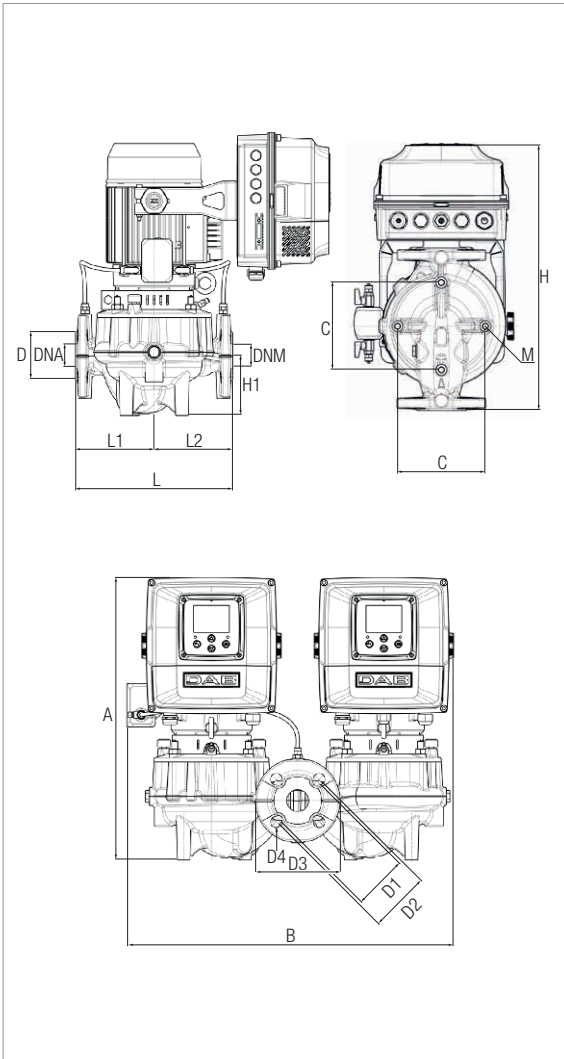
The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 Hz	P1 MAX kW	ELECTRICAL DATA			
					P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
DKLPE 40-1800 IE5	250	DN 40 PN 16	230 V	1,1	0,8	1,07	4,8	-

MODEL	BODY	A	B	C1	C2	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																			L/A	L/B	H
DKLPE 40-1800 IE5	KL40250	419	475	100	212	80	100	110	150	18	416	66	250	125	125	10	40	40	600	300	637

# DKLPE 50 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



**For the MEI index refer to the hydraulic data of the individual pump.**

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

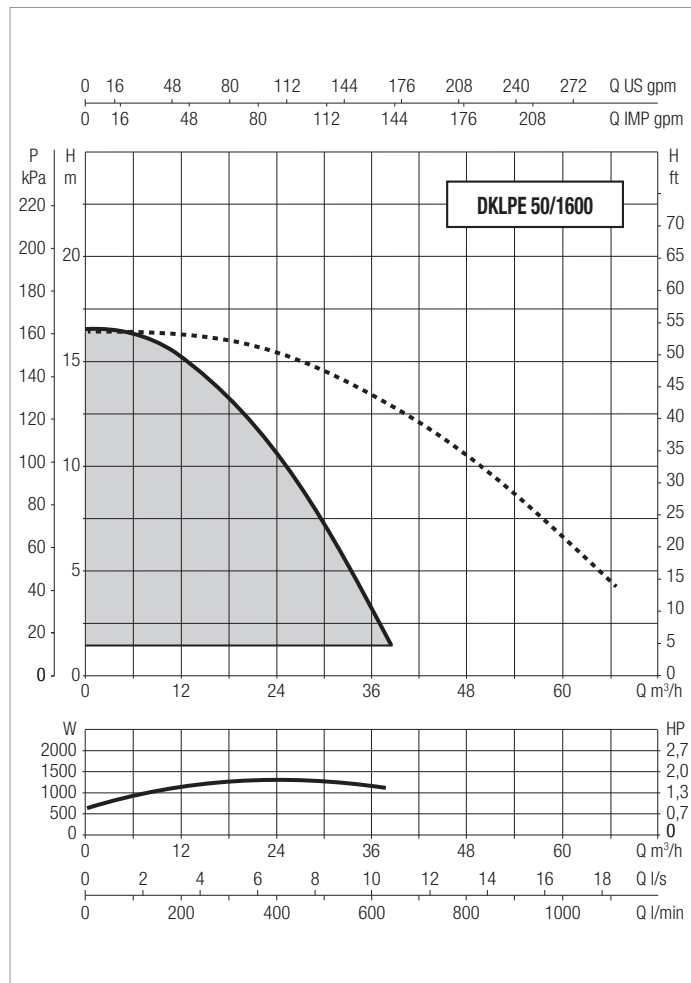
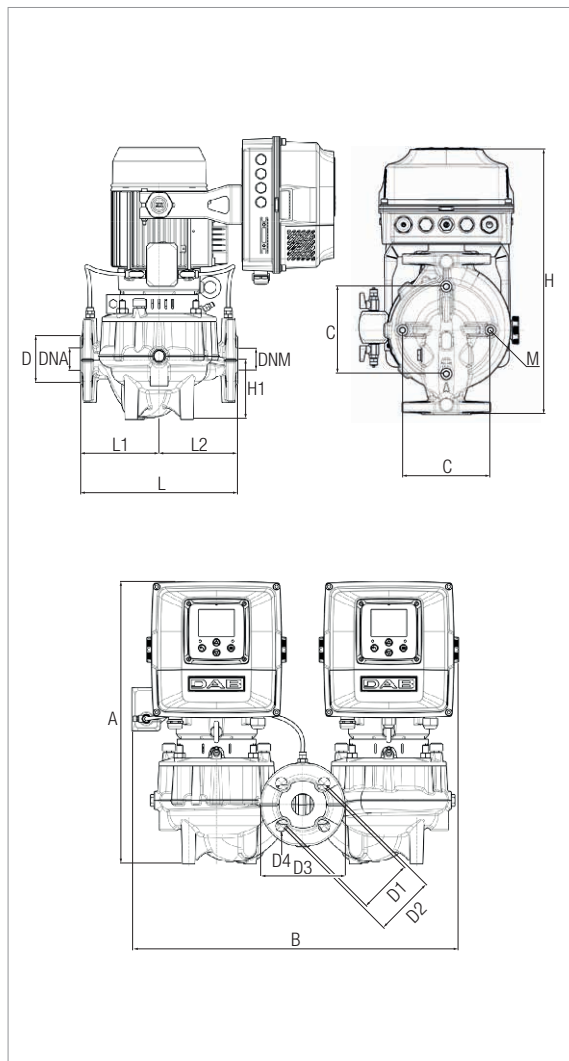
MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	ELECTRICAL DATA					
			POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
DKLPE 50-1200 IE5	280	DN 50 PN 16	230 V	0,98	0,7	0,9	4,3	-

MODEL	BODY	A	B	C1	C2	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																			L/A	L/B	H
DKLPE 50-1200 IE5	KL50280	438	555	100	392	90	110	125	165	18	431	73	280	140	140	10	50	50	600	300	637



# DKLPE 50 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



**For the MEI index refer to the hydraulic data of the individual pump.**

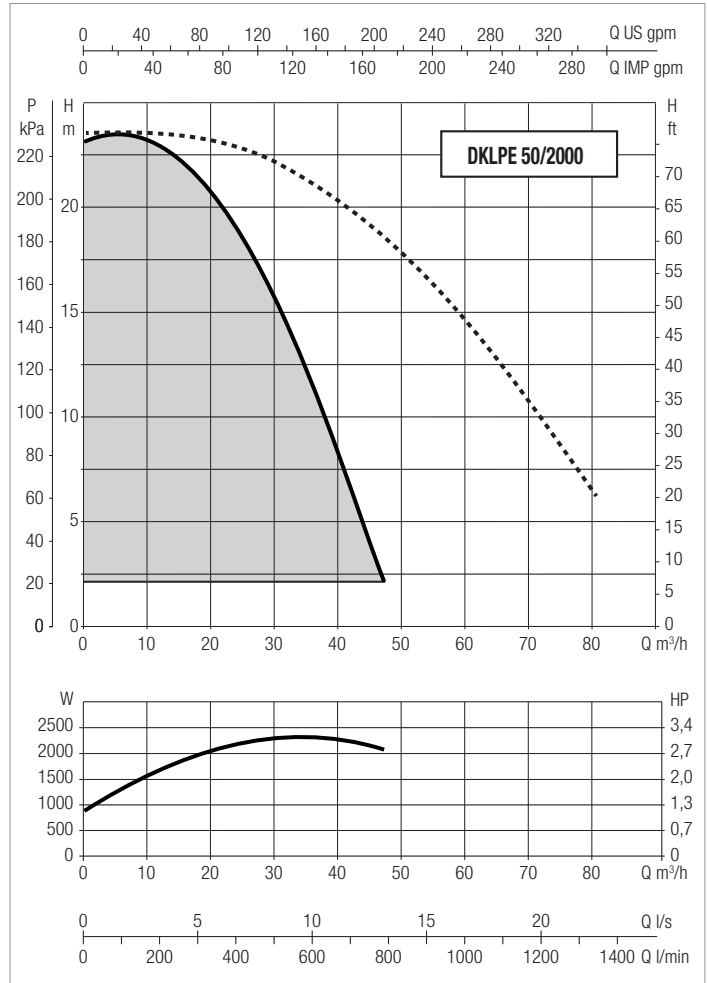
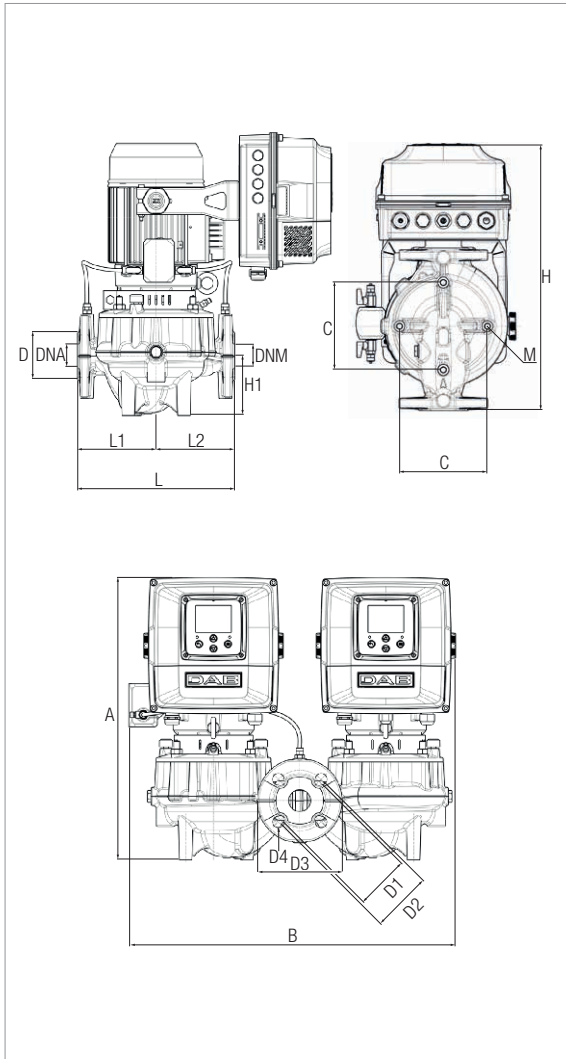
The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 Hz	P1 MAX kW	ELECTRICAL DATA			
					P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
DKLPE 50-1600 IE5	280	DN 50 PN 16	230 V	1,4	1	1,3	6,2	-

MODEL	BODY	A	B	C1	C2	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																			L/A	L/B	H
DKLPE 50-1600 IE5	KL50280	508	555	100	392	90	110	125	165	18	435	73	280	140	140	10	50	50	600	300	637

# DKLPE 50 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



**For the MEI index refer to the hydraulic data of the individual pump.**

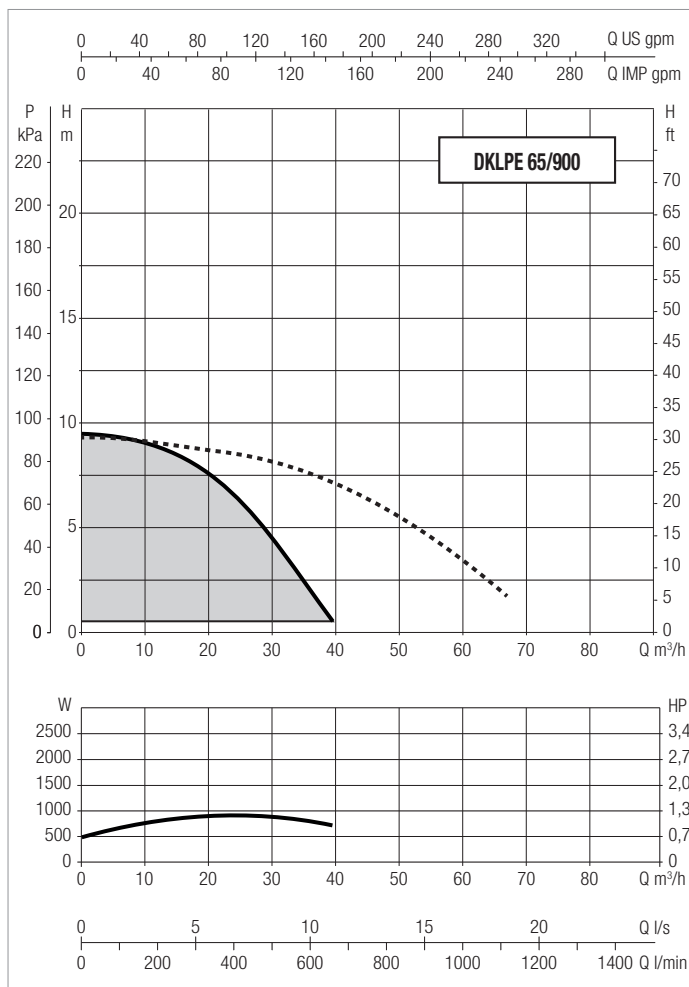
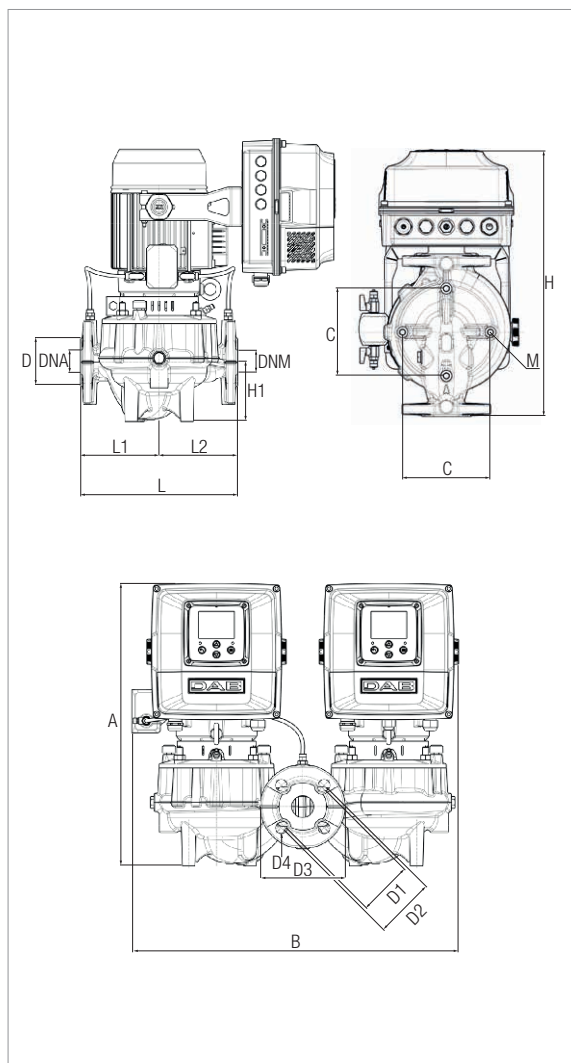
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	ELECTRICAL DATA					
			POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
DKLPE 50-2000 IE5	280	DN 50 PN 16	230 V	2,3	1,8	2,4	10,04	-
DKLPE 50-2000 IE5	280	DN 50 PN 16	400 V	2,4	1,8	2,4	4,07	-

MODEL	BODY	A	B	C1	C2	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																			L/A	L/B	H
DKLPE 50-2000 M IE5	KL50280	508	555	100	392	90	110	125	165	18	435	73	280	140	140	10	50	50	600	300	637
DKLPE 50-2000 T IE5	KL50280	508	555	100	392	90	110	125	165	18	435	73	280	140	140	10	50	50	600	300	637

# DKLPE 65 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

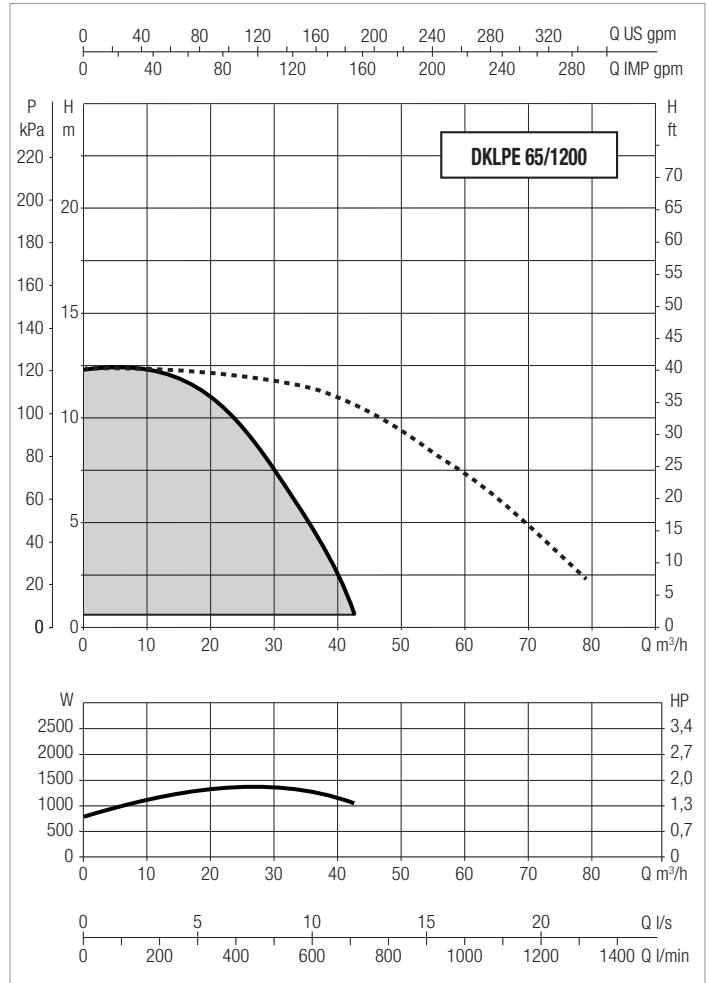
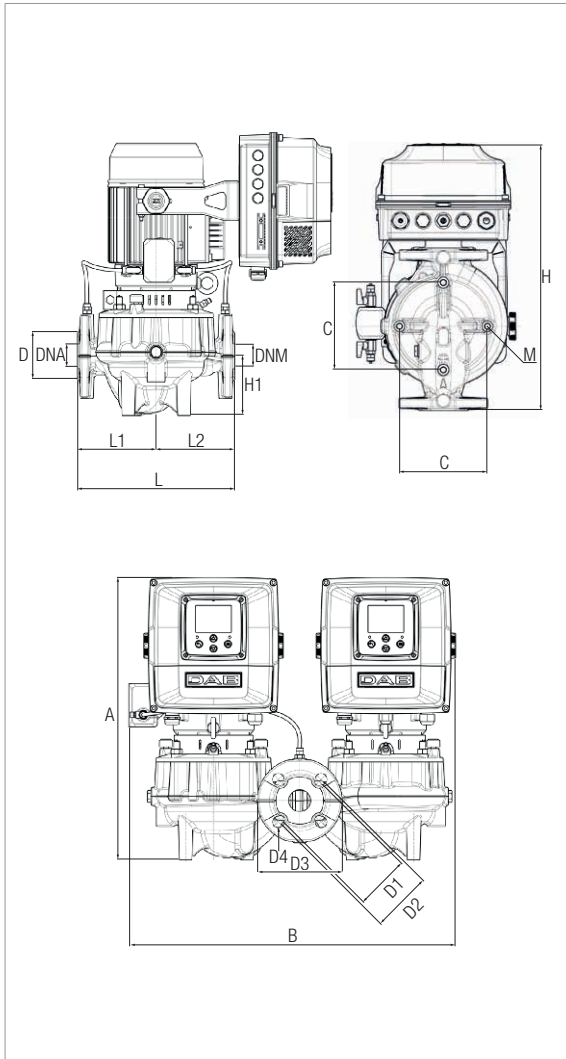
The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	ELECTRICAL DATA					
			POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
DKLPE 65-900 IE5	340	DN 65 PN 16	230 V	0,95	1,1	1,48	4,2	-

MODEL	BODY	A	B	C1	C2	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																			L/A	L/B	H
DKLPE 65-900 M IE5	KL65340	458	495	100	240	110	130	145	185	18	461	82	340	170	170	10	65	65	600	300	637

# DKLPE 65 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

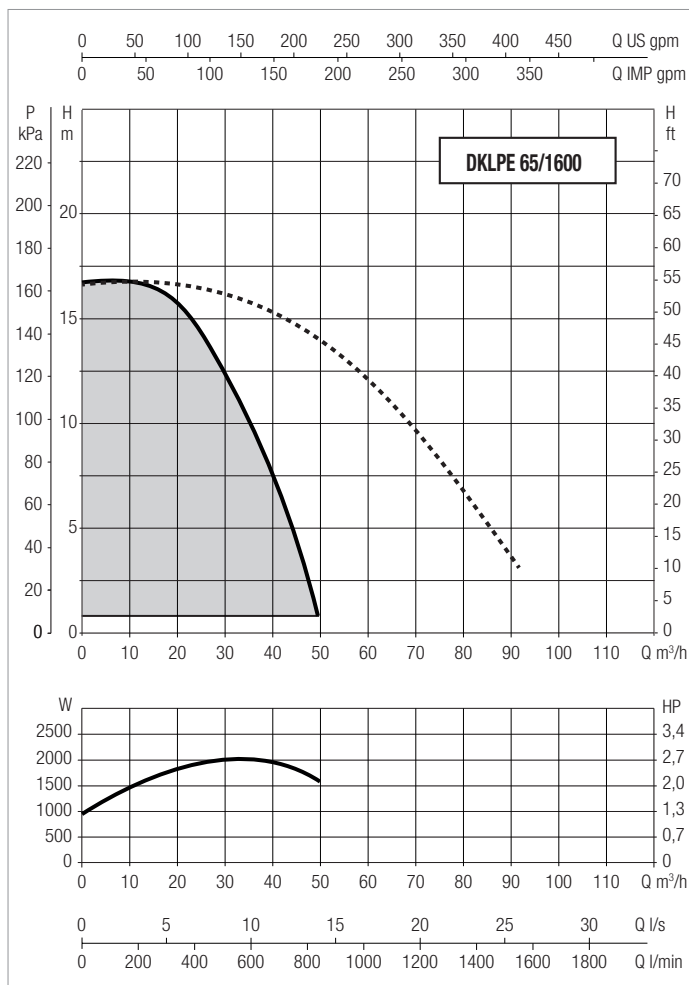
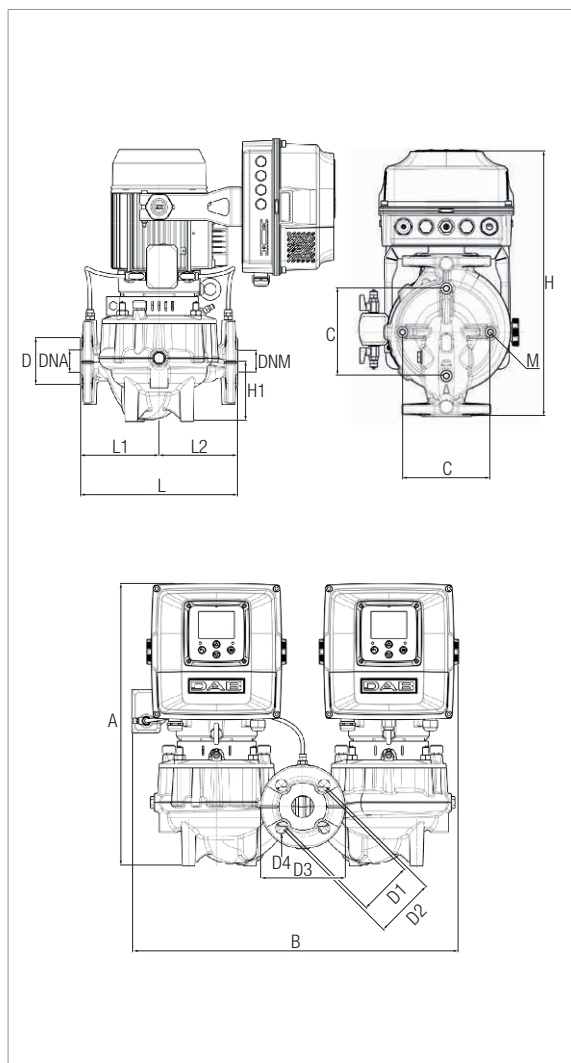
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 Hz	P1 MAX kW	ELECTRICAL DATA			
					P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
DKLPE 65-1200 IE5	340	DN 65 PN 16	230 V	1,3	1,1	1,48	5,7	-

MODEL	BODY	A	B	C1	C2	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																			L/A	L/B	H
DKLPE 65-1200 M IE5	KL65340	528	495	100	240	110	130	145	185	18	465	82	340	170	170	10	65	65	600	300	637

# DKLPE 65 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



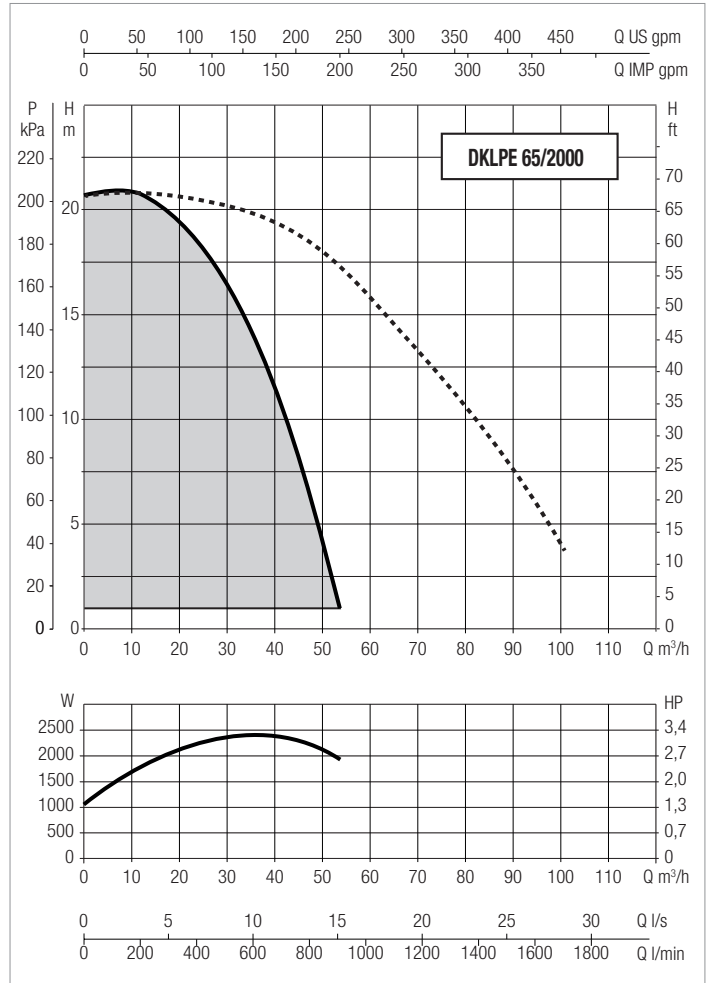
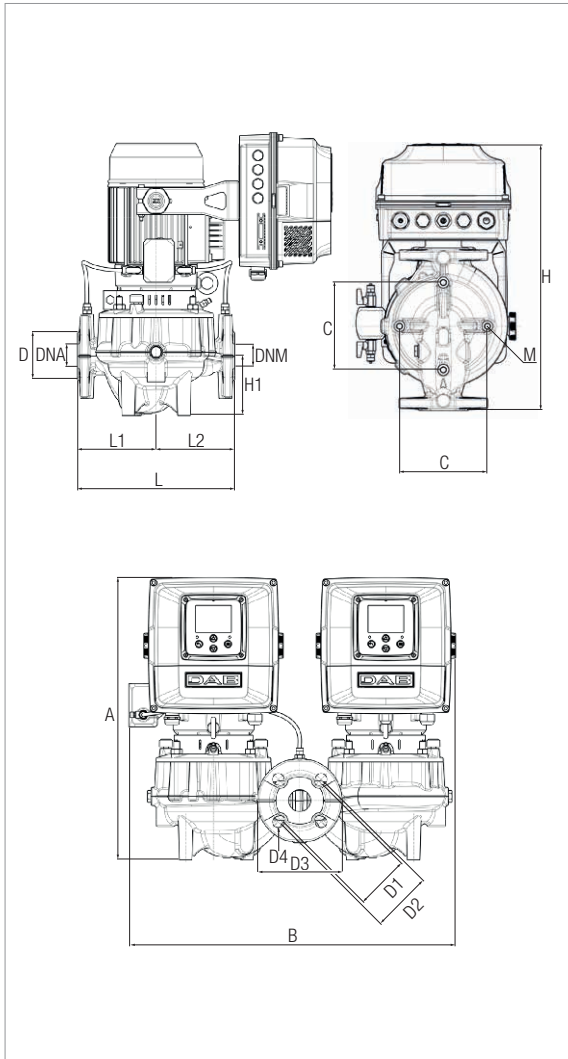
**For the MEI index refer to the hydraulic data of the individual pump.**  
The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 Hz	P1 MAX kW	ELECTRICAL DATA			
					P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
DKLPE 65-1600 IE5	340	DN 65 PN 16	230 V	2	1,6	2,15	8,7	-
DKLPE 65-1600 IE5	340	DN 65 PN 16	400 V	1,9	2,2	2,95	-	3,4

MODEL	BODY	A	B	C1	C2	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																			L/A	L/B	H
DKLPE 65-1600 M IE5	KL65340	528	495	100	240	110	130	145	185	18	465	82	340	170	170	10	65	65	600	300	637
DKLPE 65-1600 T IE5	KL65340	528	495	100	240	110	130	145	185	18	465	82	340	170	170	10	65	65	600	300	637

# DKLPE 65 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



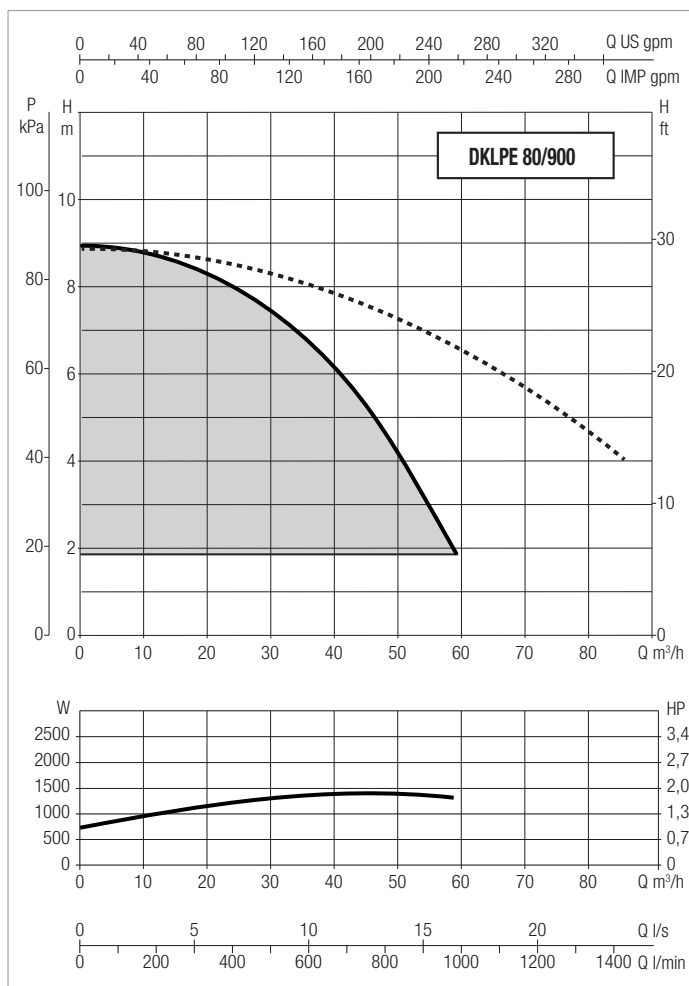
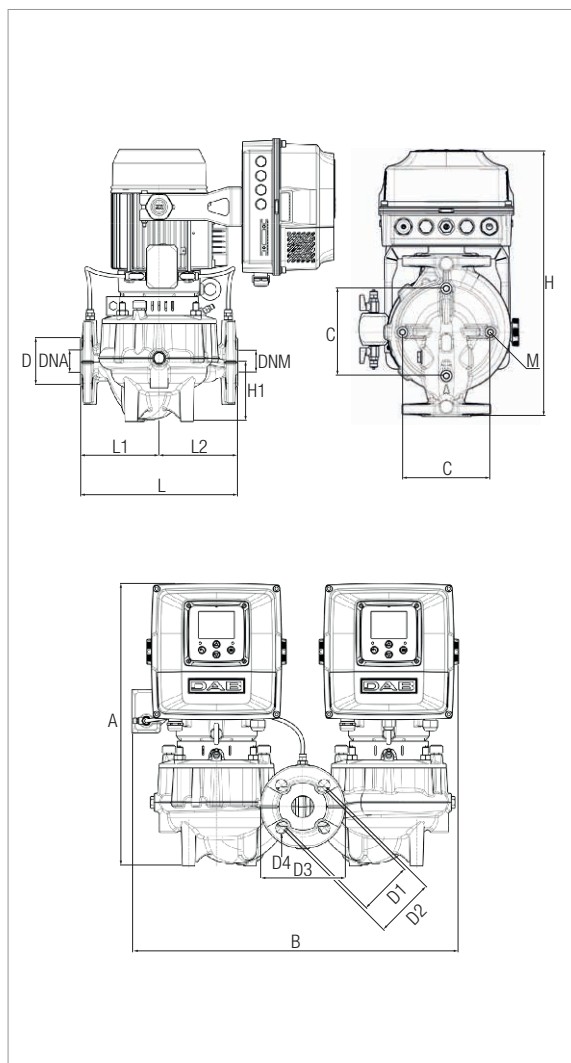
**For the MEI index refer to the hydraulic data of the individual pump.**  
 The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA							
	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
DKLPE 65-2000 IE5	340	DN 65 PN 16	400 V	2,6	2	2,68	-	4,2

MODEL	BODY	A	B	C1	C2	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																			L/A	L/B	H
DKLPE 65-2000 IE5	KL65340	528	495	100	240	110	130	145	185	18	465	82	340	170	170	10	65	65	600	300	637

# DKLPE 80 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



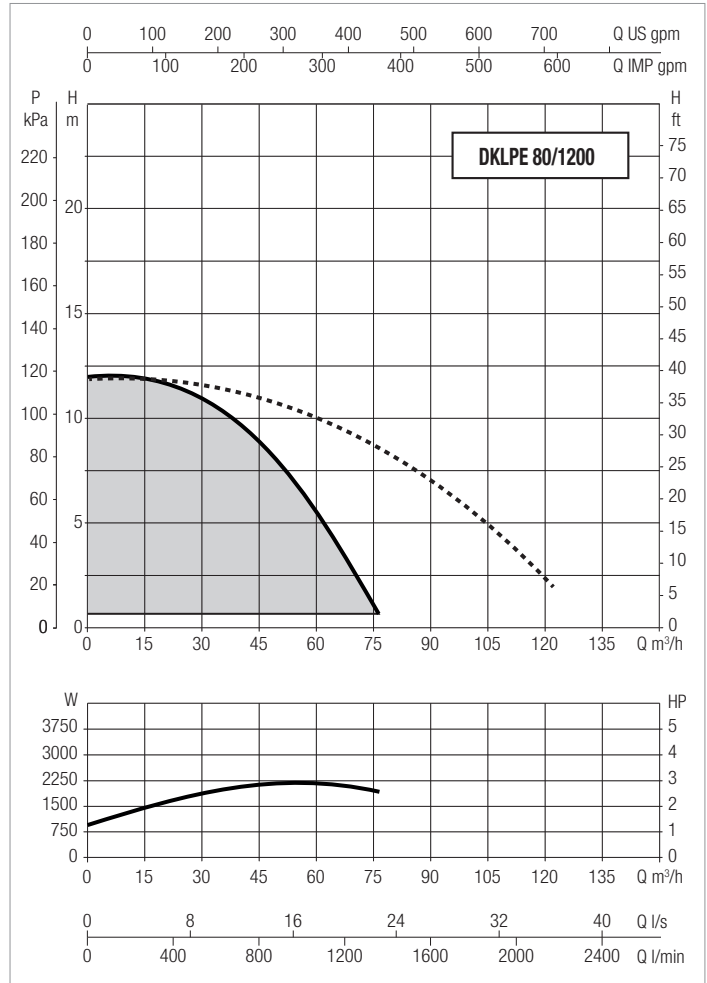
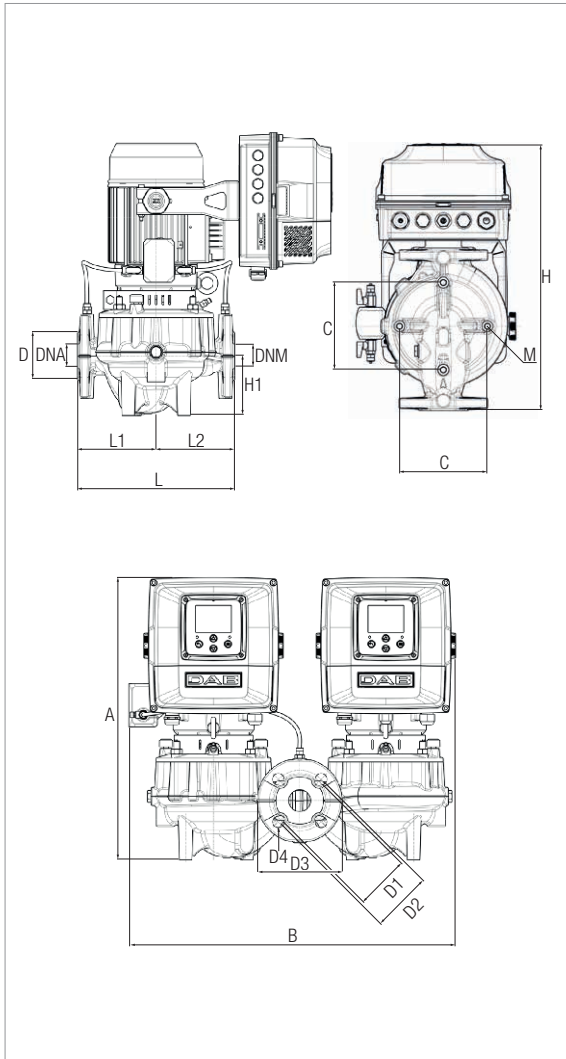
**For the MEI index refer to the hydraulic data of the individual pump.**  
 The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	ELECTRICAL DATA					
			POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
DKLPE 80-900 IE5	360	DN 80 PN 16	230 V	1,4	1,8	2,41	6,4	-
DKLPE 80-900 IE5	360	DN 80 PN 16	400 V	1,4	1,8	2,41	-	2,7

MODEL	BODY	A	B	C1	C2	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																			L/A	L/B	H
DKLPE 80-900 M IE5	KL80360	547	496	115	240	128	150	160	200	18	485	97	360	190	170	10	80	80	600	300	637
DKLPE 80-900 T IE5	KL80360	547	496	115	240	128	150	160	200	18	485	97	360	190	170	10	80	80	600	300	637

# DKLPE 80 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



**For the MEI index refer to the hydraulic data of the individual pump.**

The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

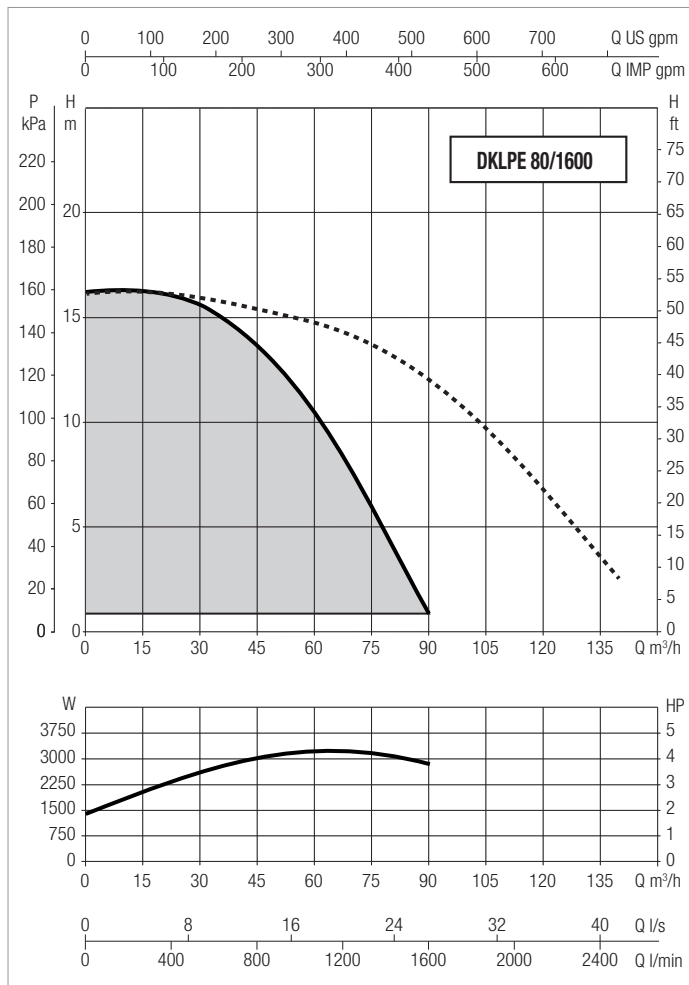
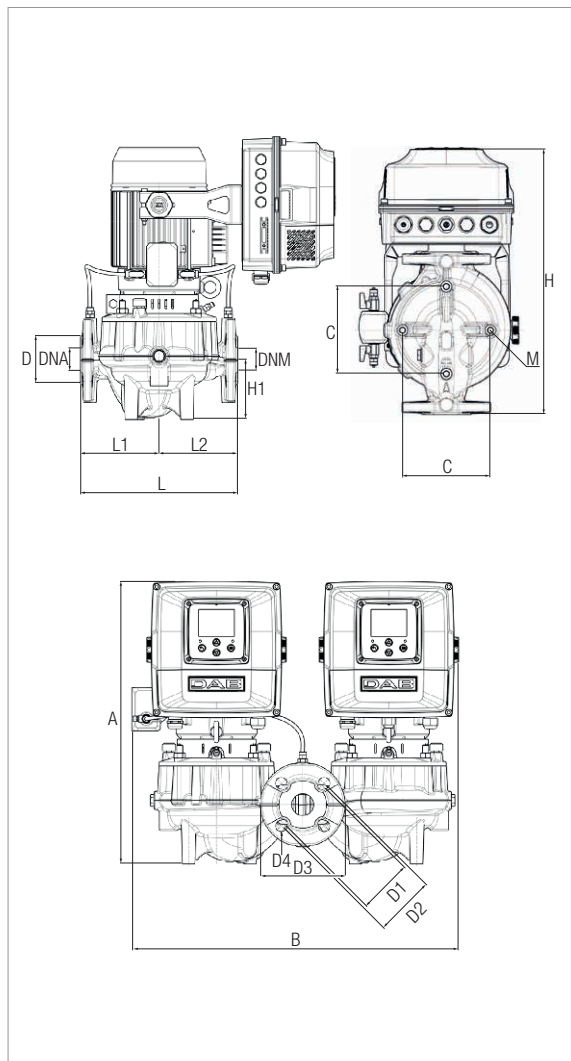
MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 Hz	P1 MAX kW	ELECTRICAL DATA			
					P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
DKLPE 80-1200 IE5	360	DN 80 PN 16	230 V	2,3	1,8	2,41	10,1	-
DKLPE 80-1200 IE5	360	DN 80 PN 16	400 V	2,2	1,8	2,41	-	3,8

MODEL	BODY	A	B	C1	C2	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																			L/A	L/B	H
DKLPE 80-1200 M IE5	KL80360	547	496	115	240	128	150	160	200	18	485	95	360	190	170	10	80	80	600	300	637
DKLPE 80-1200 T IE5	KL80360	547	496	115	240	128	150	160	200	18	485	97	360	190	170	10	80	80	600	300	637



# DKLPE 80 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

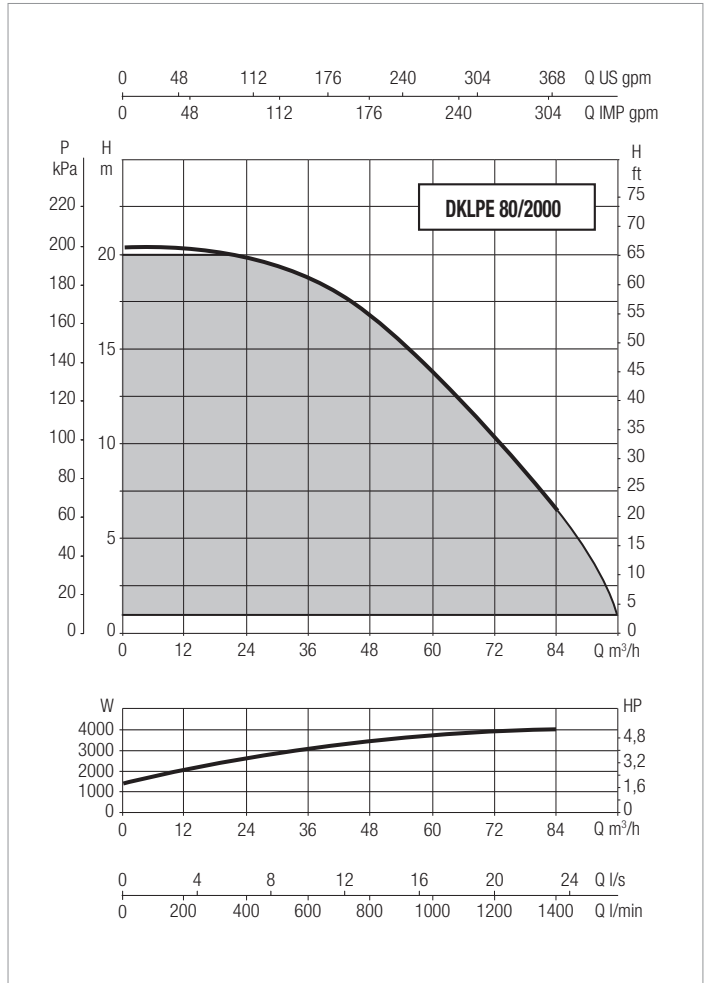
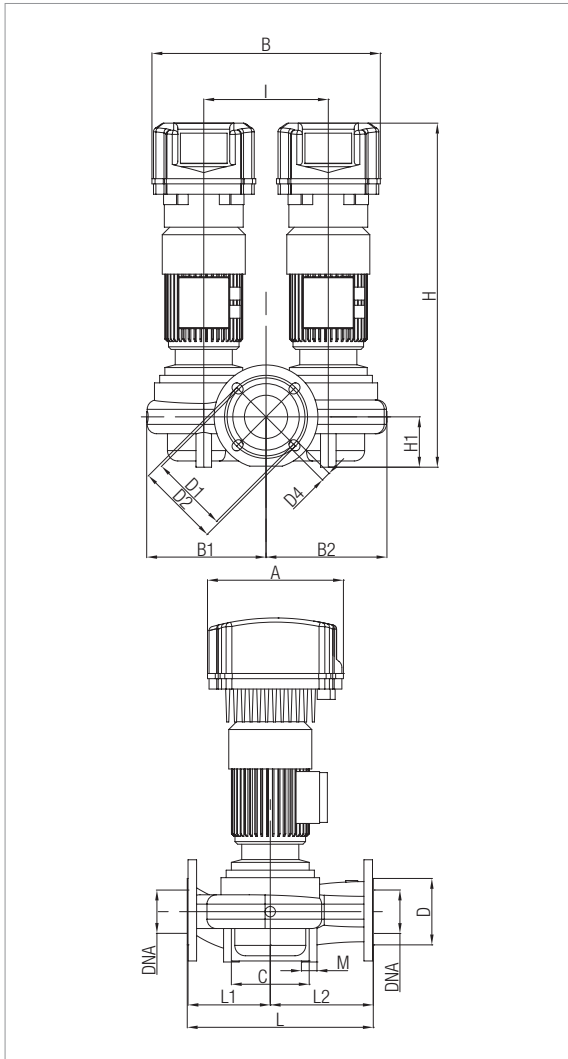
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	ELECTRICAL DATA					
			POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
DKLPE 80-1600 IE5	360	DN 80 PN 16	400 V	3,6	2,5	3,35	-	5,8

MODEL	BODY	A	B	C1	C2	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																			L/A	L/B	H
DKLPE 80-1600 T IE5	KL80360	547	496	115	240	128	150	160	200	18	485	97	360	190	170	10	80	80	600	300	637

# DKLPE 80 - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -15 °C to +120 °C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

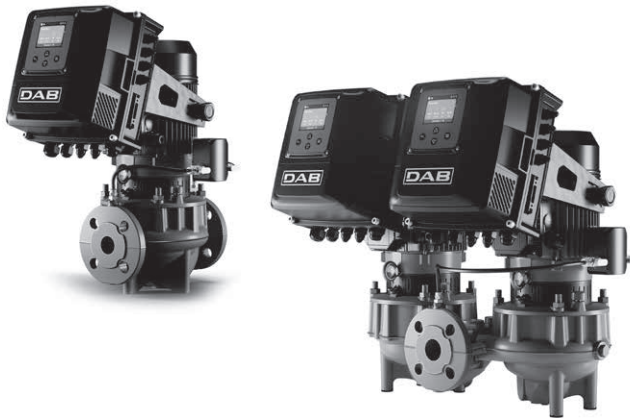
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 Hz	P1 MAX kW	ELECTRICAL DATA			
					P2 NOMINAL		I MAX [A]	
					kW	HP	230 V	400 V
DKLPE 80-2000 T IE3	360	DN 80 PN 16	400 V	5	3,6	4,83	-	8,4

MODEL	A	B	B1	B2	C	D	D1	D2	D3	D4	H	H1	I	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS		
																				L/A	L/B	H
DKLPE 80-2000 T IE3	352	567	238	241	150	128	150	160	200	4 HOLES 18x23	713	97	240	360	160	200	4 HOLES M14	80	80	726	626	844

# CP2E, CP2-GE / DCP2E, DCP2-GE

## ELECTRONIC IN-LINE PUMPS



### TECHNICAL DATA

**Operating range:** up to 105 m<sup>3</sup>/h

**Head:** up to 110 m

**Type of pumped liquid:** clean, free of solids and abrasives, non-viscous, non-aggressive, non-crystallised and chemically neutral, with properties similar to water

**Glycol percentage (maximum):** 50%

**Liquid temperature range:** from -15 °C to +140 °C

**Maximum ambient temperature:** +50 °C

**Maximum operating pressure:** 1600 kPa / 16 bar

**Flanging or threading:** flanging PN 10/PN16

**Motor efficiency:** IE2 up to 0,55 kW; IE3 ≥ 0,75 kW

**Motor protection class:** IP 55

**Motor insulation class:** F

**Impeller material:** cast iron or technopolymer

**Three phase power input:** 3x230 V 50 Hz / 3x400 V 50 Hz

**Max rpm:** 2910 rpm

**Type of installation:** Fixed in horizontal or vertical position with motor in up position. Only in vertical position for motor from 7,5 kW.

Circulation pumps with inline ports, suitable for use in heating and air-conditioning, refrigeration and domestic hot water systems. The use of the MCE-C variable frequency drive makes this a particularly versatile unit by ensuring that performance is automatically adjusted to match the system's different requirements, at the same time maintaining constant differential pressures. They come in single and twin-head versions.

### CONSTRUCTION FEATURES OF THE PUMP

PN10 or PN16 flanged inlet and outlet with threaded holes for control pressure gauges. Cast iron pump casing and motor mount, cast iron or technopolymer impeller depending on the model. AISI 316 motor shaft. Mechanical seal with silicon carbide stationary face and rotating face.

### CONSTRUCTION FEATURES OF THE MOTOR

IE5-rated permanent magnet motor on models up to 2.2 kW paired with NgDrive to achieve the highest possible efficiency rating. IE3 motor paired with MCE-C on 3kW models and up.

### CONSTRUCTION FEATURES OF THE ELECTRONIC

The inline motor-driven pumps are controlled using NgDrive, the variable-speed control unit designed to adapt performance to match the system's actual requirements, with a resulting reduction in power demand along with energy savings. The gradual motor speed adjustment decreases the potential for component wear and protects the pump from water hammer.

The graphic display makes the unit easy to read and simplifies the process of entering operation settings; system setup is also very simple thanks to the relevant wizard.

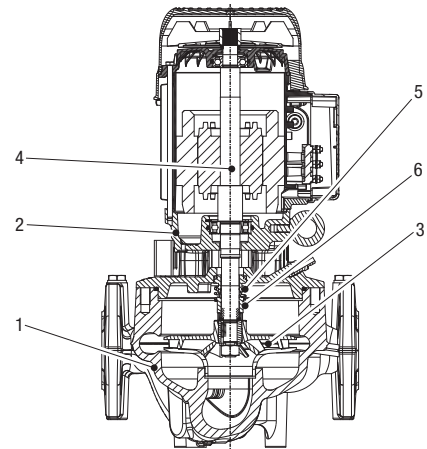
A lot of thought has gone into the functional design to ensure installation and maintenance are straightforward: it is easy to handle; it can be mounted on a wall or on the pump in 5 different positions; and it is split into two parts so that the various components inside can be mounted and serviced separately. It delivers efficiency, energy savings, and is supremely user friendly.

# CP2E, CP2-GE / DCP2E, DCP2-GE

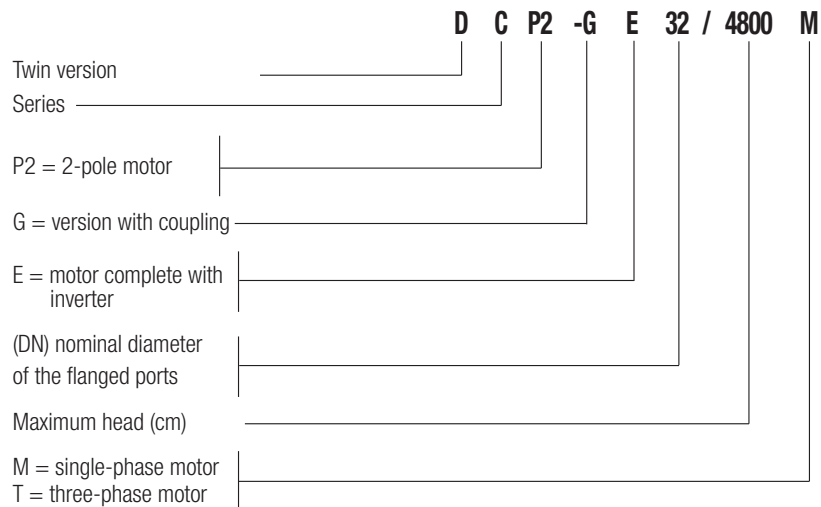
## ELECTRONIC IN-LINE PUMPS

### MATERIALS

N.	PARTS	MATERIALS
1	PUMP BODY	CAST IRON EN G.JL250 UNI EN 1561
2	SUPPORT	CAST IRON EN G.JL250 UNI EN 1561
3	IMPELLER	CAST IRON EN G.JL200 UNI EN 1561 AND ULTRASON E 2010
4	SHAFT WITH ROTOR	AISI 316
5	MECHANICAL SEAL	SPRING AISI 316 - SIC / SIC - EPDM
6	O-RING	EPDM



### Denominations: (example)



# CONSTRUCTION FEATURES ELECTRICAL SECTION

NGDRIVE

The technological product of over 40 years' experience in the water handling sector. NgDrive is not just a variable frequency drive, it is the hardware component of a fully-fledged smart system, conceived to cater to the needs of its users, not least in its design.

VERSATILITY and EASE of use make NgDrive the most comprehensive controller available in the market. A new generation of variable frequency drives, designed for the control and protection of circulation and pressure booster pumps, adjusting them to suit the system's actual demands, thus resulting in both occupant comfort and real energy savings.

Drawing on cutting-edge TECHNOLOGIES and the DAB group's lengthy experience, NgDrive features a meticulously engineered design that is not just design for design's sake; instead, it was conceived specifically to cater to the needs of its users. Moreover, it is split into two parts that can be separated so that the components inside can even be fitted at different times and serviced without disconnecting any wires.

With the option of being fitted on the actual pump or wall mounted, NgDrive gives you the tool you need to get the most out of the DAB range of pumps and use them in the most efficient way. NgDrive has been designed and built to offer the best user experience: easy to install, set up and monitor.

- 2.8" TFT colour display
- A single software for different applications (circulation and pressure boosting)
- Keypad with intuitive commands
- Setup and getting started wizards
- Software updates via app
- Integrated connectivity (Wi-fi, Bluetooth, Wireless, Modbus) for remote control

NgDrive introduces new standards in DAB technology: cooling via built-in fan with speed control based on temperature, and architecture with four microprocessors:

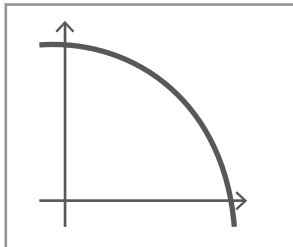
- Wireless communication
- Pump functions managed via display
- Motor control
- Input and output signals

Between two and a maximum of six variable frequency drives can be connected wirelessly.

## OPERATING MODES

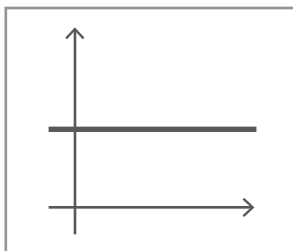
NgDrive can be used to control pumps both for pressure boosting systems and circulation systems. Constant-pressure control is the method used for pressure boosting applications, while for circulation, the control options are as follows:

- Constant speed
- Constant differential temperature
- Constant temperature
- Proportional differential pressure
- Constant differential pressure



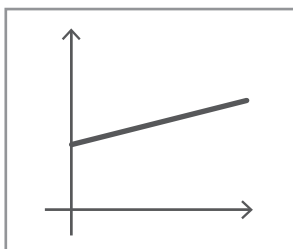
### Constant speed

The speed of rotation is kept at a constant rpm. This speed can be set in a range from a minimum value to the circulation pump's nominal frequency. This mode can be set via the control panel.



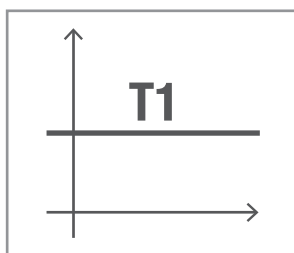
### Constant differential pressure

The maximum head is constant, regardless of the water demand. This mode can be set via the control panel, where you can specify the pressure setpoint and, where applicable, the liquid temperature dependence (in this case, you will need to connect a T1 and T2 sensor).



### Proportional differential pressure

In this control mode, the differential pressure is reduced or increased as water demand drops or rises. This mode can be set via the control panel, where you can specify the pressure setpoint and, where applicable, the liquid temperature dependence (in this case, you will need to connect a T1 and T2 sensor).

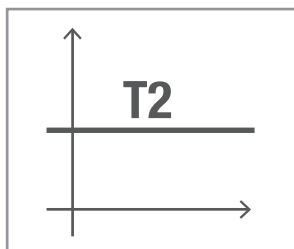


### Constant temperature

With this function, the circulation pump increases or decreases flow rate to keep constant the temperature measured by the NTC sensor connected.

You can set 2 operating modes:

- T1 increase mode → if the desired temperature ( $T_s$ ) is greater than the temperature measured ( $T_1$ ), the circulation pump increases flow rate until the temperature reaches  $T_s$ .
- T1 decrease mode → if the desired temperature ( $T_s$ ) is greater than the temperature measured ( $T_1$ ), the circulation pump decreases flow rate until the temperature reaches  $T_s$

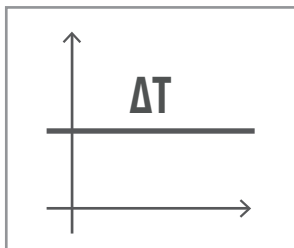


### Constant temperature

With this function, the circulation pump increases or decreases flow rate to keep constant the temperature measured by the NTC sensor connected.

You can set 2 operating modes:

- T2 increase mode → if the desired temperature ( $T_s$ ) is lower than the temperature measured ( $T_1$ ), the circulation pump increases flow rate until the temperature reaches  $T_s$ .
- T1 decrease mode → if the desired temperature ( $T_s$ ) is greater than the temperature measured ( $T_1$ ), the circulation pump decreases flow rate until the temperature reaches  $T_s$ .



### Constant temperature difference

With this function, the circulation pump increases or decreases flow rate to keep constant the T1-T2 temperature difference as an absolute value. This mode can be set via the control panel, where you can specify the temperature setpoint.

# CP2E, CP2-GE / DCP2E, DCP2-GE

ELECTRONIC IN-LINE PUMPS

## SELECTION TABLE - CP2E

MODEL	HYDRAULIC DATA						
	Q=m <sup>3</sup> /h	0	10	15	20	30	35
	Q=l/min	0	167	250	333	500	583
CP2E 32-1400 IE5	H (m)	14,2	12,6	11,1	9,0		
CP2E 32-1800 IE5		17,8	16,4	14,8	12,6	6,3	
CP2E 32-2100 IE5		22,7	17,6	10,0			
CP2E 32-2200 IE5		22,5	21,3	19,7	17,3	10,5	5,9
CP2E 32-2700 IE5		26,7	26,2	24,8	22,8	17,1	13,3
CP2E 32-3600 IE3		36,4	35,5	33,5	31,0	24,8	
CP2E 32-4000 IE3		40,3	39,4	37,4	34,9	28,4	24,5
CP2-GE 32-4800 IE3		48,7	48,1	46,5	44,2	37,9	33,8

## SELECTION TABLE - DCP2E

MODEL	HYDRAULIC DATA						
	Q=m <sup>3</sup> /h	0	10	15	20	30	35
	Q=l/min	0	167	250	333	500	583
DCP2E 32-1400 IE5	H (m)	14,2	12,3	10,3	7,2		
DCP2E 32-1800 IE5		17,6	15,9	13,8	10,8	1,5	
DCP2E 32-2100 IE5		23,0	17,3	9,1			
DCP2E 32-2200 IE5		22,8	21,4	19,3	16,1	6,5	0,4
DCP2E 32-2700 IE5		27,0	25,7	24,3	22,1	16,4	12,6
DCP2E 32-3600 IE3		36,9	35,0	33,1	30,4	22,6	
DCP2E 32-4000 IE3		40,9	39,1	37,0	34,1	25,9	21,0
DCP2-GE 32-4800 IE3		49,4	47,8	46,2	43,7	34,9	28,9

# CP2E, CP2-GE / DCP2E, DCP2-GE

ELECTRONIC IN-LINE PUMPS

## SELECTION TABLE - CP2E

MODEL	HYDRAULIC DATA								
	Q=m <sup>3</sup> /h	0	10	15	20	30	40	50	70
	Q=l/min	0	167	250	333	500	667	833	1167
CP2E 40-1900 IE5	H (m)	19,1	19,4	19,3	18,4	13,9	7,4		
CP2E 40-2200 IE5		22,3	22,8	22,4	21,7	19,2	15,5		
CP2E 40-2800 IE3		27,6	27,8	27,2	26,3	23,5	19,8		
CP2E 40-3300 IE3		33,1	33,5	32,9	32,0	29,2	25,3		
CP2-GE 40-4000 IE3		38,5	39,0	38,9	38,3	35,7	30,9		
CP2-GE 40-5000 IE3		48,8	49,2	49,0	48,6	46,9	44,3		
CP2-GE 40-6600 IE3		66,2	66,4	66,1	65,6	63,6	60,5		
CP2-GE 40-8200 IE3		82,0	82,1	81,8	81,2	78,9	74,9	69,1	52,9

## SELECTION TABLE - DCP2E

MODEL	HYDRAULIC DATA								
	Q=m <sup>3</sup> /h	0	10	15	20	30	40	50	70
	Q=l/min	0	167	250	333	500	667	833	1167
DCP2E 40-1900 IE5	H (m)	19,0	19,2	18,7	17,7	14,4	9,0		
DCP2E 40-2200 IE5		22,9	23,5	23,0	22,2	19,2	14,5		
DCP2E 40-2800 IE3		27,7	28,2	27,9	27,1	24,1	19,2		
DCP2E 40-3300 IE3		33,4	33,9	33,5	32,8	29,9	25,2		
DCP2-GE 40-4000 IE3		39,2	39,5	39,4	38,9	36,3	31,1		
DCP2-GE 40-5000 IE3		49,3	49,4	49,0	48,4	45,9	41,7		
DCP2-GE 40-6600 IE3		67,9	67,6	67,0	66,2	63,3	58,7		
DCP2-GE 40-8200 IE3		83,4	84,3	83,8	82,7	79,2	74,1	67,4	46,1



# CP2E, CP2-GE / DCP2E, DCP2-GE

ELECTRONIC IN-LINE PUMPS

## SELECTION TABLE - CP2E

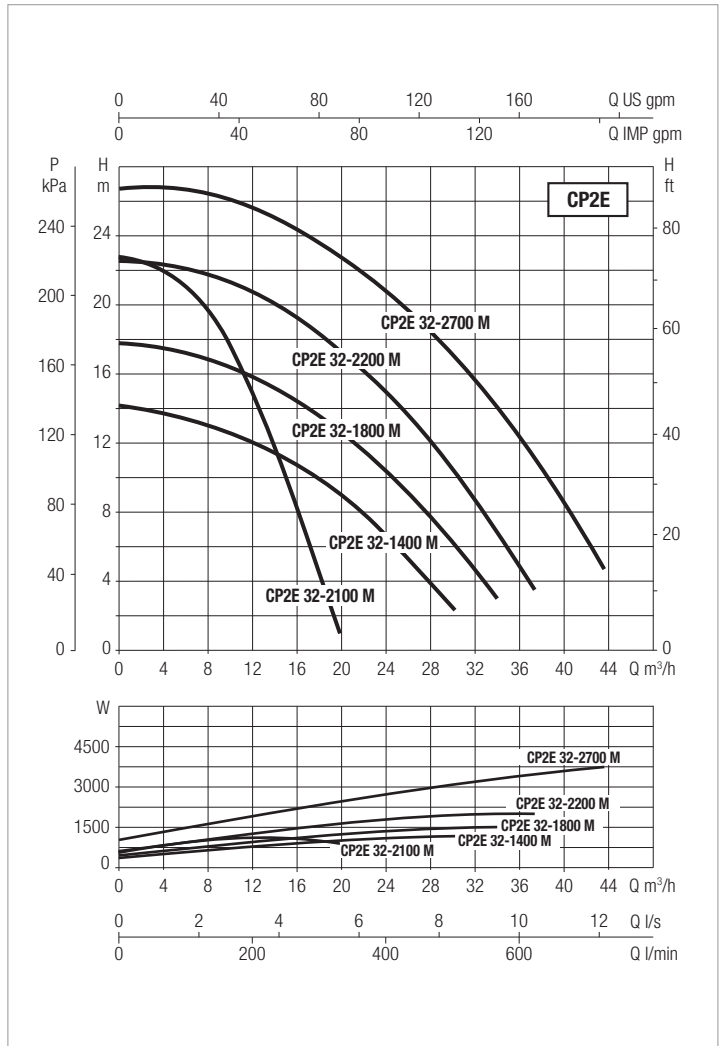
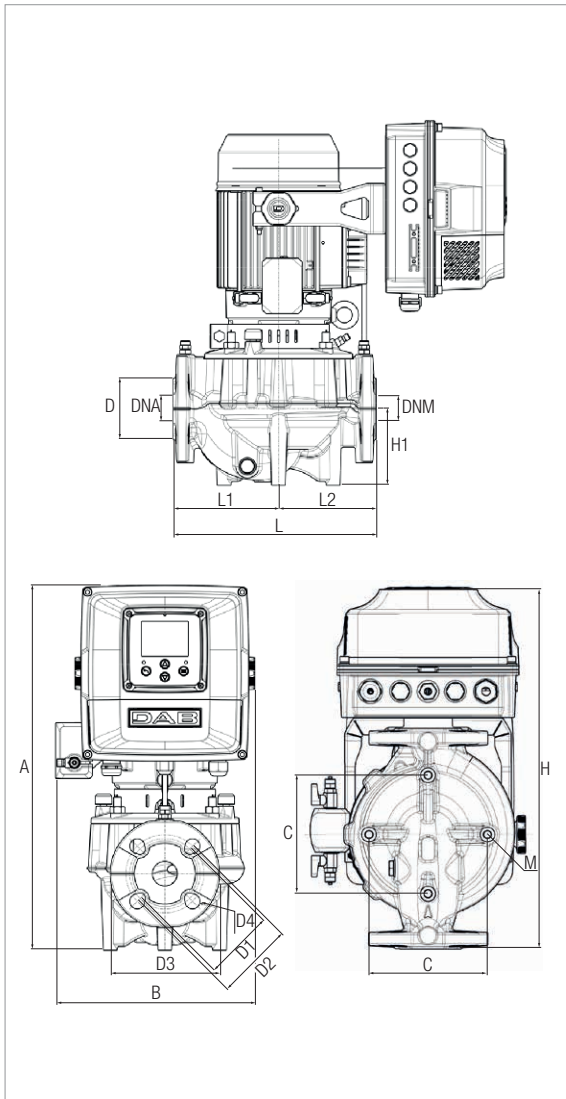
MODEL	HYDRAULIC DATA								
	Q=m <sup>3</sup> /h	0	10	20	30	40	50	60	70
	Q=l/min	0	167	250	333	500	667	833	1167
CP2E 50-800 IE5	H (m)	8,0	7,7	6,5	4,6				
CP2E 50-1100 IE5		11,3	11,2	10,5	9,0	6,7	4,0	1,3	
CP2E 50-1400 IE5		14,1	14,2	13,8	12,6	10,7	7,9	4,3	
CP2E 50-1800 IE5		17,4	17,8	17,5	16,5	14,8	12,4	9,1	
CP2E 50-2100 IE3		21,4	21,8	21,4	20,1	18,1	15,3	11,6	6,8
CP2E 50-2800 IE3		27,9	27,6	26,6	24,9	22,4	19,1	15,2	10,5
CP2-GE 50-3300 IE3		33,8	33,9	33,0	31,2	28,6	25,2	21,1	16,1
CP2-GE 50-4400 IE3		43,7	44,0	43,2	41,5	38,8	35,1	30,5	25,0
CP2-GE 50-5200 IE3		52,0	53,2	52,9	51,7	49,8	47,3	44,2	40,6
CP2-GE 50-6600 IE3		65,5	67,2	66,8	65,2	62,9	60,3	57,6	54,5

## SELECTION TABLE - DCP2E

MODEL	HYDRAULIC DATA								
	Q=m <sup>3</sup> /h	0	10	20	30	40	50	60	70
	Q=l/min	0	167	250	333	500	667	833	1167
DCP2E 50-800 IE5	H (m)	8,1	7,7	6,1	4,0				
DCP2E 50-1100 IE5		11,4	11,2	10,1	8,1	5,5			
DCP2E 50-1400 IE5		14,7	14,5	13,7	12,1	9,6	6,4	2,5	
DCP2E 50-1800 IE5		17,4	17,5	16,9	15,6	13,4	10,2	5,9	
DCP2E 50-2100 IE3		22,1	22,4	21,7	20,1	17,8	14,6	10,5	5,2
DCP2E 50-2800 IE3		28,6	28,1	26,9	24,8	21,7	17,6	12,5	6,7
DCP2-GE 50-3300 IE3		34,6	34,5	33,5	31,5	28,4	24,3	19,2	12,9
DCP2-GE 50-4400 IE3		44,3	44,5	43,7	41,9	38,8	34,5	29,0	22,5
DCP2-GE 50-5200 IE3		53,3	54,1	53,7	52,4	50,1	47,1	43,3	38,8
DCP2-GE 50-6600 IE3		67,2	68,8	68,4	66,8	64,4	61,5	58,2	54,4

## CP2E - ELECTRONIC IN-LINE PUMPS

Liquid temperature range: from -15°C up to 140°C - Maximum operating pressure: 16 bar (1600 kPa)



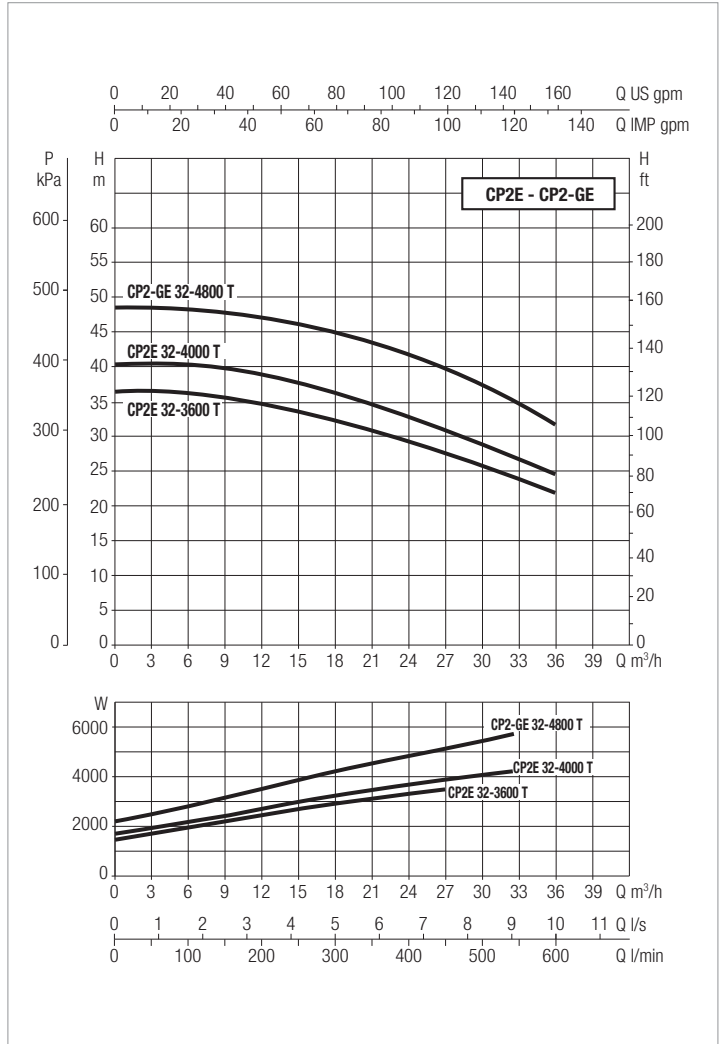
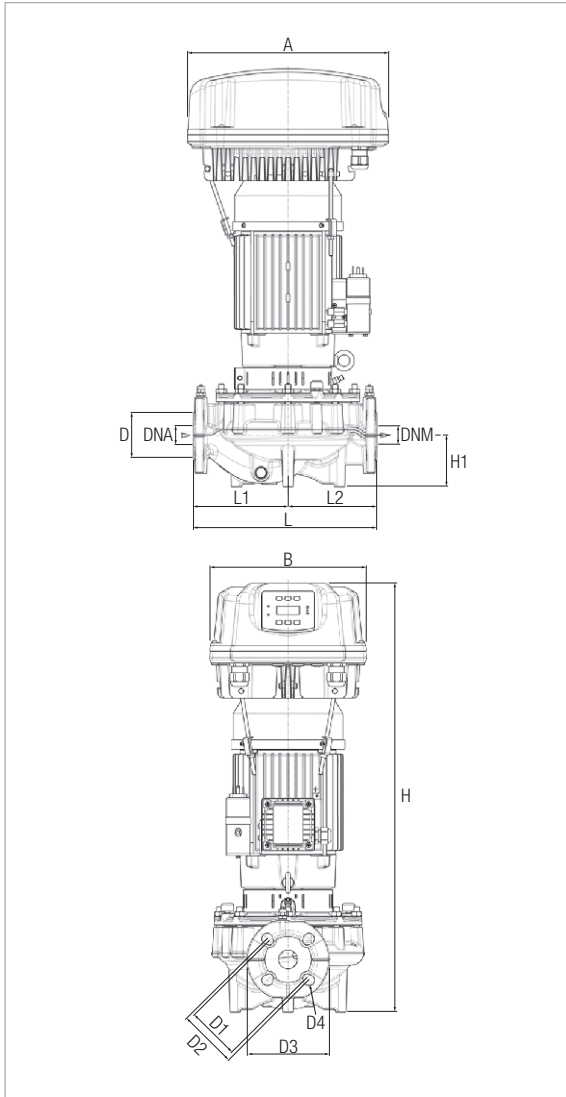
The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA							
	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 HZ	P1 MAX [kW]	P2 NOMINAL		In [A]	
					kW	HP	230 V	400 V
CP2E 32-1400 IE5	260	DN 32 PN 16 DN 32 PN 10	230 V	0,93	0,70	0,94	5,1	-
CP2E 32-1800 IE5				1,5	1,10	1,48	6,64	-
CP2E 32-2100 IE5				1,13	0,70	0,94	5	-
CP2E 32-2200 IE5				2	1,50	2,01	8,8	-
CP2E 32-2700 IE5	320		400 V	3,4	2,20	2,95	-	5,3

MODEL	A	B	C	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																	L/A	L/B	H		
CP2E 32-1400 IE5	467	255	140	78	90	100	141	19	426	98	260	135	125	10	32	32	600	300	640	0,12	31
CP2E 32-1800 IE5	537	256	140	78	90	100	140	19	430	98	260	135	125	10	32	32	600	300	640	0,12	31
CP2E 32-2100 IE5	467	255	140	78	90	100	141	19	426	98	260	135	125	10	32	32	600	300	640	0,12	31
CP2E 32-2200 IE5	537	256	140	78	90	100	140	19	430	98	260	135	125	10	32	32	600	300	640	0,12	31
CP2E 32-2700 IE5	537	256	180	79	90	100	140	19	460	90	320	165	155	10	32	32	600	300	640	0,12	41,5

# CP2E, CP2-GE - ELECTRONIC IN-LINE PUMPS

Liquid temperature range: from -15°C to +140°C - Maximum operating pressure: 16 bar (1600 kPa)



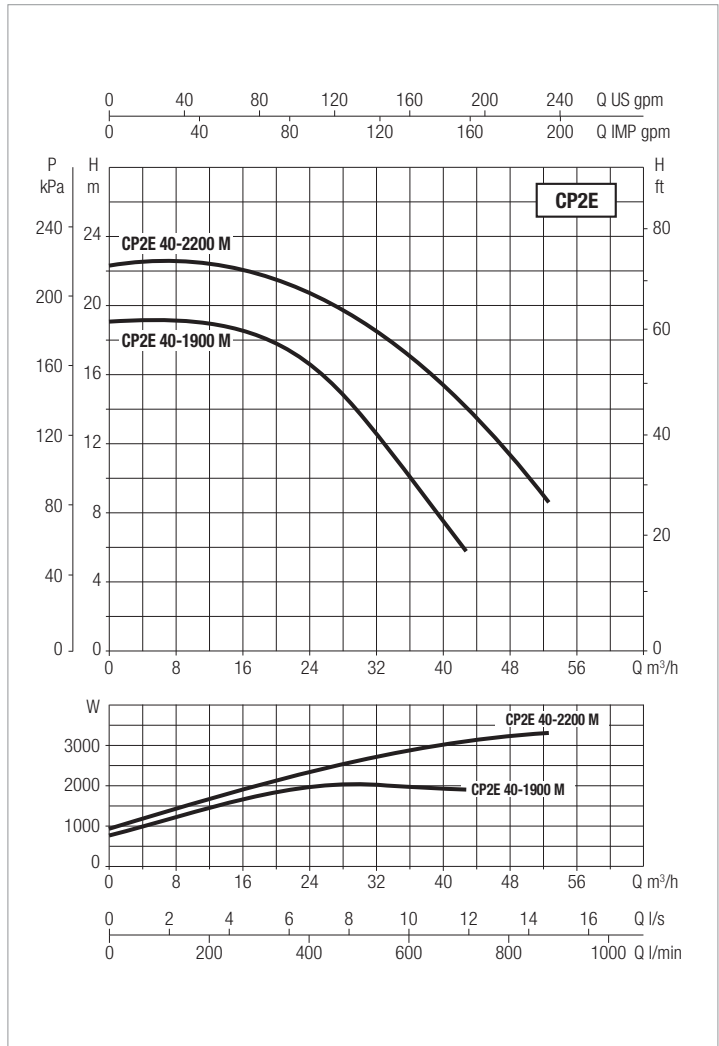
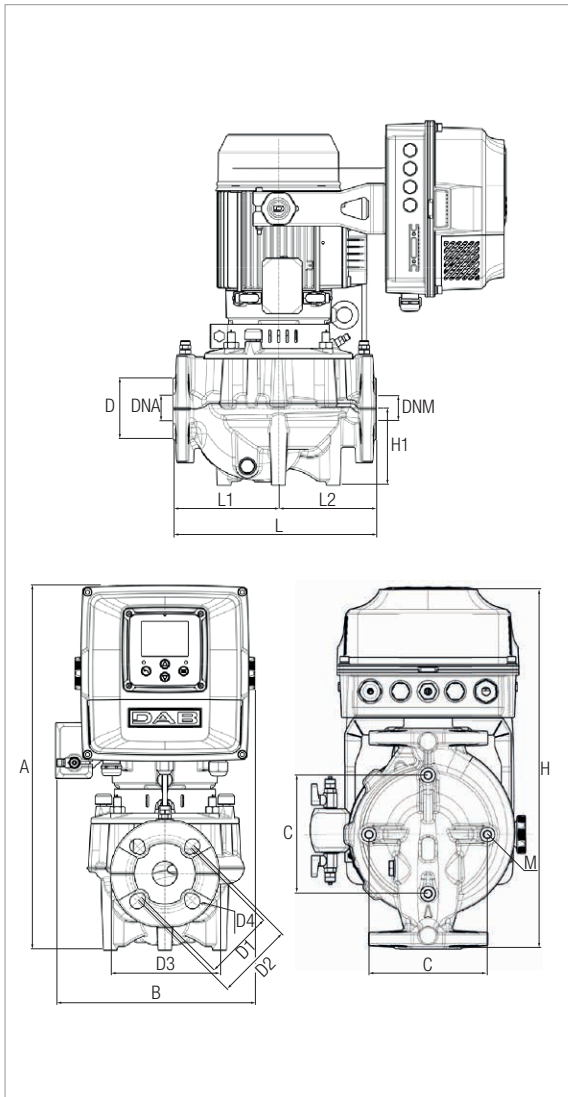
The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA							
	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 HZ	P1 MAX [kW]	P2 NOMINAL		In [A]	
					kW	HP	230 V	400 V
CP2E 32-3600 IE3	320	DN 32 PN 16 DN 32 PN 10	400 V	5,6	3	4,02	-	8,90
CP2E 32-4000 IE3				6,3	4	5,36	-	10,2
CP2-GE 32-4800 IE3				8,3	5,50	7,38	-	12,5

MODEL	A	B	B1	B2	C1	D	D1	S1	D2	S2	D3	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																				L/A	L/B	H		
																				CP2E 32-3600 IE3	355	270		
CP2E 32-4000 IE3	355	270	130	125	180	80	100	14	90	19	140	730	90	320	165	155	10	32	32	680	430	1084	0,32	52,7
CP2-GE 32-4800 IE3	355	270	129	120	180	80	100	14	90	19	140	884	90	320	165	155	10	32	32	680	430	1084	0,32	87,8

## CP2E - ELECTRONIC IN-LINE PUMPS

Liquid temperature range: from -15°C up to 140°C - Maximum operating pressure: 16 bar (1600 kPa)



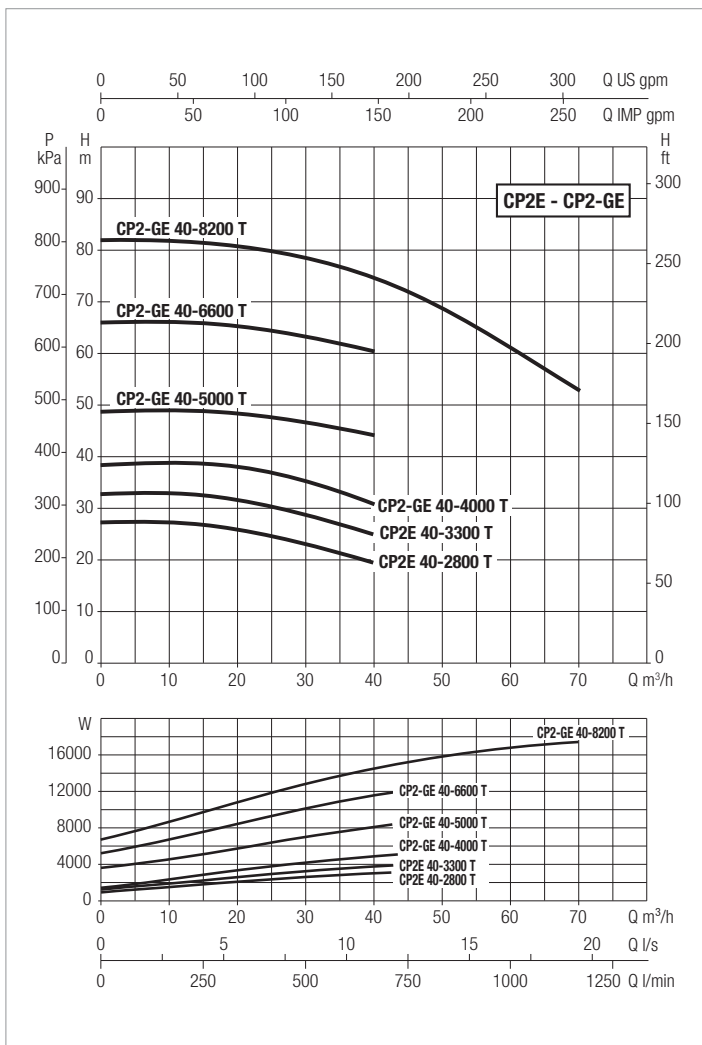
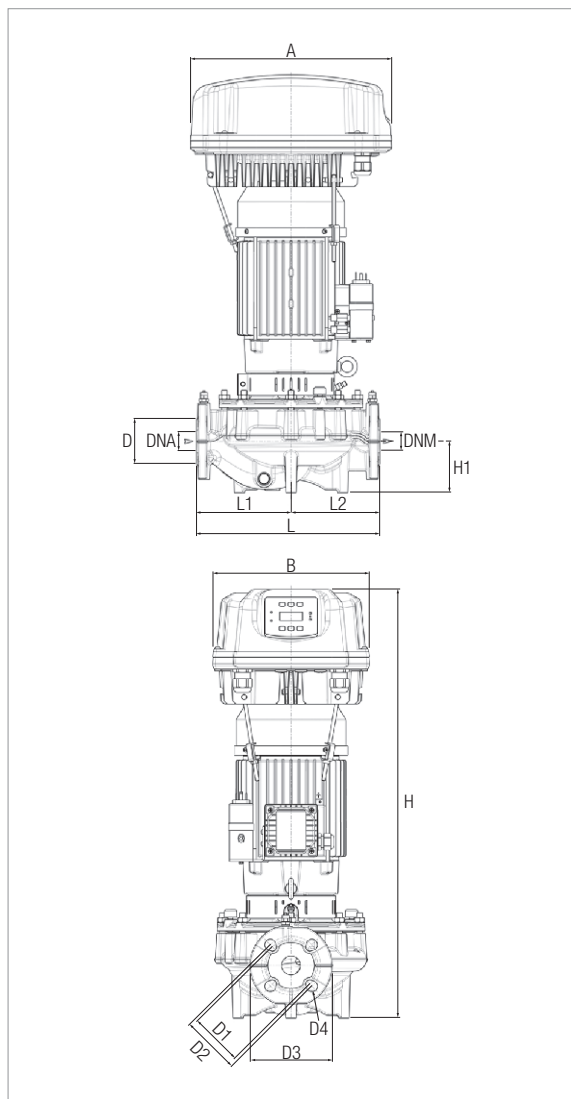
The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA							
	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 HZ	P1 MAX [kW]	P2 NOMINAL		In [A]	
					kW	HP	230 V	400 V
CP2E 40-1900 IE5	320	DN 40 PN 16	230 V	2,00	1,5	2,0	8,90	-
CP2E 40-2200 IE5			400 V	3,30	2,2	3,0	-	5,30

MODEL	A	B	C	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																	L/A	L/B	H		
CP2E 40-1900 IE5	533	256	180	89	100	110	150	19	463	95	320	168	152	10	40	40	600	300	640	0,12	42,5
CP2E 40-2200 IE5	533	271	180	89	100	110	150	19	463	95	320	168	152	10	40	40	600	300	640	0,12	42,5

# CP2E, CP2-GE - ELECTRONIC IN-LINE PUMPS

Liquid temperature range: from -15°C to +140°C - Maximum operating pressure: 16 bar (1600 kPa)



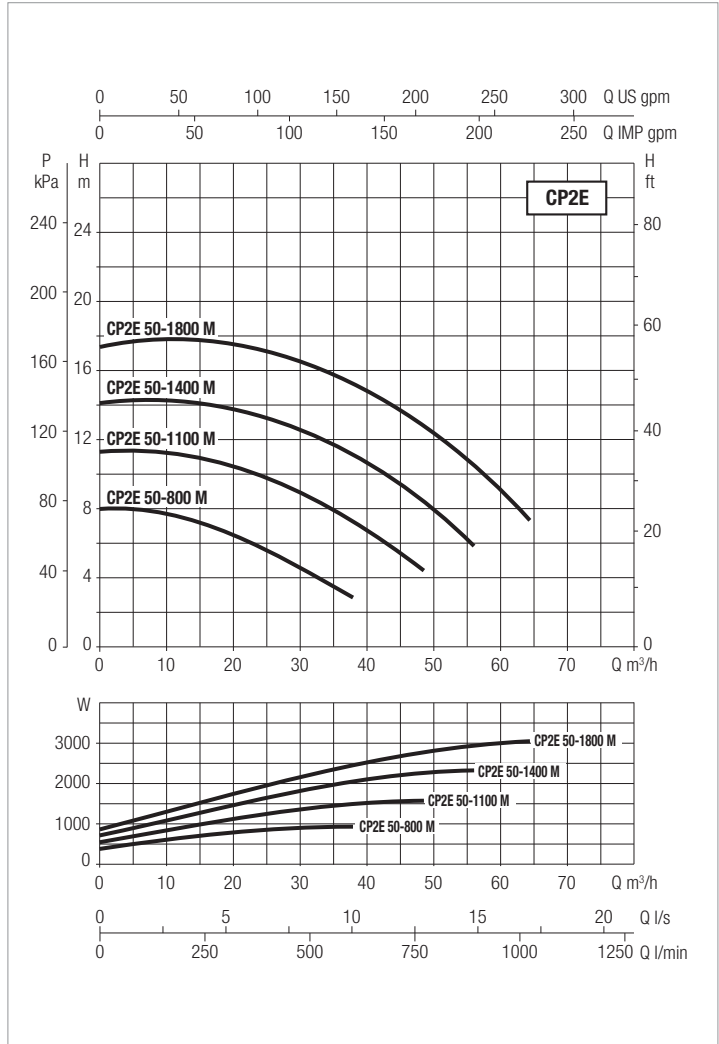
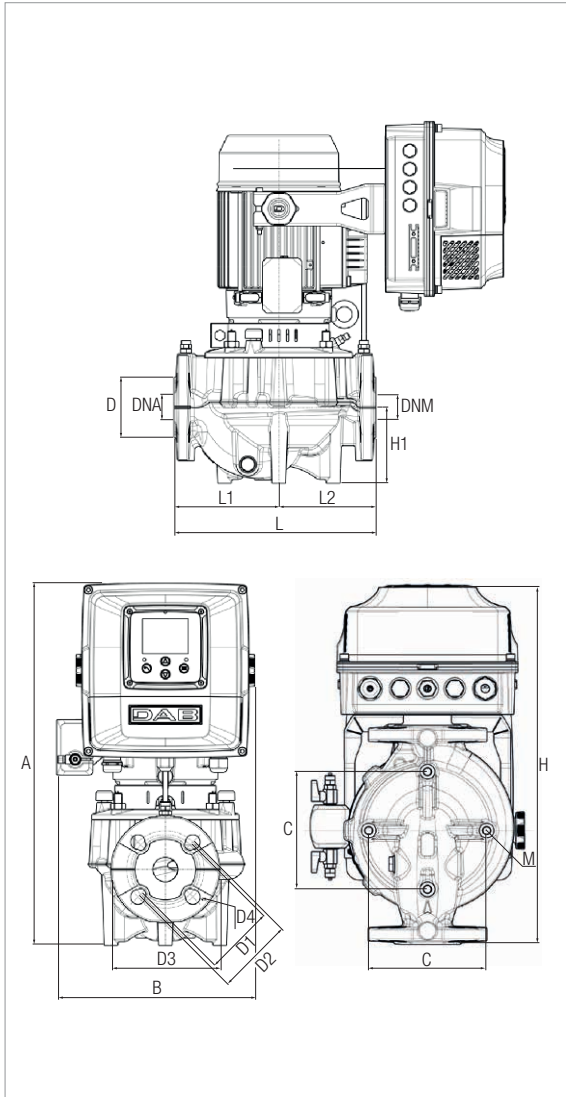
The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA							
	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 HZ	P1 MAX [kW]	P2 NOMINAL		In [A]	
					kW	HP	230 V	400 V
CP2E 40-2800 IE3	320	DN 40 PN 16	400	4,4	3	4,0	-	7,2
CP2E 40-3300 IE3				5,6	4	5,4	-	9,2
CP2-GE 40-4000 IE3				7,1	5,5	7,4	-	10,8
CP2-GE 40-5000 IE3	440			13,2	7,5	10,1	-	19,7
CP2-GE 40-6600 IE3				17,3	11	14,8	-	26,2
CP2-GE 40-8200 IE3				20,5	15	20,1	-	31,8

MODEL	A	B	B1	B2	C1	D	D1	S1	D2	S2	D3	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
	L/A	L/B	H																					
CP2E 40-2800 IE3	355	270	130,6	130,6	180	88	110	20	100	20	150	726	95	320	168	152	10	40	40	680	430	1084	0,32	48,9
CP2E 40-3300 IE3	355	270	130,6	130,6	180	88	110	20	100	20	150	726	95	320	168	152	10	40	40	680	430	1084	0,32	47,9
CP2-GE 40-4000 IE3	355	270	150	150	180	88	110	20	100	20	150	888,5	95	320	168	152	10	40	40	680	430	1084	0,32	82,6
CP2-GE 40-5000 IE3	440	360	180	180	250	88	110	20	100	20	150	965,5	99,5	440	220	220	10	40	40	708	588	1315	0,55	93
CP2-GE 40-6600 IE3	440	360	180	180	250	88	110	20	100	20	150	1088,5	99,5	440	220	220	10	40	40	708	588	1315	0,55	82,6
CP2-GE 40-8200 IE3	440	360	180	180	250	88	110	20	100	20	150	1088,5	99,5	440	220	220	10	40	40	708	588	1315	0,55	82,6

## CP2E - ELECTRONIC IN-LINE PUMPS

Liquid temperature range: from -15°C to +140°C - Maximum operating pressure: 16 bar (1600 kPa)



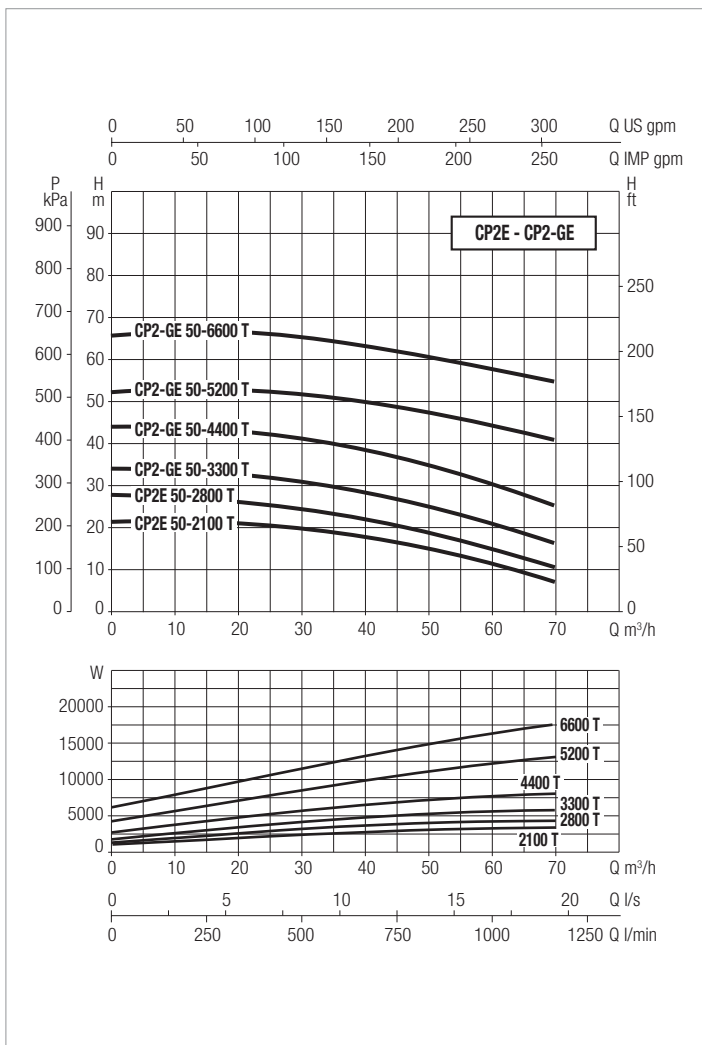
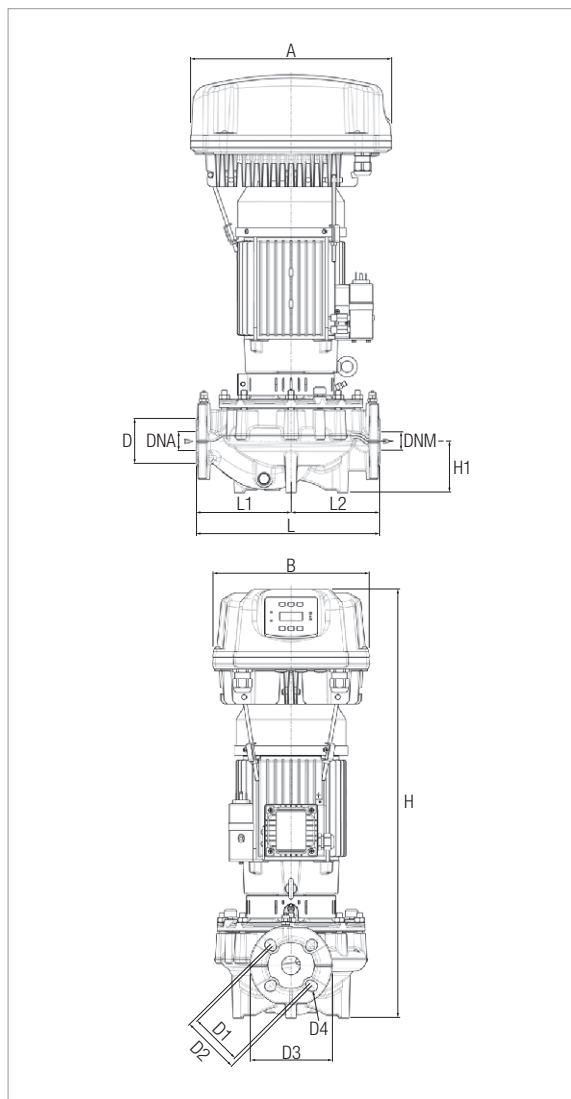
The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA							
	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 HZ	P1 MAX [kW]	P2 NOMINAL		In [A]	
					kW	HP	230 V	400 V
CP2E 50-800 IE5	280	DN 50 PN 16	230 V	0,93	0,5	0,7	4,1	-
CP2E 50-1100 IE5				1,5	0,7	0,9	6,9	-
CP2E 50-1400 IE5				2,2	1,5	2,0	10,1	-
CP2E 50-1800 IE5				3	2,2	3,0	-	4,9

MODEL	A	B	C	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																	L/A	L/B	H		
CP2E 50-800 IE5	438	255	100	90	110	125	165	18	431	73	280	140	140	10	50	50	600	300	640	0,12	32
CP2E 50-1100 IE5	508	256	100	90	110	125	165	18	435	73	280	140	140	10	50	50	600	300	640	0,12	32
CP2E 50-1400 IE5	508	256	100	90	110	125	165	18	435	73	280	140	140	10	50	50	600	300	640	0,12	39
CP2E 50-1800 IE5	508	256	100	90	110	125	165	18	435	73	280	140	140	10	50	50	600	300	640	0,12	39

# CP2E, CP2-GE - ELECTRONIC IN-LINE PUMPS

Liquid temperature range: from -15°C to +140°C - Maximum operating pressure: 16 bar (1600 kPa)



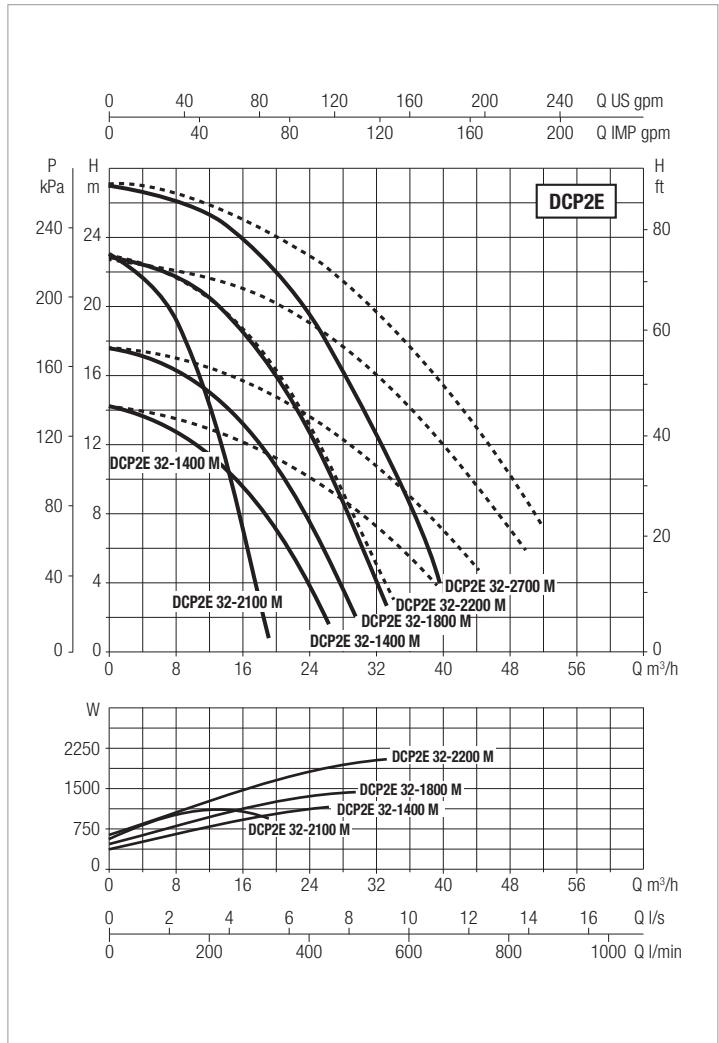
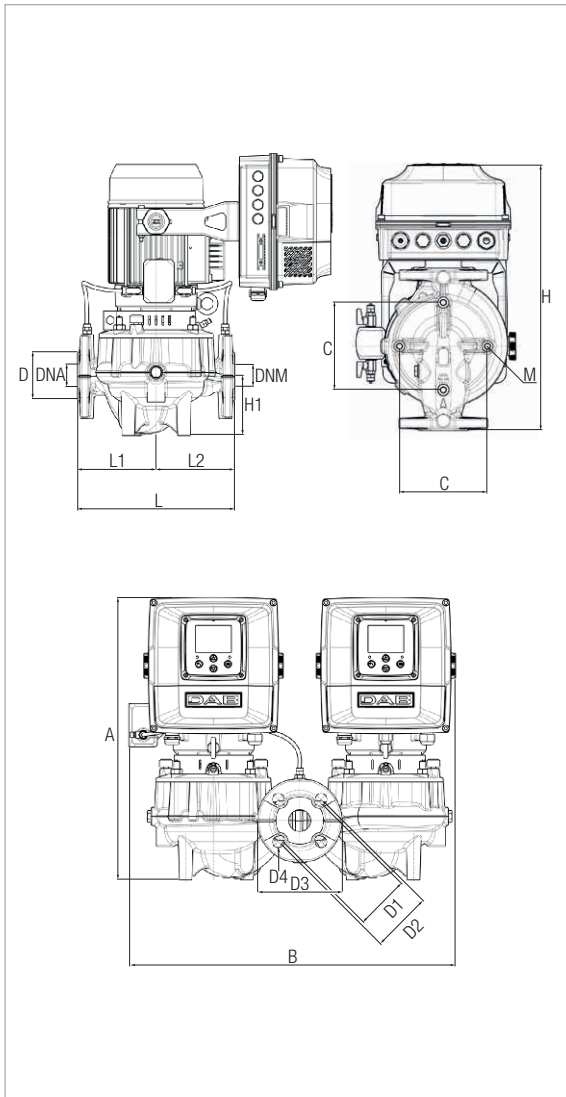
The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA							
	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 HZ	P1 MAX [kW]	P2 NOMINAL		In [A]	
					kW	HP	230 V	400 V
CP2E 50-2100 IE3	280	DN 50 PN 16	400 V	4,1	3	4,0	-	6,7
CP2E 50-2800 IE3	340			5,3	4	5,4	-	8,7
CP2-GE 50-3300 IE3				6,8	5,5	7,4	-	10,3
CP2-GE 50-4400 IE3				9,5	7,5	10,1	-	14,6
CP2-GE 50-5200 IE3				18	11	14,8	-	26,8
CP2-GE 50-6600 IE3	440			20,2	15	20,1	-	31,3

MODEL	A	B	B1	B2	C1	D	D1	S1	D2	S2	D3	DNA	DNM	H	H1	L	L1	L2	M	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																				L/A	L/B	H		
CP2E 50-2100 IE3	355	270	112,3	96	100	90	125	23,3	110	18	165	50	50	681,5	73	280	140	140	10	680	430	1084	0,32	49
CP2E 50-2800 IE3	355	270	136,4	131,2	180	100	125	21,8	110	14	165	50	50	755	105	340	172,5	167,5	10	680	430	1084	0,32	49
CP2-GE 50-3300 IE3	355	270	136,4	131,2	180	100	125	21,8	110	14	165	50	50	971,5	105	340	172,5	167,5	10	680	430	1084	0,32	78
CP2-GE 50-4400 IE3	430	340	136,4	131,2	180	100	125	21,8	110	14	165	50	50	971,5	105	340	172,5	167,5	10	708	588	1315	0,55	80
CP2-GE 50-5200 IE3	440	369	189	180	180	100	125	21,8	110	14	165	50	50	1116	128,4	440	220	220	10	708	588	1315	0,55	152
CP2-GE 50-6600 IE3	440	369	189	180	180	100	125	21,8	110	14	165	50	50	1116	128,4	440	220	220	10	708	588	1315	0,55	152

## DCP2E - ELECTRONIC IN-LINE PUMPS

Liquid temperature range: from -15°C up to 140°C - Maximum operating pressure: 16 bar (1600 kPa)



The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

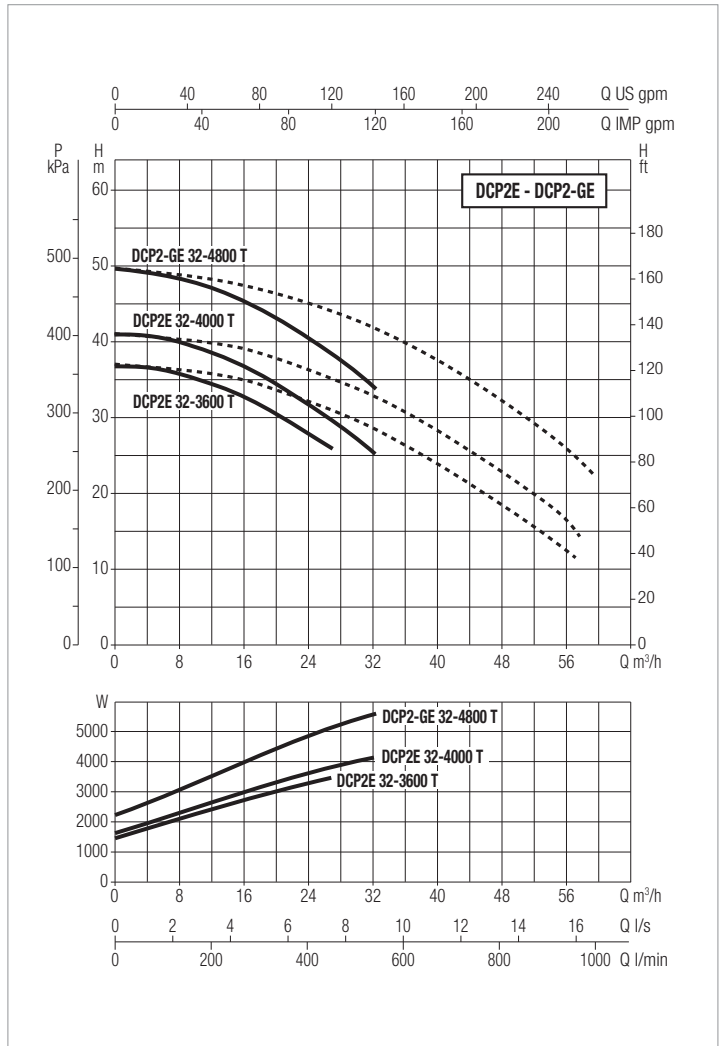
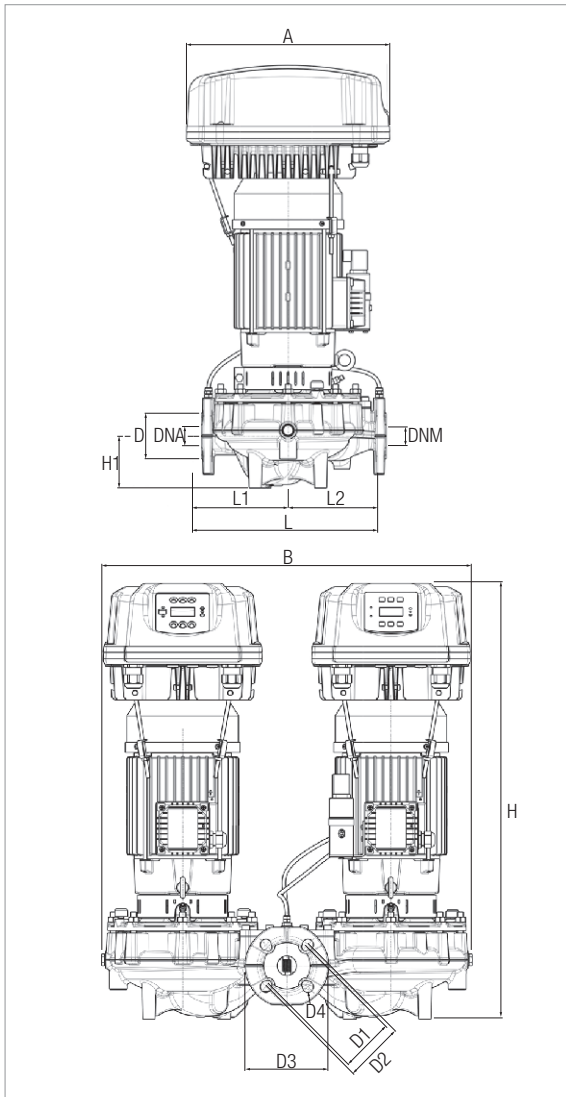
MODEL	ELECTRICAL DATA							
	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 HZ	P1 MAX [kW]	P2 NOMINAL		In [A]	
					kW	HP	230 V	400 V
DCP2E 32-1400 IE5	260	DN 32 PN 16 DN 32 PN 10	230 V	0,93	0,70	0,94	5,1	-
DCP2E 32-1800 IE5				1,5	1,10	1,48	6,64	-
DCP2E 32-2100 IE5				1,13	0,70	0,94	5	-
DCP2E 32-2200 IE5				2	1,50	2,01	8,8	-
DCP2E 32-2700 IE5	320		400 V	3,4	2,20	2,95	-	5,3

MODEL	A	B	C1	C2	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																		L/A	L/B	H		
DCP2E 32-1400 IE5	467	540	140	388	78	90	100	141	19	426	98	260	135	125	10	32	32	720	600	640	0,28	55
DCP2E 32-1800 IE5	467	540	140	388	78	90	100	141	19	426	98	260	135	125	10	32	32	720	600	640	0,28	55
DCP2E 32-2100 IE5	537	540	140	388	78	90	100	140	19	430	98	260	135	125	10	32	32	720	600	640	0,28	55
DCP2E 32-2200 IE5	537	540	140	388	78	90	100	140	19	430	98	260	135	125	10	32	32	720	600	640	0,28	77,5
DCP2E 32-2700 IE5	537	620	180	477	79	90	100	140	19	460	90	320	165	155	10	32	32	720	600	640	0,28	77,5



# DCP2E, DCP2-GE - ELECTRONIC IN-LINE PUMPS

Liquid temperature range: from -15°C to +140°C - Maximum operating pressure: 16 bar (1600 kPa)



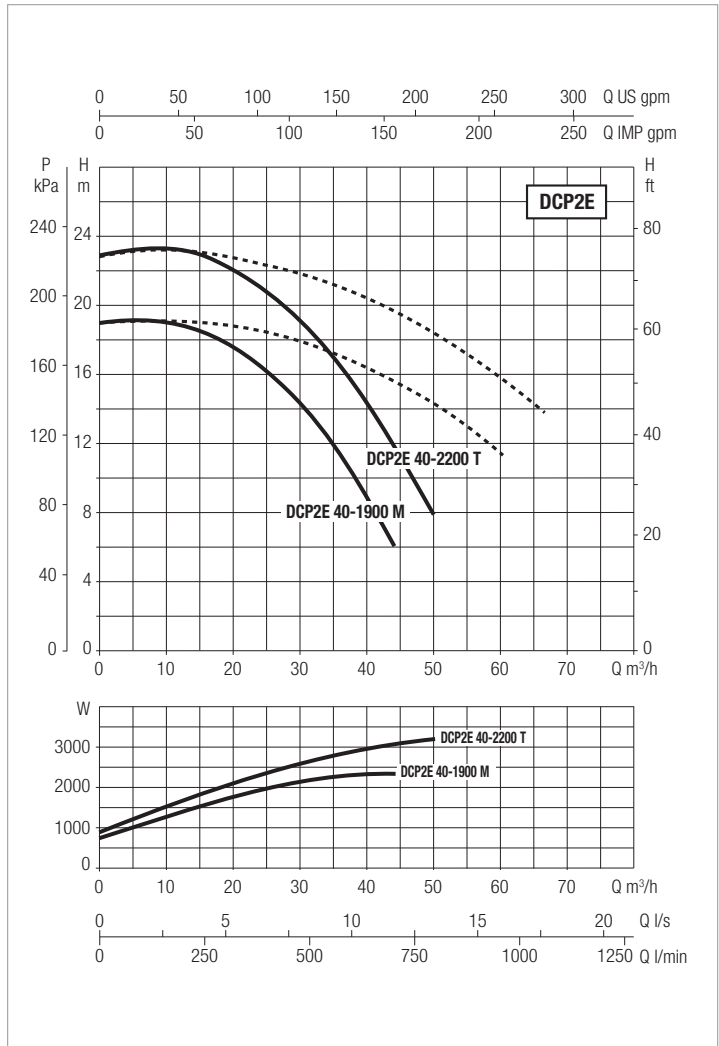
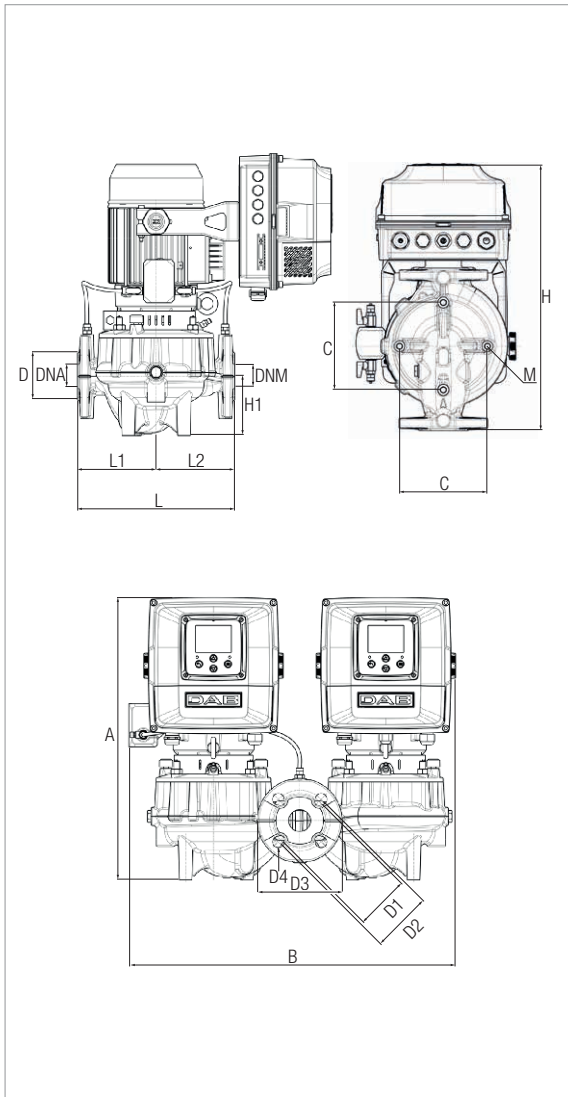
The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA							
	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 HZ	P1 MAX [kW]	P2 NOMINAL		In [A]	
					kW	HP	230 V	400 V
DCP2E 32-3600 IE3	320	DN 32 PN 16 DN 32 PN 10	400 V	5,6	3	4,02	-	8,90
DCP2E 32-4000 IE3				6,3	4	5,36	-	10,2
DCP2-GE 32-4800 IE3				8,3	5,50	7,38	-	12,5

MODEL	A	B	D	D1	D2	D3	D4	DNA	DNM	H	H1	L	L1	L2	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
															L/A	L/B	H		
DCP2E 32-3600 IE3	355	622	78	100	90	140	-	32	32	730	90	320	150	170	680	430	1084	0,32	52,7
DCP2E 32-4000 IE3	355	622	78	100	90	140	-	32	32	730	90	320	150	170	680	430	1084	0,32	52,7
DCP2-GE 32-4800 IE3	355	622	78	100	90	140	-	32	32	884	90	320	150	170	680	430	1084	0,32	87,8

## DCP2E - ELECTRONIC IN-LINE PUMPS

Liquid temperature range: from -15°C up to 140°C - Maximum operating pressure: 16 bar (1600 kPa)



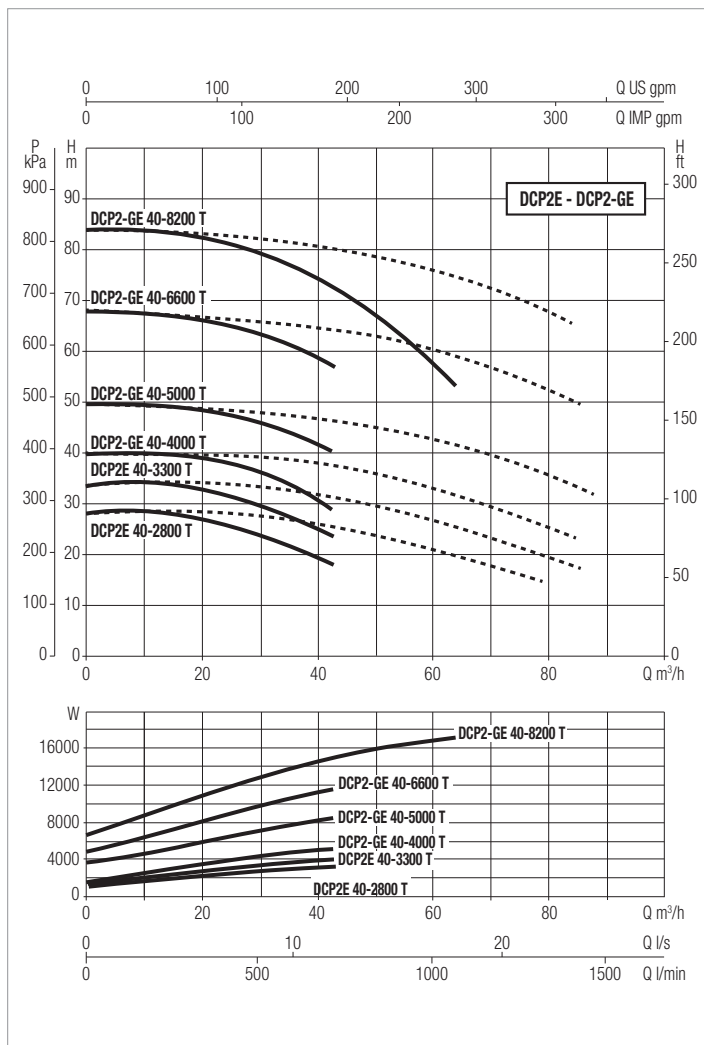
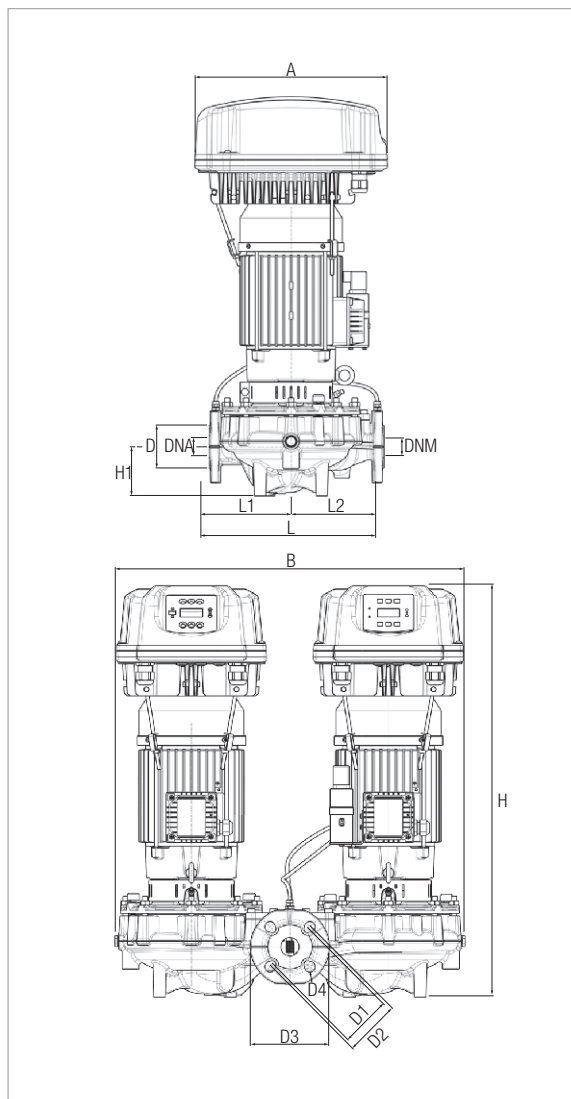
The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA							
	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 HZ	P1 MAX [kW]	P2 NOMINAL		In [A]	
					kW	HP	230 V	400 V
DCP2E 40-1900 IE5	320	DN 40 PN 16	230 V	2,00	1,5	2,0	8,90	-
DCP2E 40-2200 IE5			400 V	3,30	2,2	3,0	-	5,30

MODEL	A	B	C1	C2	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																		L/A	L/B	H		
DCP2E 40-1900 IE5	533	620	180	478	89	100	110	150	19	463	95	320	168	152	10	40	40	720	600	640	0,28	80,5
DCP2E 40-2200 IE5	533	620	180	478	89	100	110	150	19	463	95	320	168	152	10	40	40	720	600	640	0,28	80,5

# DCP2E, DCP2-GE - ELECTRONIC IN-LINE PUMPS

Liquid temperature range: from -15°C to +140°C - Maximum operating pressure: 16 bar (1600 kPa)



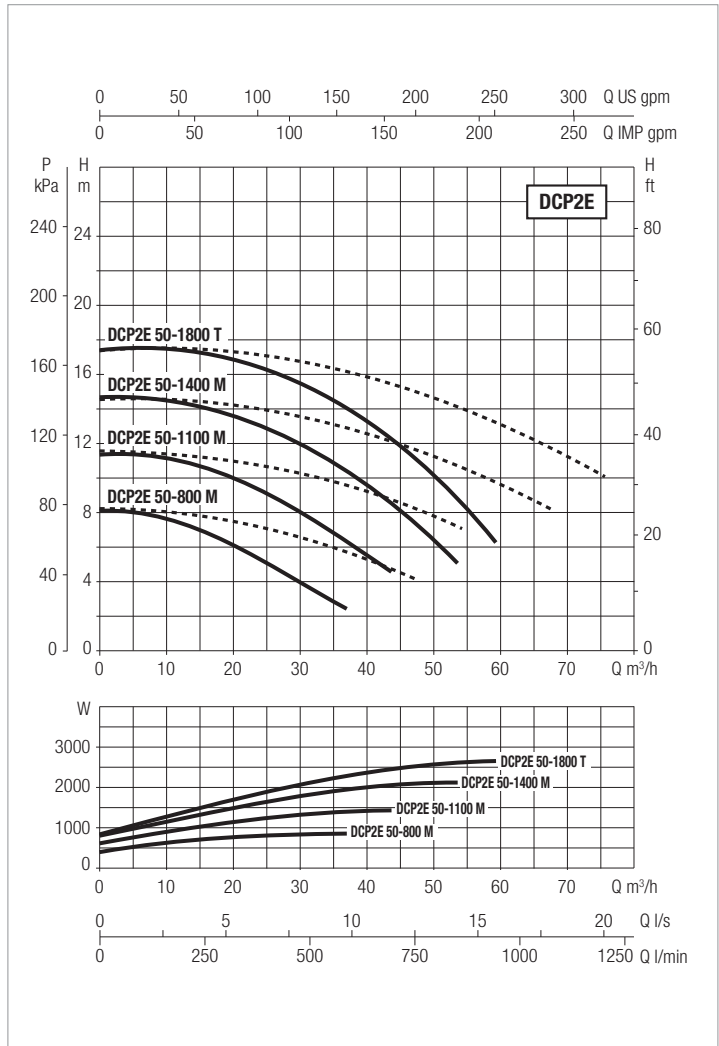
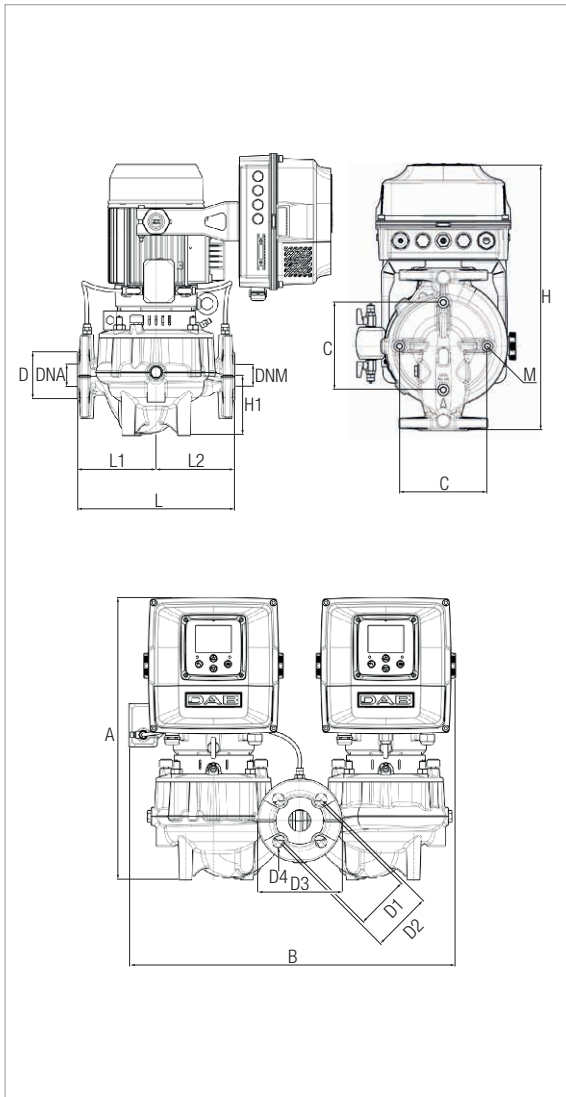
The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA							
	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 HZ	P1 MAX [kW]	P2 NOMINAL		In [A]	
					kW	HP	230 V	400 V
DCP2E 40-2800 IE3	320	DN 40 PN 16	400 V	4,4	3	4,0	-	7,2
DCP2E 40-3300 IE3				5,6	4	5,4	-	9,2
DCP2-GE 40-4000 IE3				7,1	5,5	7,4	-	10,8
DCP2-GE 40-5000 IE3				13,2	7,5	10,1	-	19,7
DCP2-GE 40-6600 IE3				17,3	11	14,8	-	26,2
DCP2-GE 40-8200 IE3				20,5	15	20,1	-	31,8

MODEL	A	B	D	D1	D2	D3	D4	DNA	DNM	H	H1	L	L1	L2	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
															L/A	L/B	H		
DCP2E 40-2800 IE3	355	622	88	110	100	150	-	40	40	726	95	320	170	150	680	430	1084	0,32	100,7
DCP2E 40-3300 IE3	355	622	88	110	100	150	-	40	40	726	95	320	170	150	680	430	1084	0,32	100,7
DCP2-GE 40-4000 IE3	355	622	88	110	100	150	-	40	40	888,5	95	320	170	150	970	848	1234	1,02	217,2
DCP2-GE 40-5000 IE3	430	770	88	110	100	150	-	40	40	965,5	99,5	440	240	200	970	848	1234	1,02	217,2
DCP2-GE 40-6600 IE3	430	770	88	110	100	150	-	40	40	1088,5	99,5	440	240	200	970	848	1234	1,02	303,2
DCP2-GE 40-8200 IE3	430	770	88	110	100	150	-	40	40	1088,5	99,5	440	240	200	970	848	1234	1,02	303,2

## DCP2E - ELECTRONIC IN-LINE PUMPS

Liquid temperature range: from -15°C to +140°C - Maximum operating pressure: 16 bar (1600 kPa)



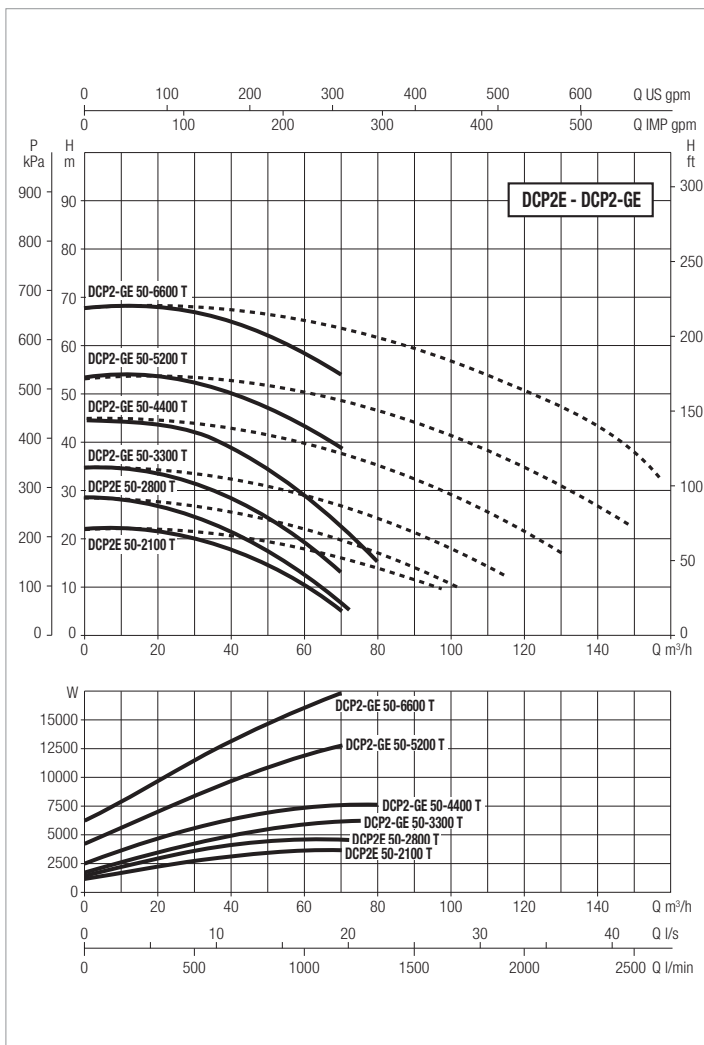
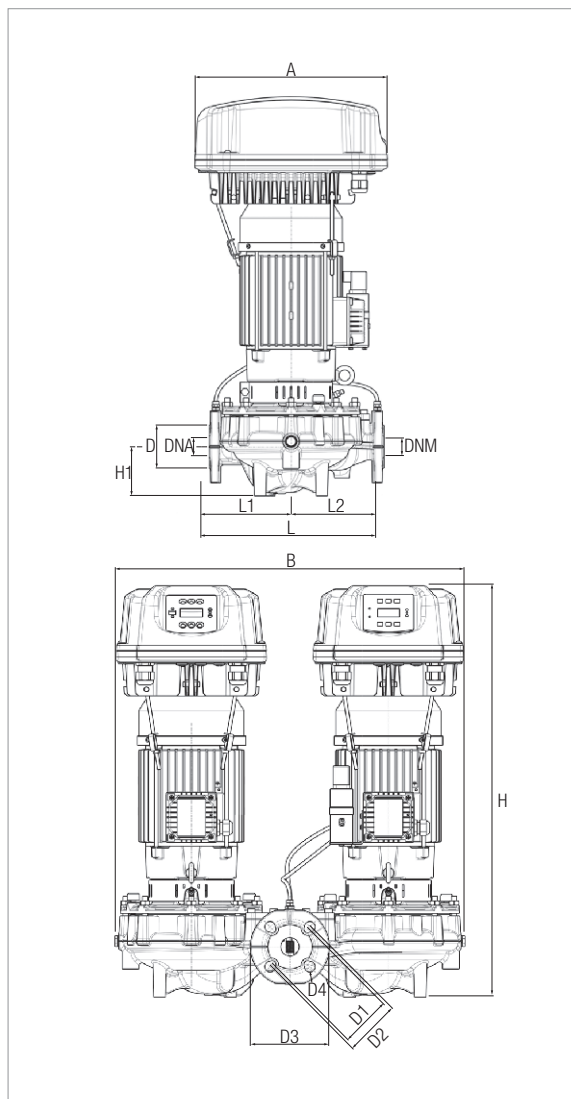
The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA							
	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 HZ	P1 MAX [kW]	P2 NOMINAL		In [A]	
					kW	HP	230 V	400 V
DCP2E 50-800 IE5	280	DN 50 PN 16	230 V	0,93	0,5	0,7	4,1	-
DCP2E 50-1100 IE5				1,5	0,7	0,9	6,9	-
DCP2E 50-1400 IE5				2,2	1,5	2,0	10,1	-
DCP2E 50-1800 IE5				3	2,2	3,0	-	4,9

MODEL	A	B	C1	C2	D	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																		L/A	L/B	H		
DCP2E 50-800 IE5	438	555	100	392	90	110	125	165	18	431	73	280	140	140	10	50	50	720	600	640	0,28	54
DCP2E 50-1100 IE5	508	555	100	392	90	110	125	165	18	435	73	280	140	140	10	50	50	720	600	640	0,28	54
DCP2E 50-1400 IE5	508	555	100	392	90	110	125	165	18	435	73	280	140	140	10	50	50	720	600	640	0,28	68
DCP2E 50-1800 IE5	508	555	100	392	90	110	125	165	18	435	73	280	140	140	10	50	50	720	600	640	0,28	68

# DCP2E, DCP2-GE - ELECTRONIC IN-LINE PUMPS

Liquid temperature range: from -15°C to +140°C - Maximum operating pressure: 16 bar (1600 kPa)



The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA							
	CENTRE DISTANCE	PUMP CONNECTIONS	POWER INPUT 50 HZ	P1 MAX [kW]	P2 NOMINAL		In [A]	
					kW	HP	230 V	400 V
DCP2E 50-2100 IE3	280	DN 50 PN 16	400 V	4,1	3	4,0	-	6,7
DCP2E 50-2800 IE3	340			5,3	4	5,4	-	8,7
DCP2-GE 50-3300 IE3				6,8	5,5	7,4	-	10,3
DCP2-GE 50-4400 IE3				9,5	7,5	10,1	-	14,6
DCP2-GE 50-5200 IE3				440	18	11	14,8	-
DCP2-GE 50-6600 IE3	20,2				15	20,1	-	31,3

MODEL	A	B	D	D1	D2	D3	D4	DNA	DNM	H	H1	L	L1	L2	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
															L/A	L/B	H		
DCP2E 50-2100 IE3	355	570	90	125	110	165	-	50	50	682	73	280	133	147	680	430	1084	0,32	49
DCP2E 50-2800 IE3	355	730	100	125	110	165	-	50	50	755	105	340	190	150	680	430	1084	0,32	49
DCP2-GE 50-3300 IE3	355	730	100	125	110	165	-	50	50	971,5	105	340	190	150	680	430	1084	0,32	78
DCP2-GE 50-4400 IE3	430	860	100	125	110	165	-	50	50	971,5	105	340	190	150	708	588	1315	0,55	80
DCP2-GE 50-5200 IE3	440	869	100	125	110	165	-	50	50	1116	128,4	440	230	210	708	588	1315	0,55	152
DCP2-GE 50-6600 IE3	440	869	100	125	110	165	-	50	50	1116	128,4	440	230	210	708	588	1315	0,55	152

# CME /CM-GE / DCME / DCM-GE

## ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

**D CONNECT** ▶ PAGE 129



### TECHNICAL DATA

**Flow rate (range):** up to 360 m<sup>3</sup>/h

**Head:** up to 34 m

**Type of pumped liquid:** clean, free from solid or abrasive substances, non-viscous, non-aggressive, non-crystallized

**Glycol percentage (maximum):** 30%

**Liquid temperature (range):** from -10°C to +140°C

**Maximum ambient temperature:** +40°C (on request up to +50°C)

**Operation pressure (maximum):** 16 bar / 1600 kPa

**Flanging or threading:** flange from DN 65 to DN 150 PN 16

**Motor protection class:** IP 55

**Motor insulation class:** F

**Impeller material:** cast iron

**Single phase power input:** 230 V 50 Hz

**Three phase power input:** 3x230 V 50 Hz / 3x400 V 50 Hz

**Type of installation:** fixed in horizontal position or vertical with motor in up position

Electronic in-line pumps for water circulation in air conditioning and heating systems, water recirculation in the presence of solar thermal panels (solar collectors) and for circulation of drinkable hot water in commercial building service. Twin version are the one with the D letter. Possibility of remote control thanks to the DConnect service (DConnect Box supplied separately).

### CONSTRUCTION FEATURES OF THE PUMP

Suction and delivery ports are flanged with threaded connectors for control gauges. Pump body and motor support in cast iron, impeller in cast iron or technopolymer depending on the model. Standardized mechanical seal according to DIN 24960 in carbon-silicon carbide with EPDM OR rings. Counter flanges on request: DN 65, DN 80, DN 100, DN 125, DN 150 with PN 16.

### CONSTRUCTION FEATURES OF THE MOTOR

Air-cooled four-pole asynchronous motor with AISI 304 stainless steel motor shaft.

### CONSTRUCTION FEATURES OF THE ELECTRONIC

MCE-C variable frequency drive installed as standard for greater pump operating efficiency. It is equipped with a display for configuration and control. MEC-C is settable in pressure regulation mode, differentiates constant, constant curve, constant curve with external analogue signal, with the proportional differential pressure. The variable frequency drive allows energy savings and protection against water hammer. It must be mounted on the motor fan cover to take advantage of the cooling. It is possible to connect two MCE-C variable frequency drive together (through a special connection cable, supplied separately) for the creation of twin units. Compatibility with the DConnect service (DConnect Box supplied separately).

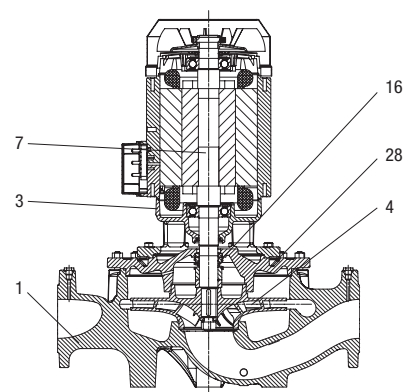
# CME /CM-GE / DCME / DCM-GE

ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

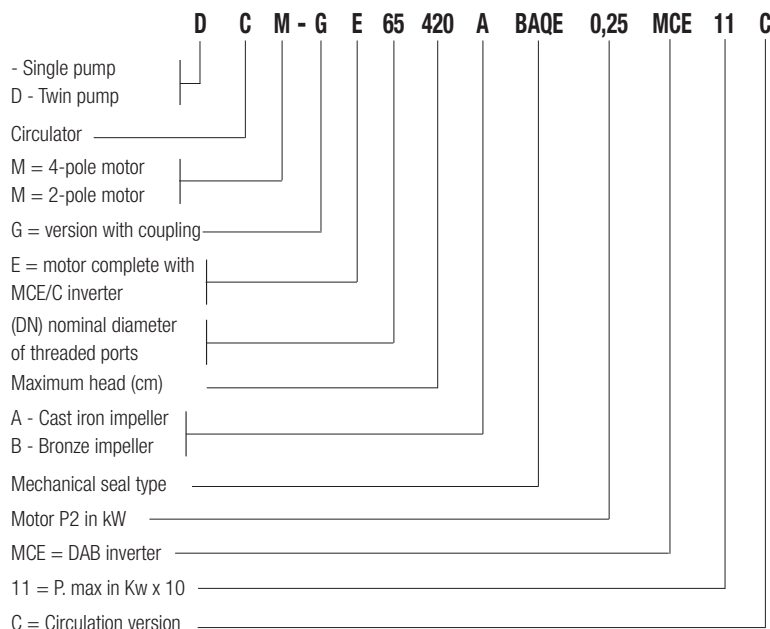
## MATERIALS

N.	PARTS	MATERIALS
1	PUMP BODY	CAST IRON 250 UNI ISO 185
3	SUPPORT	CAST IRON 250 UNI ISO 185
4	IMPELLER	CAST IRON 250 UNI ISO 185
7	SHAFT WITH ROTOR	AISI 303 STAINLESS STEEL X5 CrNiS 1809 UNI 6900/71
16	MECHANICAL SEAL	CARBON/GRAPHITE
28	OR RING	EPDM RUBBER

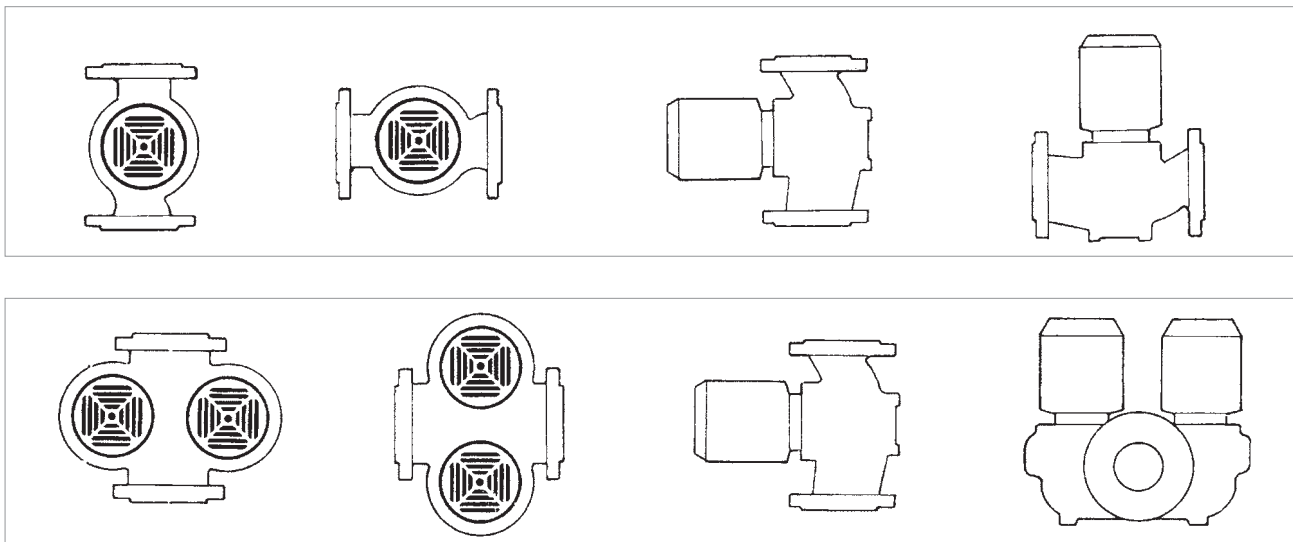
\* In contact with the liquid



### - Legend: (example)



**Installation: horizontal or vertical position, provided that the motor is always above the pump.**



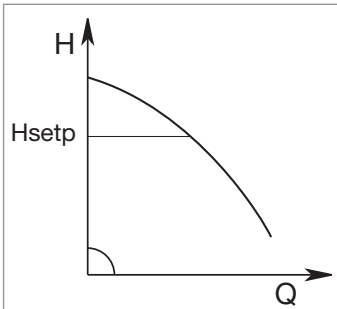
## MCE/C INVERTER

### MODES OF OPERATION

All the functions listed below can be consulted by the users (including less experienced ones) by simply scrolling through the MCE/C menu. The calibration and the modification of the parameters are protected, and can only be completed by expert users.

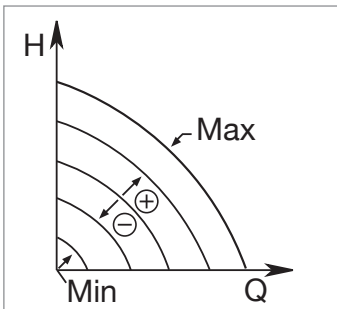
#### 1 - $\Delta P$ -c constant differential pressure adjustment mode

The  $\Delta P$ -c adjustment mode keeps the differential pressure of the system constantly at the H (setp) value set, even in case of variation of the flow rate. This is the standard adjustment used. It can be set directly from the MCE/C control panel. The inverter keeps the differential pressure (H setp) constant even in case of flow variation.



This adjustment is particularly indicated for the following systems:

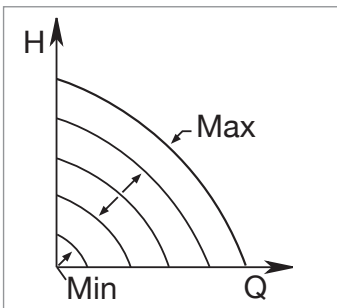
- a. two-pipe heating systems with thermostat valves**
- b. underfloor heating systems with thermostat valves**
- c. single-pipe heating systems with thermostat valves and calibration valves**
- d. systems with primary circuit pumps**



#### 2 - Constant curve adjustment modes

##### 2.1 - Constant curve adjustment

The rotation speed is kept at a constant number of revolutions. This rotation speed can be set between a minimum value and the nominal frequency of the circulation pump (e.g. between 15 Hz and 50 Hz). This mode can be set using the control panel on the MCE cover.

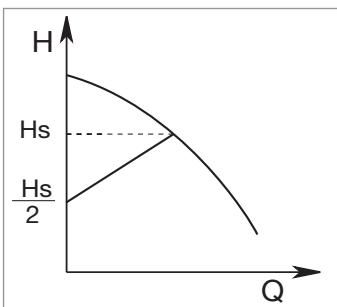


##### 2.2 - Adjustment of the constant curve with external analogue signal

The rotation speed is kept at a constant number of revolution in proportion with the voltage of the external analogue signal.

The rotation speed changes in a linear way, between the nominal frequency of the pump when  $V_{in} = 10$  V, and the minimum frequency when  $V_{in} = 0$  V.

This mode can be set using the control panel on the MCE cover.



#### 3 - $\Delta P$ -v \* proportional differential pressure adjustment mode

With  $\Delta P$ -v adjustment mode, with the variation of the flow rate, the value of the delivery of the head also varies in a linear manner, from Hsetp to Hsetp/2.

\* in order to know the availability of the function on specific models contact our customer service.

For more information refer to the technical appendix.



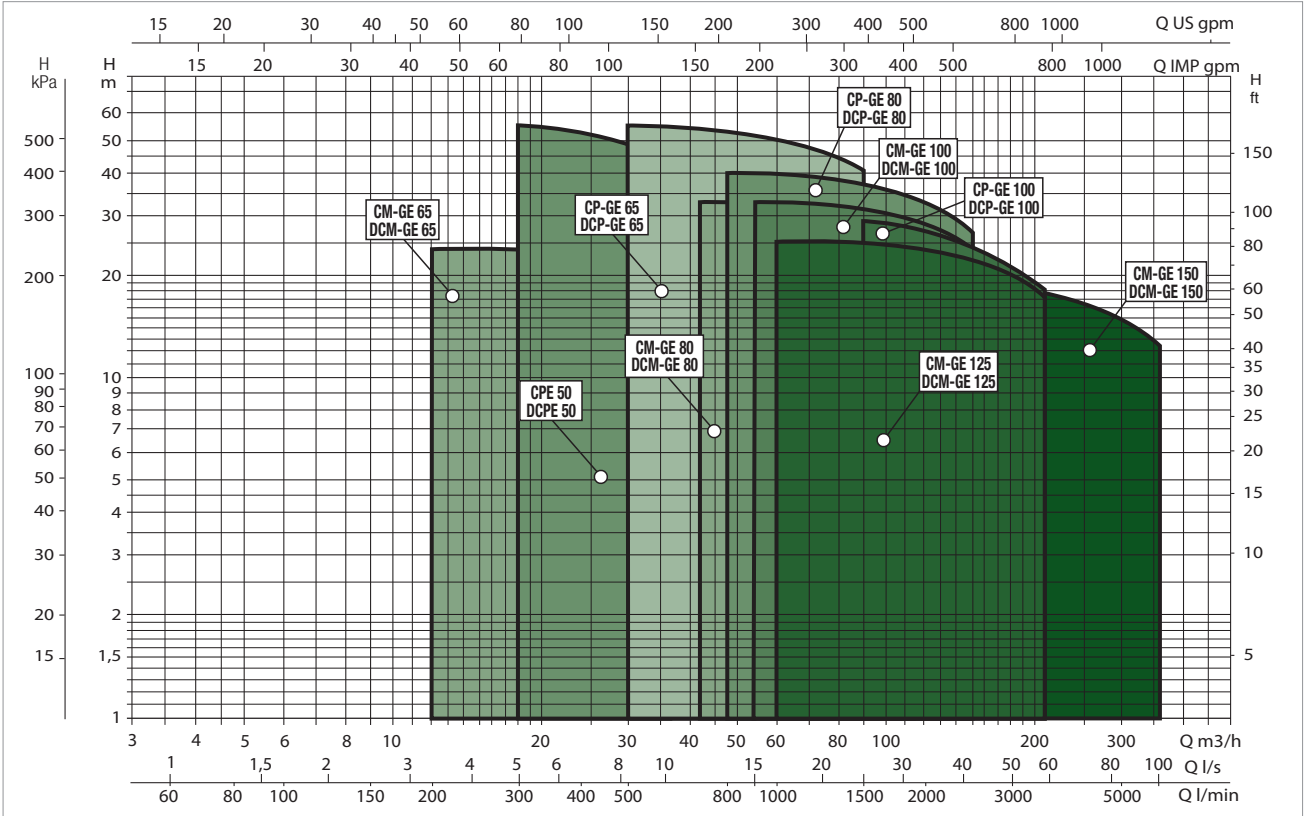
# ELECTRIC IN-LINE PUMPS

## ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

### PERFORMANCE RANGE

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

### GRAPHIC SELECTION TABLE



### SELECTION TABLE - CME / CM-GE - 4 POLES

MODEL	P2 NOMINAL		Q= m <sup>3</sup> /h Q= l/min	0	1,2	2,4	3	3,6	4,5	4,8	6	12	18	24	30	36	42	48	54
	kW	HP		0	20	40	50	60	75	80	100	200	300	400	500	600	700	800	900
CM-GE 65-660	0,55	0,8	H (m)	6,6	-	-	-	-	-	-	6,5	6,2	5,7	4,8	-	-	-	-	-
CM-GE 65-920	0,75	1		9,2	-	-	-	-	-	-	9,2	9	8,4	7,4	5,7	-	-	-	-
CM-GE 65-1200	1,5	2		12	-	-	-	-	-	-	-	12	11,9	11,5	10,8	10,1	8,9	-	-
CM-GE 65-1680	3	4		16,8	-	-	-	-	-	-	-	16,8	16,5	16,1	15,5	14,6	13,6	12,4	10,9
CM-GE 65-2380	4	5,5		23,8	-	-	-	-	-	-	-	24	23,8	23,4	22,7	21,6	20,4	19	17,1

# CME /CM-GE / DCME / DCM-GE

## ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

### SELECTION TABLE - CME / CM-GE - 4 POLES

MODEL	P2 NOMINAL		Q= m <sup>3</sup> /h Q= l/min	0	12	18	24	30	36	42	48	54	60	66	72	78	84	90	102	114	
	kW	HP		0	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1700	1900	
CM-GE 80-650	0,75	1	H (m)	6,5	6,3	6,1	5,8	5,5	5	4,5	3,9	-	-	-	-	-	-	-	-	-	
CM-GE 80-890	1,5	2		8,9	-	8,8	8,7	8,6	8,3	8	7,6	7,2	6,6	6	-	-	-	-	-	-	-
CM-GE 80-1530	3	4		15,3	-	-	15,4	15,3	15	14,6	14,1	13,5	12,9	12,2	11,3	-	-	-	-	-	-
CM-GE 80-1700	4	5,5		17	-	-	17,2	17,2	17,1	16,8	16,5	16,2	15,7	15,1	14,3	13,6	12,6	-	-	-	-
CM-GE 80-2410	5,5	7,5		24,1	-	-	23,8	23,6	23,3	22,8	22,3	21,5	20,8	19,7	18,6	17,3	-	-	-	-	-
CM-GE 80-2700	7,5	10		27	-	-	-	-	-	26	25,5	25	24,5	23,6	22,7	21,5	20,2	19	-	-	-
CM-GE 80-3420	11	15		34,2	-	-	-	-	-	33,2	33	32,5	32	31,5	30,7	29,8	29	28	25	25	21,7

MODEL	P2 NOMINAL		Q= m <sup>3</sup> /h Q= l/min	0	12	18	24	30	36	42	48	54	60	66	72	78	84	90	102	114	120	150	180	210	240	250	270	330	360	
	kW	HP		0	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1700	1900	2000	2500	3000	3500	4000	4167	4500	5500	6000	
CM-GE 100-510	0,75	1	H (m)	5,1	4,9	4,8	4,7	4,7	4,4	4,2	3,8	3,4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
CM-GE 100-865	2,2	3		8,6	-	-	-	8,3	8,2	8,1	7,9	7,7	7,5	7,3	7,1	6,8	6,5	6,2	5,6	4,8	-	-	-	-	-	-	-	-	-	-
CM-GE 100-1020	3	4		10,2	-	-	-	10,2	10,1	10	9,9	9,8	9,7	9,5	9,3	9	8,8	8,6	7,9	7,2	6,7	-	-	-	-	-	-	-	-	-
CM-GE 100-1320	4	5,5		13,2	-	-	-	-	13,2	13,2	13,1	12,9	12,7	12,4	12	11,7	11,3	10,4	9,3	8,7	-	-	-	-	-	-	-	-	-	-
CM-GE 100-1650	5,5	7,5		16,5	-	-	-	-	16,6	16,5	16,4	16,2	16,1	16	15,7	15,4	15	14,3	13,3	12,7	-	-	-	-	-	-	-	-	-	-
CM-GE 100-2050	7,5	10		20,5	-	-	-	-	21	21	21	20,7	20,5	20	19,8	19,5	19	18	16,7	16	-	-	-	-	-	-	-	-	-	-
CM-GE 100-2550	11	15		25,5	-	-	-	-	25,5	25,5	25,5	25,1	25	25	24,6	24,2	24	23	21,5	21	-	-	-	-	-	-	-	-	-	-
CM-GE 100-3290	15	20		32,9	-	-	-	-	-	-	33,1	33	32,9	32,8	32,4	32	31,6	30,5	29,5	28,9	24	-	-	-	-	-	-	-	-	-
CM-GE 125-1075	4	5,5		10,8	-	-	-	-	-	-	-	10,1	10,1	10	9,9	9,7	9,5	9,1	8,5	8,3	7	5,4	-	-	-	-	-	-	-	-
CM-GE 125-1270	5,5	7,5		12,7	-	-	-	-	-	-	-	12,6	12,6	12,5	12,5	12,4	12,3	12	11,5	11,4	10,1	8,5	-	-	-	-	-	-	-	-
CM-GE 125-1560	7,5	10		15,6	-	-	-	-	-	-	-	15,4	15,4	15,3	15,2	15,1	15	14,7	14,5	14,3	13,3	11,6	9,8	-	-	-	-	-	-	-
CM-GE 125-2100	11	15		21	-	-	-	-	-	-	-	21,5	21,5	21,5	21,4	21,2	21	20,9	20	19,8	18	16	-	-	-	-	-	-	-	-
CM-GE 125-2550	15	20		25,5	-	-	-	-	-	-	-	25,5	25,5	25,5	25,3	25,1	25,1	25	24,5	24	22,5	20,5	17,5	-	-	-	-	-	-	-
CM-GE 150-955	5,5	7,5		9,6	-	-	-	-	-	-	-	-	-	-	-	-	9,6	9,5	9,4	9,3	8,7	7,8	6,7	5,9	5,5	-	-	-	-	-
CM-GE 150-1322	7,5	10		13,2	-	-	-	-	-	-	-	-	-	-	-	-	13	12,8	12,6	12,5	11,9	11,1	10,1	8,9	8,5	-	-	-	-	-
CM-GE 150-1600	11	15		16	-	-	-	-	-	-	-	-	-	-	-	-	-	15,5	15,5	15,4	14,8	14	13	11,8	11	10,5	9,2	-	-	-
CM-GE 150-1950	15	20		19,5	-	-	-	-	-	-	-	-	-	-	-	-	-	19,5	19,4	19,3	19,2	18,7	17,8	16,8	16	15,5	14,1	12,5	-	-

# CME /CM-GE / DCME / DCM-GE

ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

## SELECTION TABLE - DCME / DCM-GE - 4 POLES

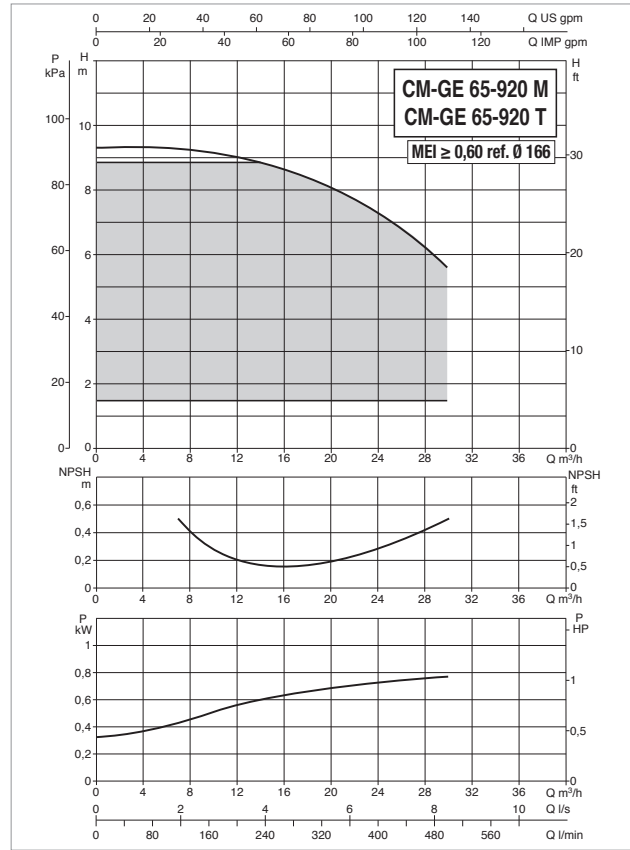
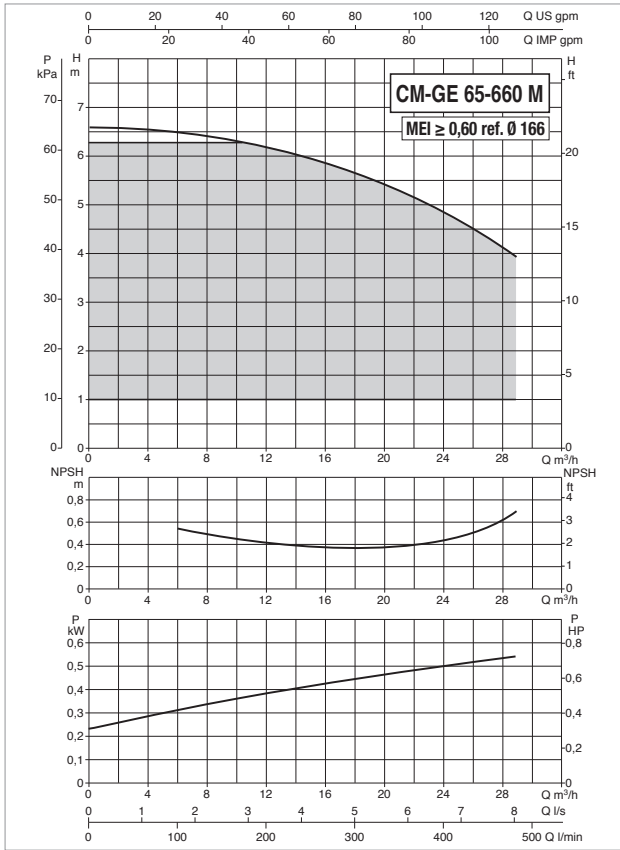
MODEL	P2 NOMINAL		Q= m³/h Q= l/min	0	3	4,5	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	102	114	120	150	
	kW	HP		0	50	75	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1700	1900	2000	2500	
DCM-GE 65-660	0,55	0,75	H (m)	6,5	-	-	6,4	5,9	4,4	3,1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
DCM-GE 65-920	0,75	1		9,1	-	-	9,1	8,8	7,4	5,8	3,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DCM-GE 65-1200	1,5	2		12	-	-	-	11,9	11,6	11	10	9	7,6	-	-	-	-	-	-	-	-	-	-	-	-	-
DCM-GE 65-1680	3	4		16,8	-	-	-	16,7	16,3	15,7	14,9	13,7	12,4	11	9,3	-	-	-	-	-	-	-	-	-	-	-
DCM-GE 65-2380	4	5,5		23,8	-	-	-	23,9	23,5	22,8	21,8	20,3	18,6	16,8	14,5	-	-	-	-	-	-	-	-	-	-	-
DCM-GE 80-650	0,75	1		6,5	-	-	-	6,2	5,8	5,2	4,5	3,7	2,9	2,1	-	-	-	-	-	-	-	-	-	-	-	-
DCM-GE 80-890	1,5	2		8,5	-	-	-	-	-	8,3	8	7,5	6,8	6,1	5,3	4,4	3,5	-	-	-	-	-	-	-	-	-
DCM-GE 80-1530	3	4		14,4	-	-	-	-	-	14,1	13,7	13	12,2	11,3	10,2	9,2	8	6,8	-	-	-	-	-	-	-	-
DCM-GE 80-1700	4	5,5		16	-	-	-	-	-	15,7	15,5	15,3	14,6	14	13,2	12,3	11,2	10	8,9	7,7	-	-	-	-	-	-
DCM-GE 80-2410	5,5	7,5		24,1	-	-	-	-	-	-	-	23,3	22,7	22	21,1	20,2	18,9	17,6	16,2	-	-	-	-	-	-	-
DCM-GE 80-2700	7,5	10		27	-	-	-	-	-	-	-	26,1	26,1	25,5	24,9	24,2	23,2	22,1	20,7	19,3	17,9	-	-	-	-	-
DCM-GE 80-3420	11	15		34,2	-	-	-	-	-	-	-	33,3	33,3	32,9	32,3	31,8	30,9	29,9	29	27,8	24,4	22	20,8	-	-	-
DCM-GE 100-510	0,75	1		4,9	-	-	-	4,8	4,7	4,6	4,5	4	3,7	3,2	2,6	2,1	-	-	-	-	-	-	-	-	-	-
DCM-GE 100-865	2,2	3		8,6	-	-	-	-	-	-	8,4	8,3	8,1	7,9	7,6	7,4	7,1	6,8	6,4	6	5,6	4,7	3,5	-	-	-
DCM-GE 100-1020	3	4		10,2	-	-	-	-	-	-	10,2	10	9,8	9,6	9,5	9,3	8,9	8,5	8	7,5	7,1	5,9	4,7	4	-	-
DCM-GE 100-1320	4	5,5		13,2	-	-	-	-	-	-	-	-	13,2	13,1	13	12,8	12,4	11,9	11,3	10,8	10,2	8,8	7,4	6,6	-	-
DCM-GE 100-1650	5,5	7,5		16,5	-	-	-	-	-	-	-	-	16,5	16,4	16,3	16	15,8	15,5	14,9	14,4	13,7	12,4	10,8	10	-	-
DCM-GE 100-2050	7,5	10		19,3	-	-	-	-	-	-	-	-	-	-	19,2	18,8	18,5	17,9	17,6	17,2	16,6	15,5	14,1	13,3	-	-
DCM-GE 100-2550	11	15		24	-	-	-	-	-	-	-	-	-	-	23,3	22,8	22,6	22,4	21,9	21,4	21	19,8	18,1	17,5	-	-
DCM-GE 100-3290	15	20		30,9	-	-	-	-	-	-	-	-	-	-	30,5	30,3	30,1	29,9	29,4	28,8	28,3	27	25,8	25,1	20	-

## SELECTION TABLE - DCM-GE - 4 POLES

MODEL	P2 NOMINAL		Q= m³/h Q= l/min	0	60	66	72	78	84	90	102	114	120	150	180	210	240	250	270	330	360			
	kW	HP		0	1000	1100	1200	1300	1400	1500	1700	1900	2000	2500	3000	3500	4000	4167	4500	5500	6000			
DCM-GE 125-1075	4	5,5	H (m)	10	9,5	9,4	9,2	9	8,7	8,4	7,7	6,8	6,5	4,4	2,4	-	-	-	-	-	-	-	-	
DCM-GE 125-1270	5,5	7,5		11,7	11,8	11,7	11,5	11,4	11,1	10,8	10,2	9,2	8,9	6,4	3,8	-	-	-	-	-	-	-	-	-
DCM-GE 125-1560	7,5	10		14,4	14,6	14,6	14,4	14,2	14	13,8	13,2	12,7	12,3	10,2	7,5	4,9	-	-	-	-	-	-	-	-
DCM-GE 125-2100	11	15		20,1	-	-	-	-	19,9	19,6	19,3	18,2	17,8	15,4	12,7	-	-	-	-	-	-	-	-	-
DCM-GE 125-2550	15	20		24,5	-	-	-	-	23,8	23,7	23,4	22,7	22,1	20	17,4	13,9	-	-	-	-	-	-	-	-
DCM-GE 150-955	5,5	7,5		9,6	-	-	-	-	-	-	-	-	-	8,1	7	6,2	4,9	3,5	2,8	-	-	-	-	-
DCM-GE 150-1322	7,5	10		11,8	-	-	-	-	-	11,5	11,5	11,4	11	10	8,5	7,2	6	5,5	-	-	-	-	-	-
DCM-GE 150-1600	11	15		14,8	-	-	-	-	-	-	14,2	14,2	14	13,4	12,5	11,4	10,1	9,4	8,8	-	-	-	-	-
DCM-GE 150-1950	15	20		18,1	-	-	-	-	-	-	17,9	17,8	17,7	17,5	16,9	15,9	14,8	14	13,5	10,5	8,9	-	-	-

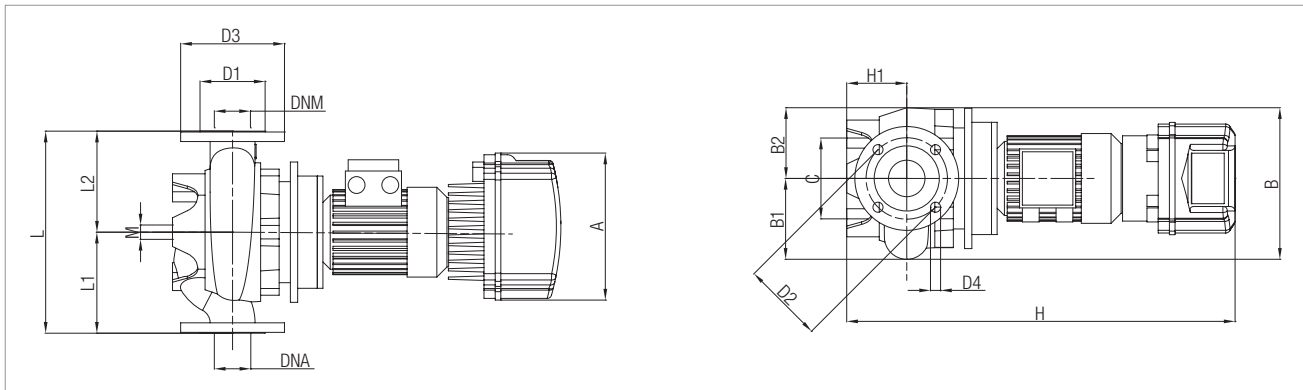
# CM-GE 65 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



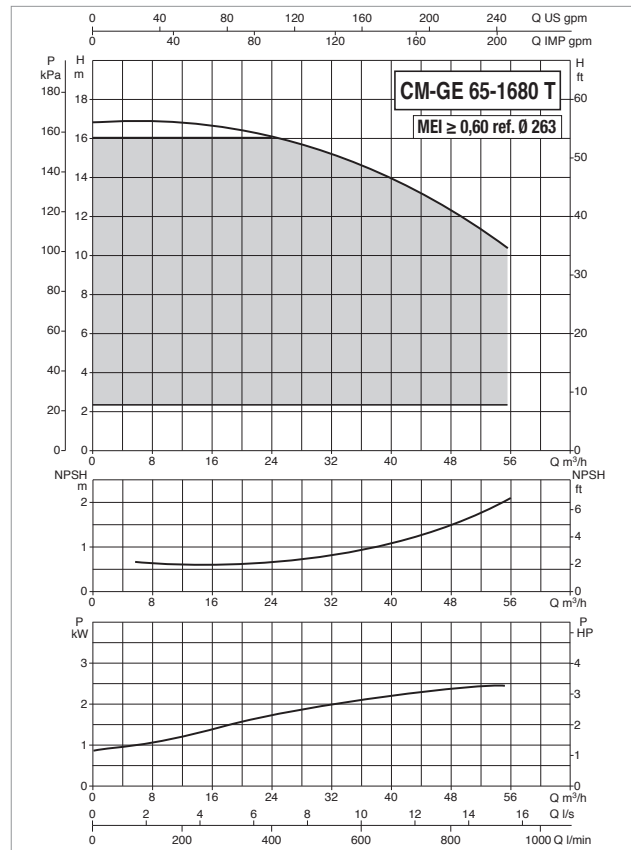
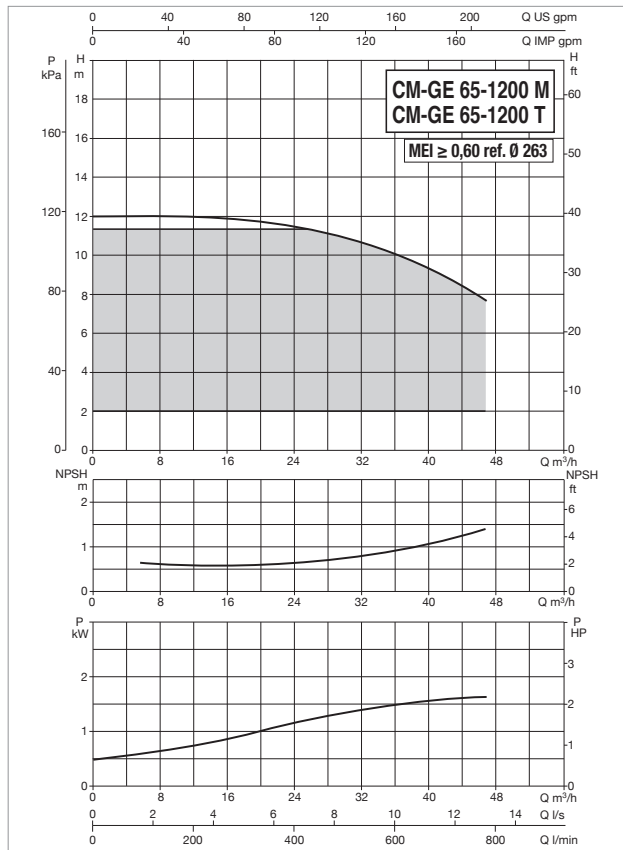
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CM-GE 65-660/A/BAQE/0,55 M MCE 11/C*	1 x 220-240 V ~	4	1400	0,84	0,55	0,8	7,3
CM-GE 65-920/A/BAQE/0,75 M MCE 11/C*	1 x 220-240 V ~	4	1430	1,23	0,75	1	9,8
CM-GE 65-920/A/BAQE/0,75 T MCE 30/C*	3 x 400 V ~	4	1430	1,23	0,75	1	1,8

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	DIMENSIONS																			PACKING DIMENSIONS	VOL (m <sup>3</sup> )	WEIGHT Kg					
	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N				Y	DNA	DNM		
	L/A	L/B	H																								
CM-GE 65-660/A/BAQE/0,55 M MCE 11/C	262	270	144	126	-	144	-	122	145	185	4x18	713	105	-	360	180	180	16	-	-	65	65	650	400	945	0,25	62
CM-GE 65-920/A/BAQE/0,75 M MCE 11/C	262	270	144	126	-	144	-	122	145	185	4x18	713	105	-	360	180	180	16	-	-	65	65	650	400	945	0,25	64
CM-GE 65-920/A/BAQE/0,75 T MCE 30/C	262	270	144	126	-	144	-	122	145	185	4x18	713	105	-	360	180	180	16	-	-	65	65	650	400	945	0,25	64

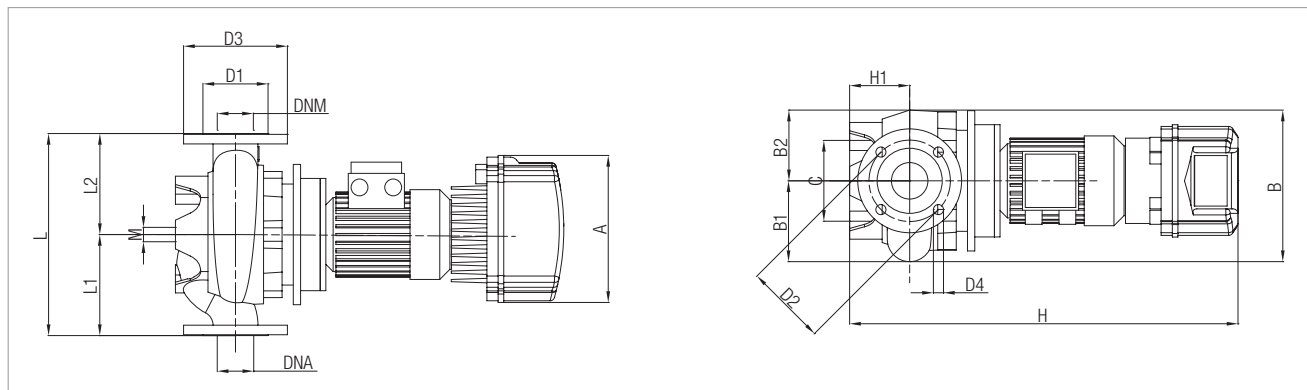
# CM-GE 65 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



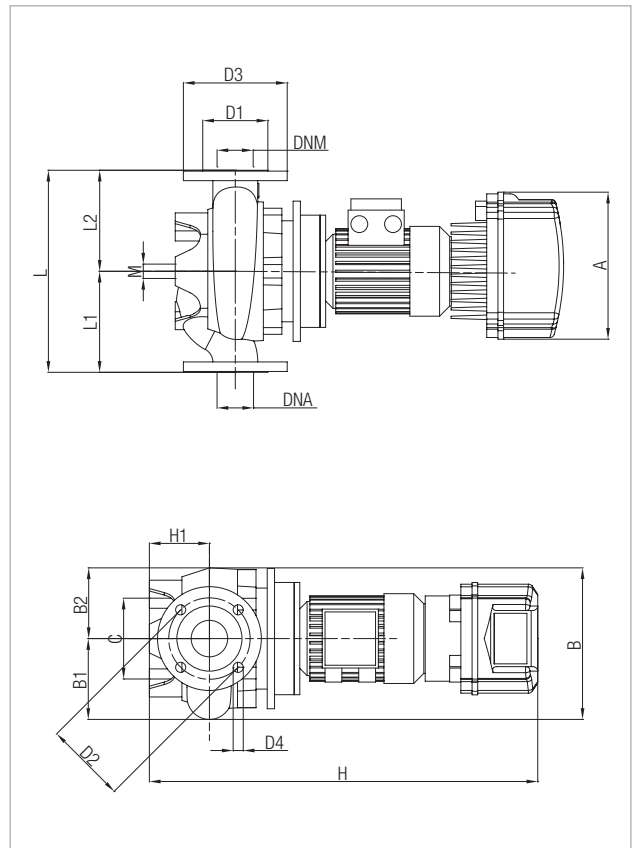
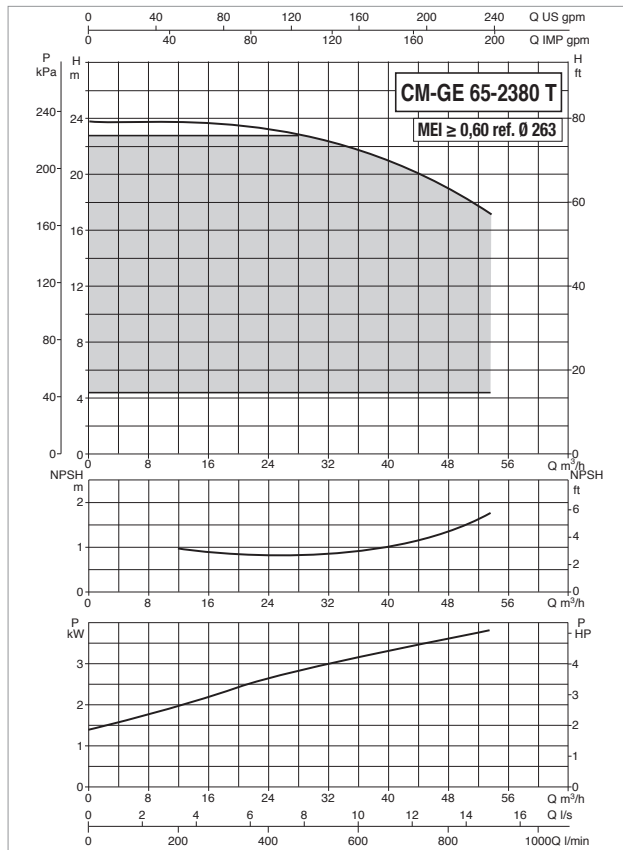
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CM-GE 65-1200/A/BAQE/1,5 T MCE 30/C*	3 x 400 V ~	4	1430	2,1	1,5	2	3,6
CM-GE 65-1200/A/BAQE/1,5 M MCE 11/C*	1 x 220-240 V ~	4	1430	1,87	1,5	2	13,9
CM-GE 65-1680/A/BAQE/3 T MCE 30/C*	3 x 400 V ~	4	1448	2,83	3	4	6,8

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	H																								
CM-GE 65-1200/A/BAQE/1,5 T MCE 30/C	262	344	180	164	-	144	-	122	145	185	4x18	764	125	-	475	237,5	237,5	16	-	-	65	65	650	400	945	0,25	91
CM-GE 65-1200/A/BAQE/1,5 M MCE 11/C	262	344	180	164	-	144	-	122	145	185	4x18	764	125	-	475	237,5	237,5	16	-	-	65	65	650	400	945	0,25	91
CM-GE 65-1680/A/BAQE/3 T MCE 30/C	353	344	180	164	-	144	-	122	145	185	4x18	821	125	-	475	237,5	237,5	16	-	-	65	65	650	400	945	0,25	101

# CM-GE 65 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

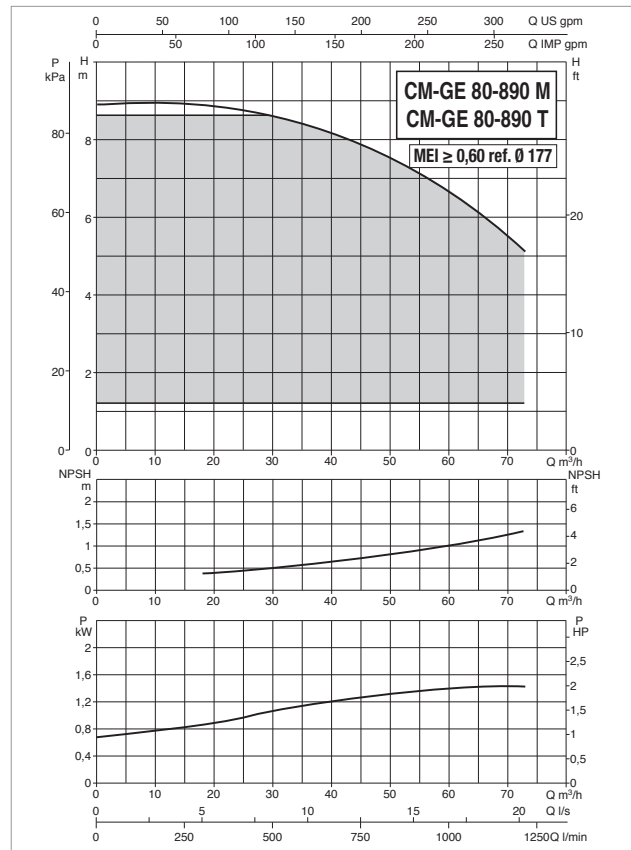
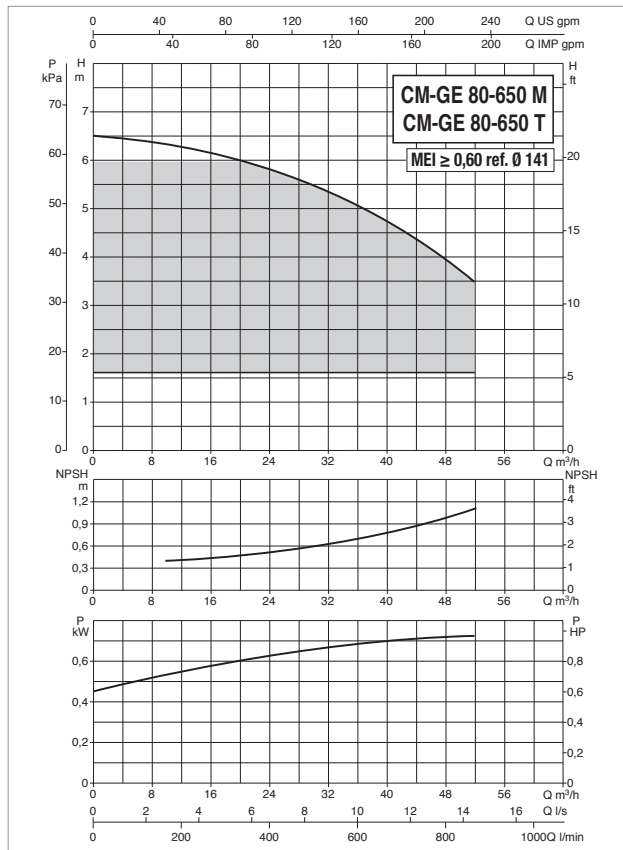
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CM-GE 65-2380/A/BAQE/4 T MCE 55/C*	3 x 400 V ~	4	1449	4,47	4	5,5	8,2

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	H	L/A	L/B	H																					
CM-GE 65-2380/A/BAQE/4 T MCE 55/C	353	344	180	164	-	144	-	122	145	185	4x18	821	125	-	475	237,5	237,5	16	-	-	65	65	650	400	945	0,25	115

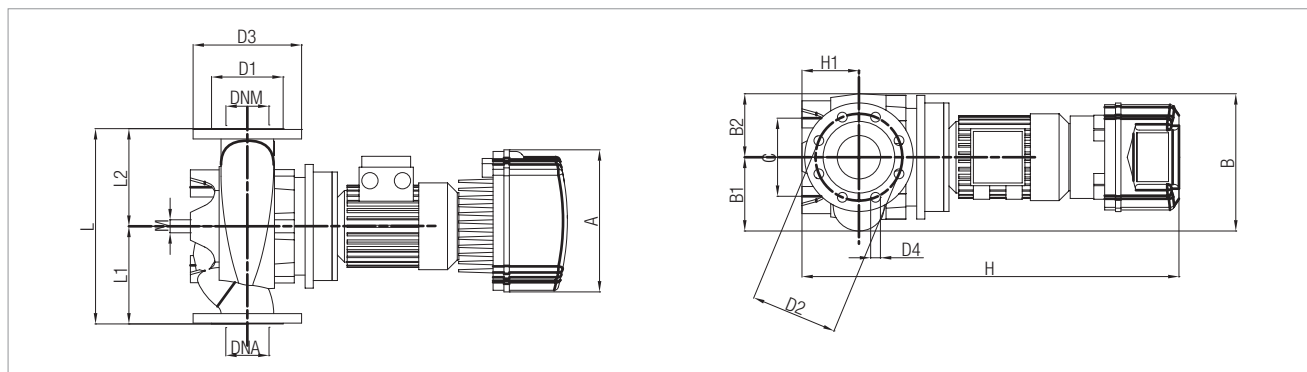
# CM-GE 80 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



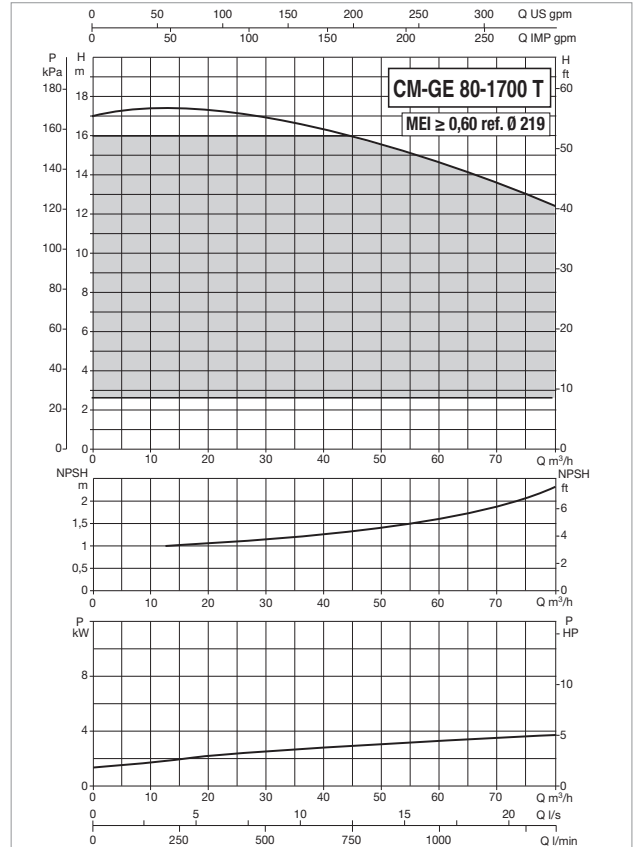
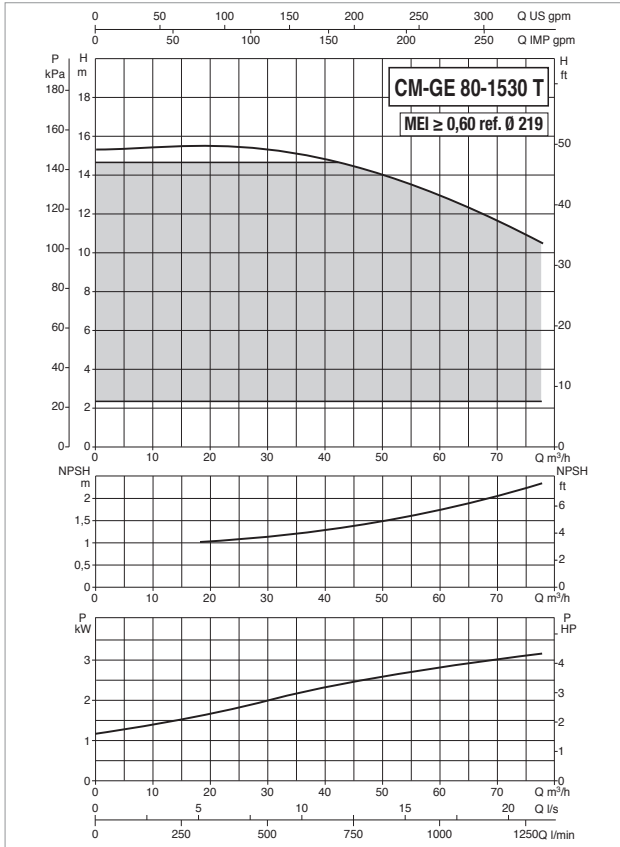
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CM-GE 80-650/A/BAQE/0,75 M MCE 11/C*	1 x 220-240 V ~	4	1430	1,24	0,75	1	9,8
CM-GE 80-650/A/BAQE/0,75 T MCE 30/C	3 x 400 V ~	4	1430	1,24	0,75	1	1,8
CM-GE 80-890/A/BAQE/1,5 T MCE 30/C*	3 x 400 V ~	4	1430	2,07	1,5	2	3,6
CM-GE 80-890/A/BAQE/1,5 M MCE 11/C*	1 x 220-240 V ~	4	1430	1,87	1,5	2	13,9

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
CM-GE 80-650/A/BAQE/0,75 M MCE 11/C	262	252	135	117	-	144	-	138	160	200	8x18	716	105	-	360	180	180	16	-	-	80	80	650	400	945	0,25	67
CM-GE 80-650/A/BAQE/0,75 T MCE 30/C	262	252	135	117	-	144	-	138	160	200	8x18	716	105	-	360	180	180	16	-	-	80	80	650	400	945	0,25	69,6
CM-GE 80-890/A/BAQE/1,5 T MCE 30/C	262	324	178	146	-	144	-	138	160	200	8x18	765	115	-	440	220	220	16	-	-	80	80	650	400	945	0,25	98
CM-GE 80-890/A/BAQE/1,5 M MCE 11/C	262	324	178	146	-	144	-	138	160	200	8x18	765	115	-	440	220	220	16	-	-	80	80	650	400	945	0,25	98

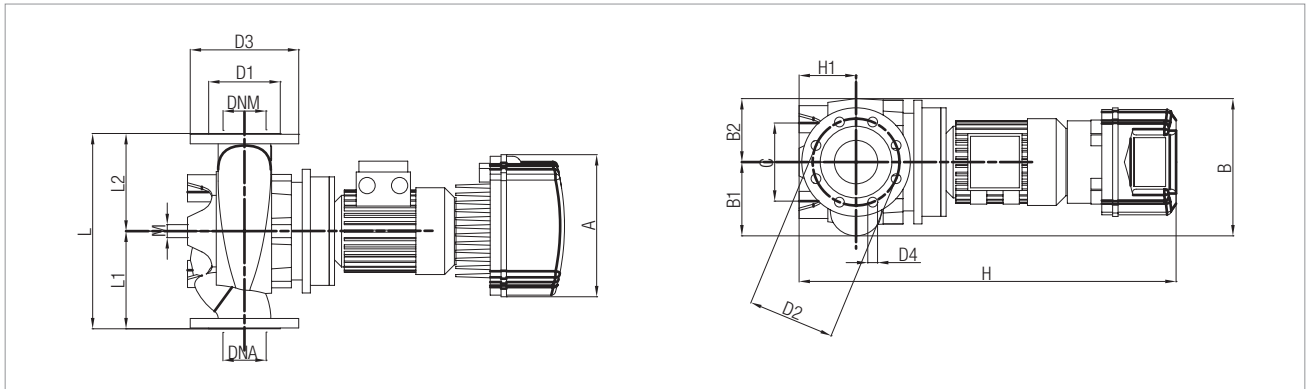
# CM-GE 80 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CM-GE 80-1530/A/BAQE/3 T MCE 30/C*	3 x 400 V ~	4	1441	3,74	3	4	6,8
CM-GE 80-1700/A/BAQE/4 T MCE 55/C*	3 x 400 V ~	4	1452	4,13	4	5,5	8,2

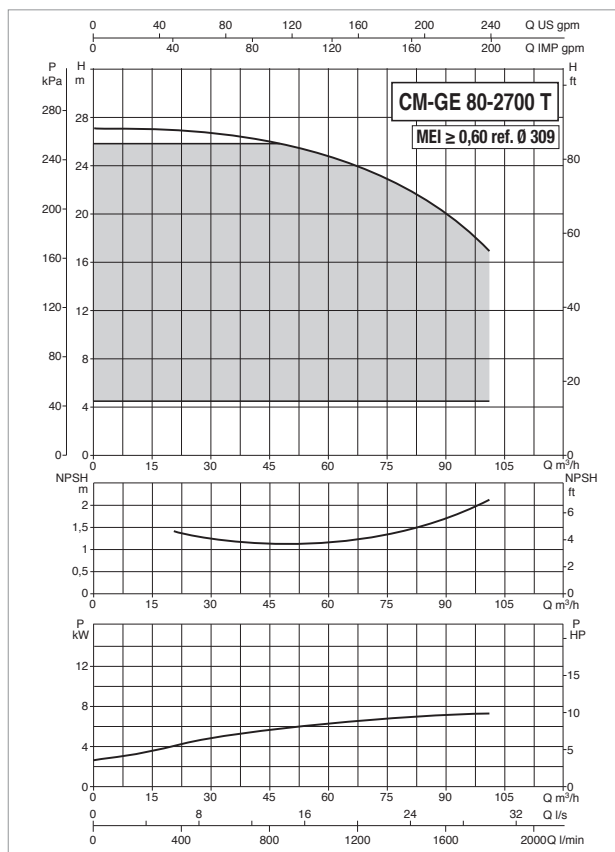
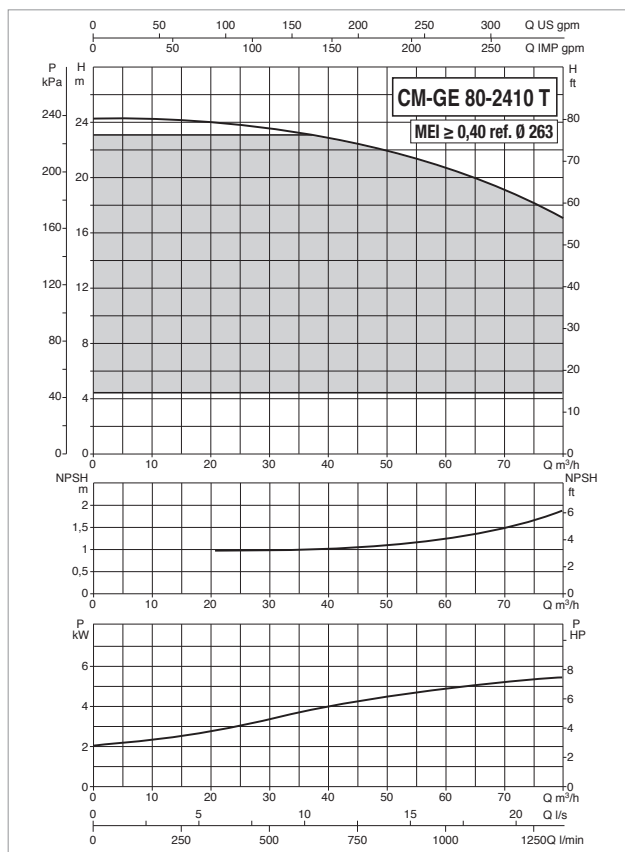
\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	H	L/A	L/B	H	L/A	L/B	H																		
CM-GE 80-1530/A/BAQE/3 T MCE 30/C	353	354	190	164	-	144	-	138	160	200	8x18	822	115	-	500	250	250	16	-	-	80	80	650	400	945	0,25	134
CM-GE 80-1700/A/BAQE/4 T MCE 55/C	353	354	190	164	-	144	-	138	160	200	8x18	822	115	-	500	250	250	16	-	-	80	80	650	400	945	0,25	147



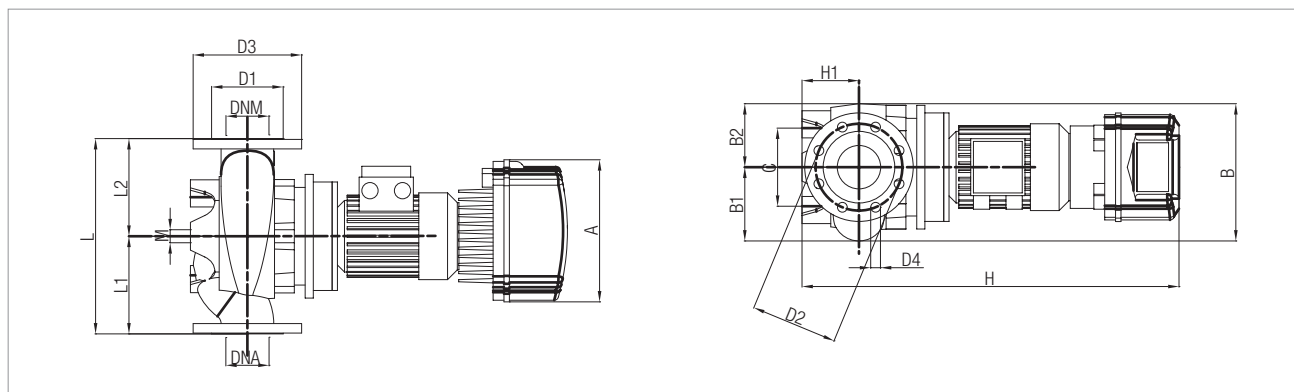
# CM-GE 80 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



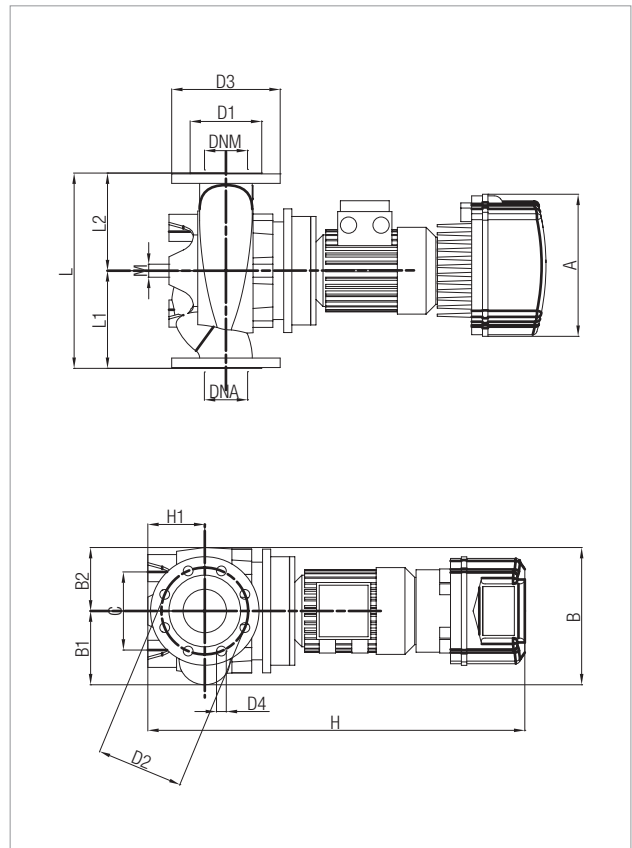
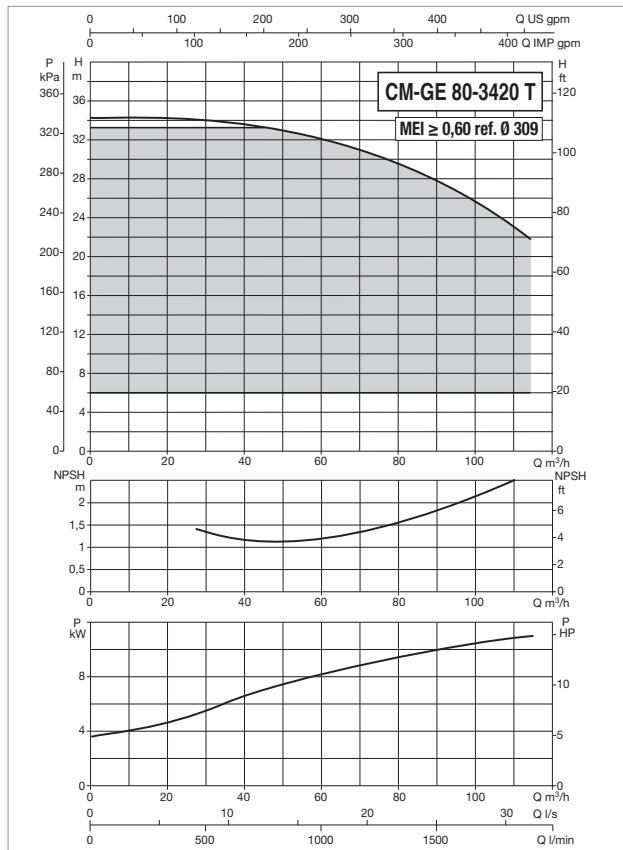
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CM-GE 80-2410/A/BAQE/5,5 T MCE 55/C*	3 x 400 V ~	4	1461	6,8	5,5	7,5	10,6
CM-GE 80-2700/A/BAQE/7,5 T MCE 110/C	3 x 400 V ~	4	1463	9,15	7,5	10	14,4

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
CM-GE 80-2410/A/BAQE/5,5 T MCE 55/C	353	469	245	224	-	230	-	138	160	200	8x18	1067	140	-	620	310	310	16	-	-	80	80	700	600	600	0,25	175
CM-GE 80-2700/A/BAQE/7,5 T MCE 110/C	426	469	245	224	-	230	-	138	160	200	8x18	1115	140	-	620	310	310	16	-	-	80	80	700	600	1220	0,51	205

# CM-GE 80 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

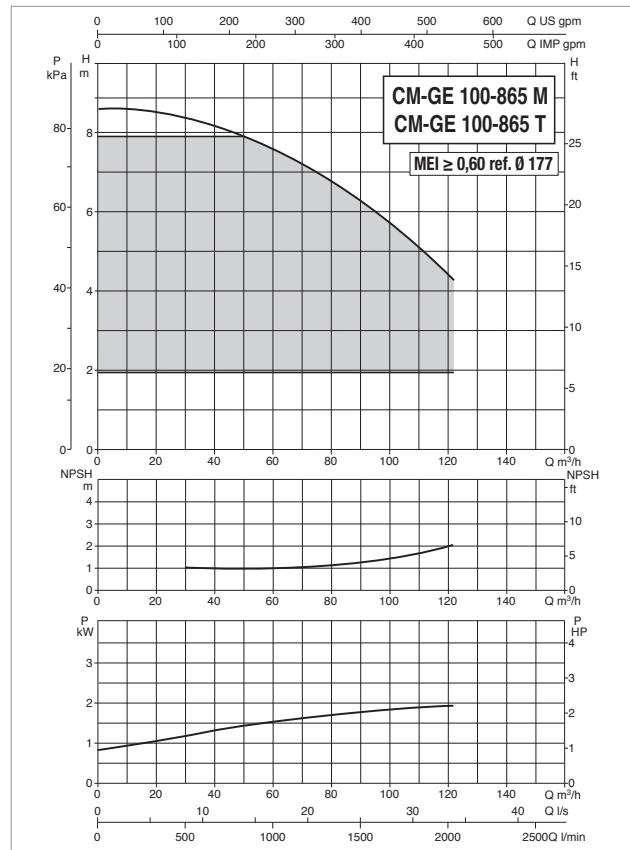
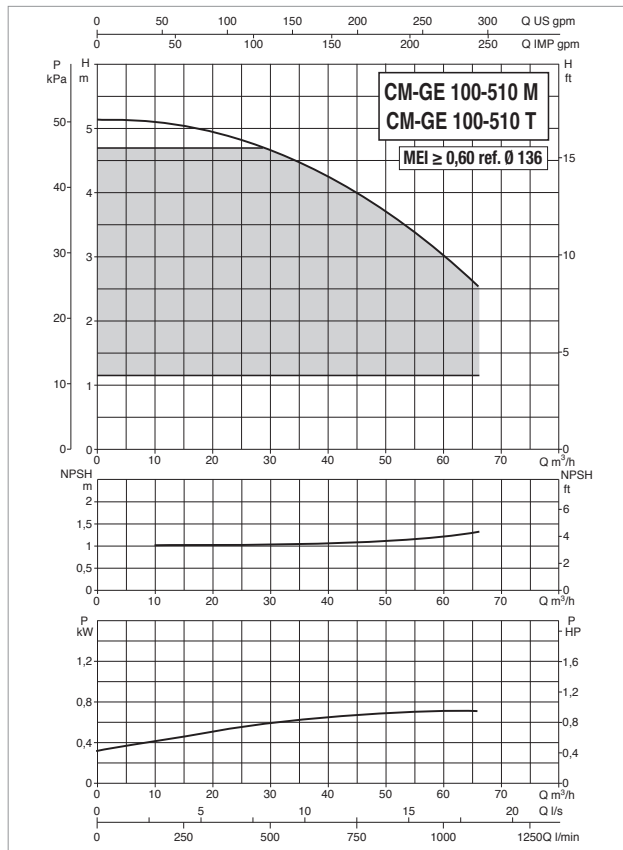
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CM-GE 80-3420/A/BAQE/11 T MCE 110/C*	3 x 400 V ~	4	1472	13,36	11	15	22,4

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	H																								
CM-GE 80-3420/A/BAQE/11 T MCE 110/C	426	469	245	224	-	230	-	138	160	200	8x18	1115	140	-	620	310	310	16	-	-	80	80	700	600	1220	0,51	222

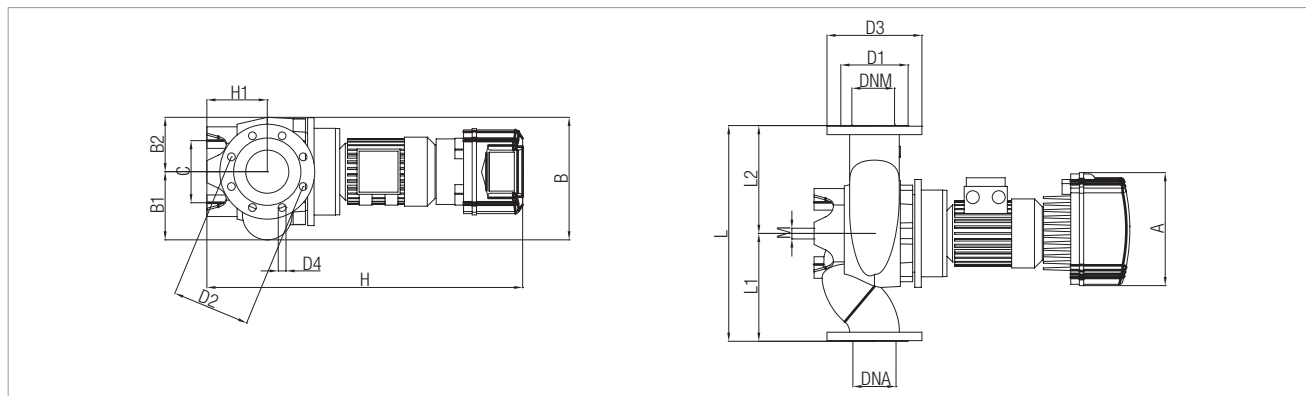
# CM-GE 100 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



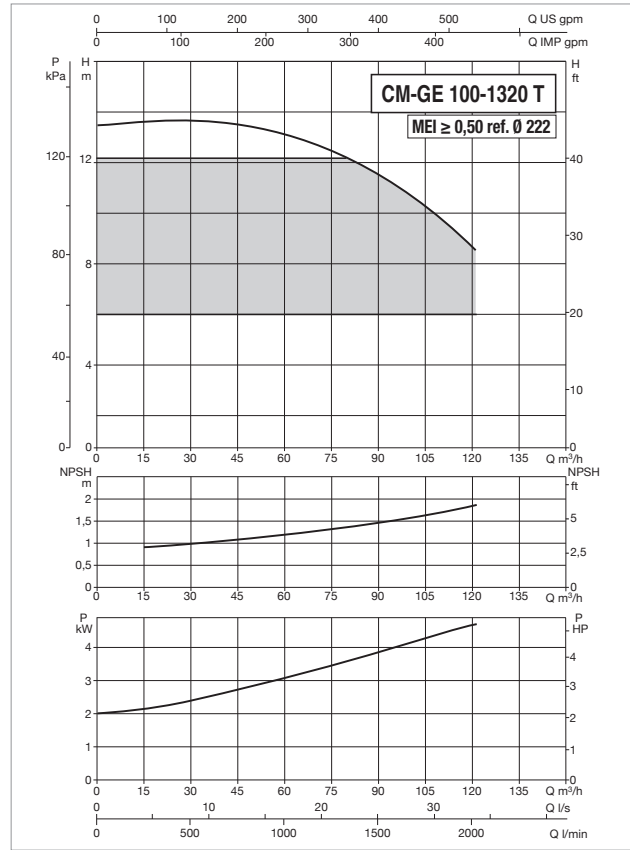
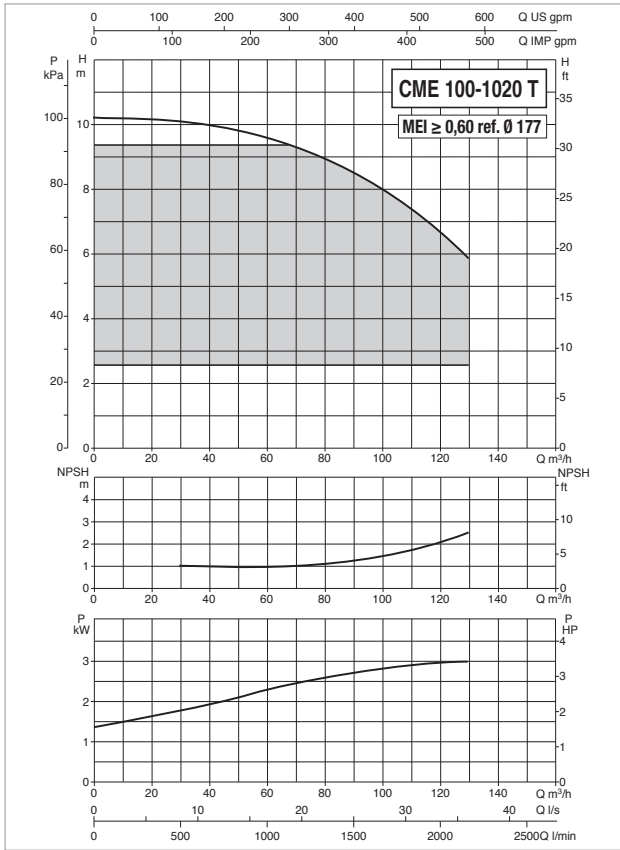
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CM-GE 100-510/A/BAQE/0,75 M MCE 11/C*	1 x 220-240 V ~	4	1430	1,21	0,75	1	9,7
CM-GE 100-510/A/BAQE/0,75 T MCE 30/C	3 x 400 V ~	4	1430	1,21	0,75	1	1,8
CM-GE 100-865/A/BAQE/2,2 M MCE 22/C*	1 x 220-240 V ~	4	1438	2,94	2,2	3	20,7
CM-GE 100-865/A/BAQE/2,2 T MCE 30/C*	3 x 400 V ~	4	1438	2,94	2,2	3	5,9

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
CM-GE 100-510/A/BAQE/0,75 M MCE 11/C	262	284	158	126	-	144	-	158	180	220	8x18	753	140	-	500	250	250	16	-	-	100	100	650	400	945	0,25	104
CM-GE 100-510/A/BAQE/0,75 T MCE 30/C	262	284	158	126	-	144	-	158	180	220	8x18	753	140	-	500	250	250	16	-	-	100	100	650	400	945	0,25	106,6
CM-GE 100-865/A/BAQE/2,2 M MCE 22/C	262	215	192	152	-	230	-	158	180	220	8x19	865	140	-	550	275	275	16	-	-	100	100	650	400	945	0,25	123
CM-GE 100-865/A/BAQE/2,2 T MCE 30/C	353	215	192	152	-	230	-	158	180	220	8x20	862	140	-	550	275	275	16	-	-	100	100	650	400	945	0,25	126

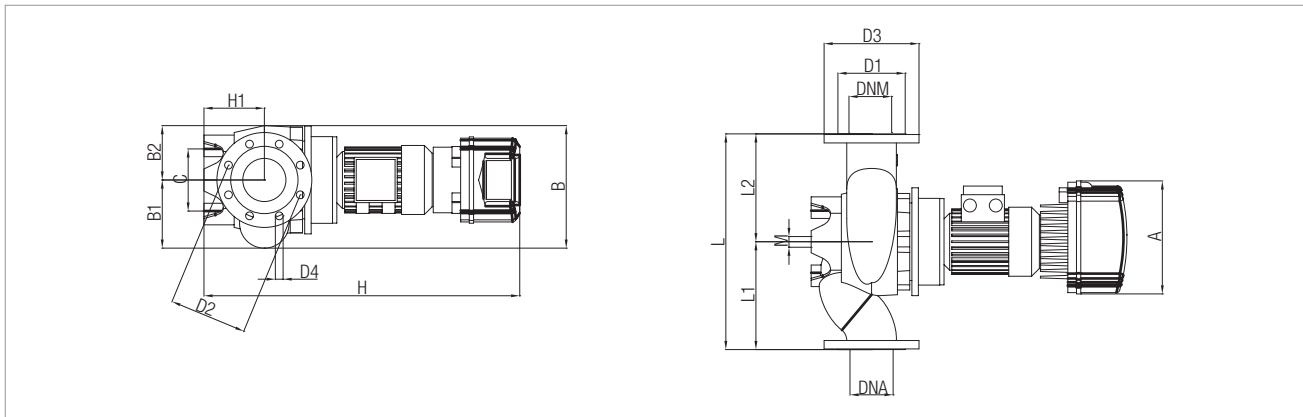
# CM-GE 100 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



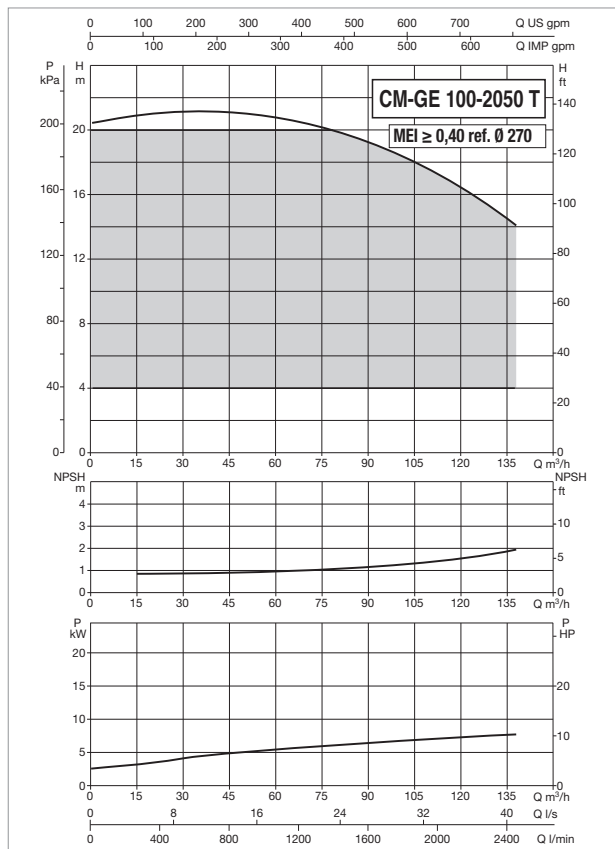
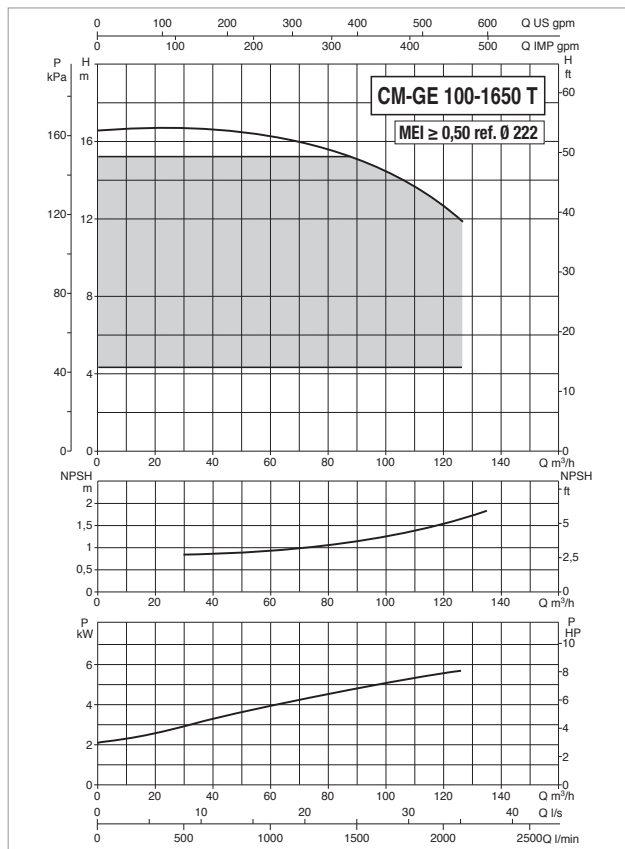
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CM-GE 100-1020/A/BAQE/3 T MCE 30/C*	3 x 400 V ~	4	1441	3,77	3	4	6,8
CM-GE 100-1320/A/BAQE/4 T MCE 55/C*	3 x 400 V ~	4	1450	4,81	4	5,5	8,2

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	H	L/A	L/B	H																					
CM-GE 100-1020/A/BAQE/3 T MCE 30/C	353	346	193	153	-	230	-	158	180	220	8x18	844	140	-	550	275	275	16	-	-	100	100	650	400	945	0,25	118
CM-GE 100-1320/A/BAQE/4 T MCE 55/C	353	378	204	174	-	230	-	158	180	220	8x18	881	140	-	550	275	275	16	-	-	100	100	650	400	945	0,25	150

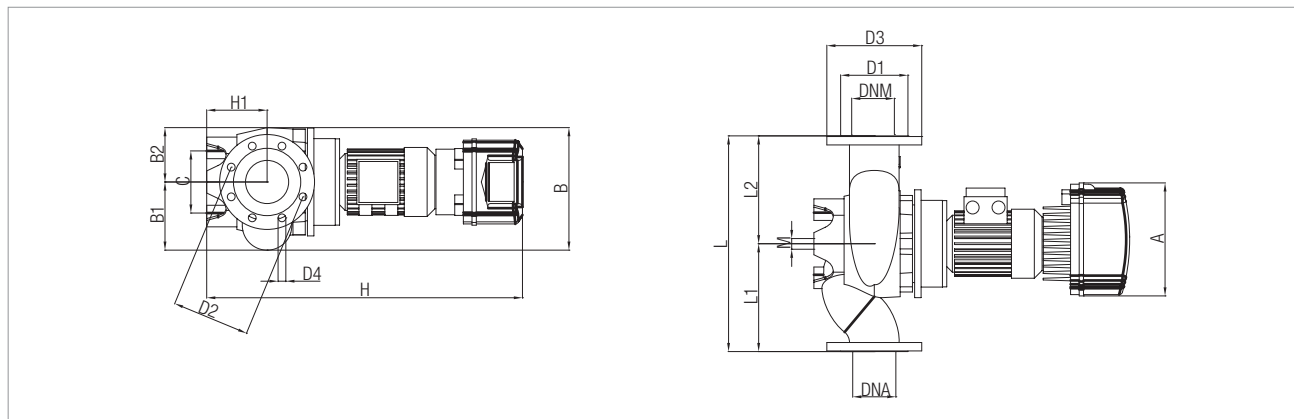
# CM-GE 100 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



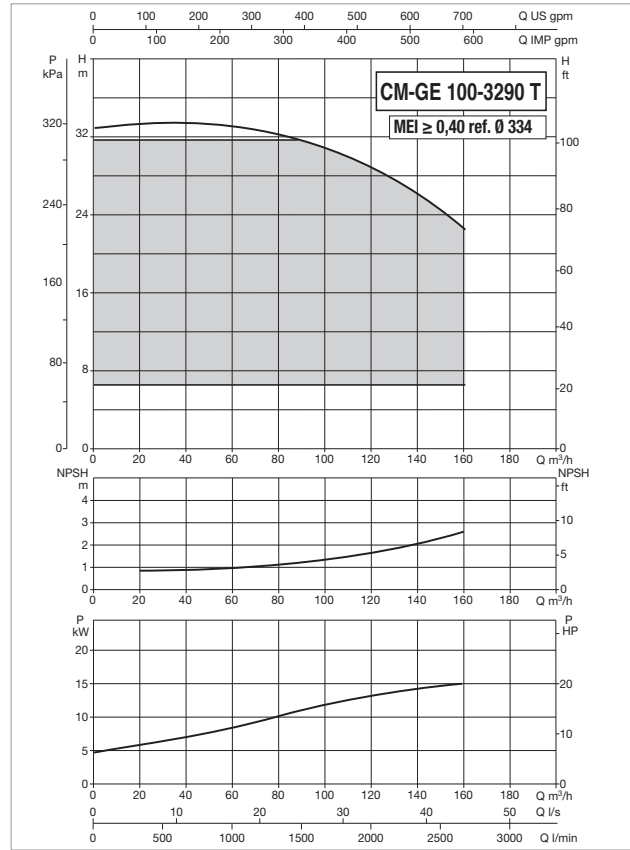
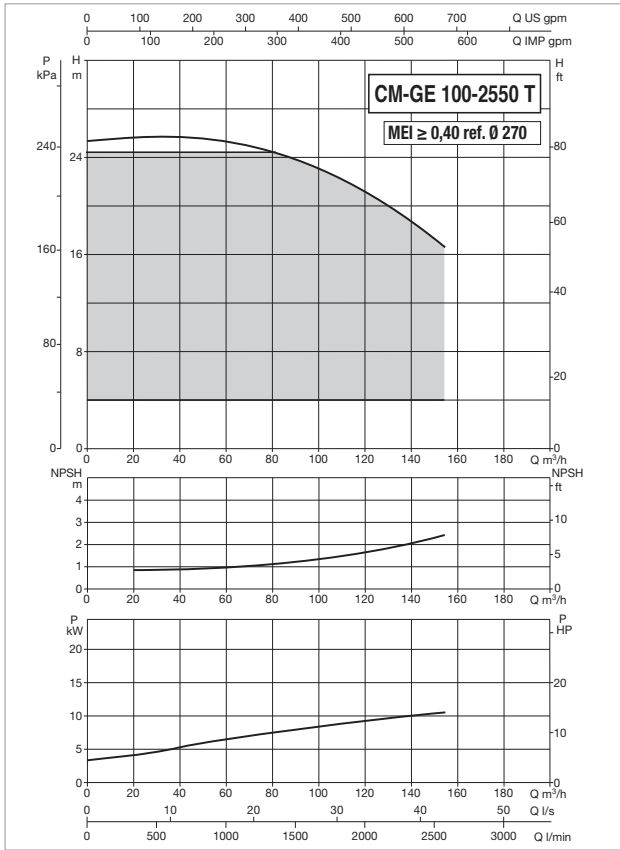
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CM-GE 100-1650/A/BAQE/5,5 T MCE 55/C*	3 x 400 V ~	4	1464	7,27	5,5	7,5	10,6
CM-GE 100-2050/A/BAQE/7,5 T MCE 110/C	3 x 400 V ~	4	1461	8,89	7,5	10	14,4

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
CM-GE 100-1650/A/BAQE/5,5 T MCE 55/C	353	378	204	174	-	230	-	158	180	220	8x18	1021	140	-	550	275	275	16	-	-	100	100	650	400	945	0,25	172
CM-GE 100-2050/A/BAQE/7,5 T MCE 110/C	426	545	293	252	-	230	-	158	180	220	8x18	1155	175	-	670	335	335	16	-	-	100	100	700	600	1220	0,51	252

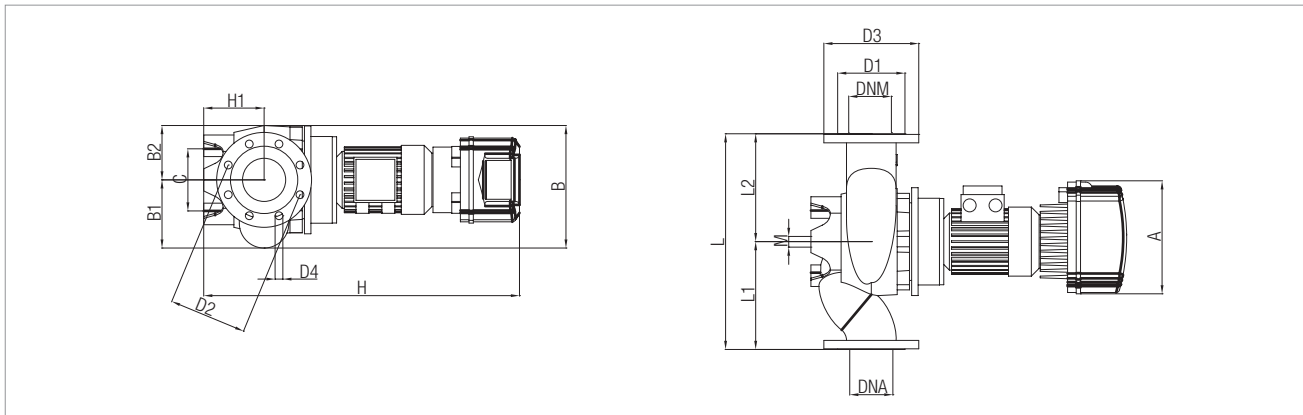
# CM-GE 100 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



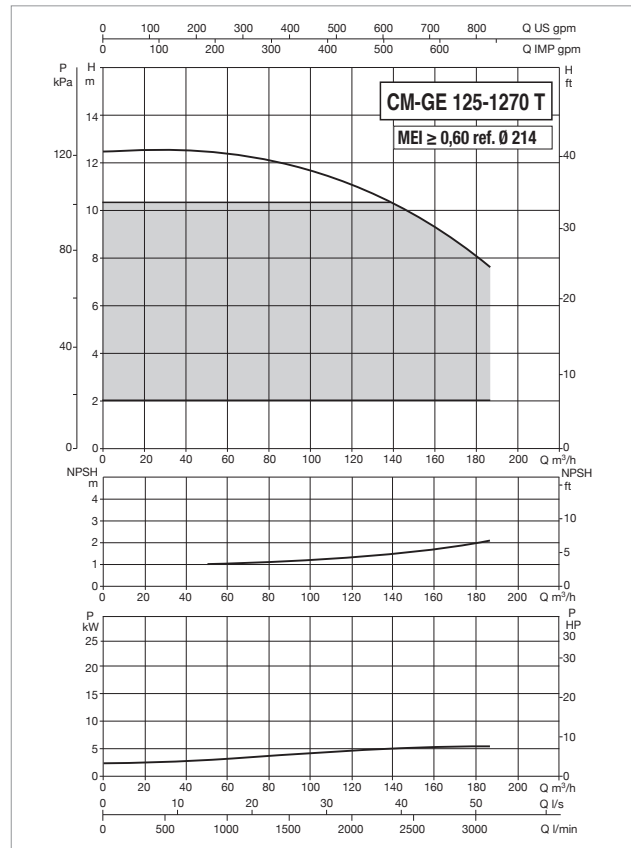
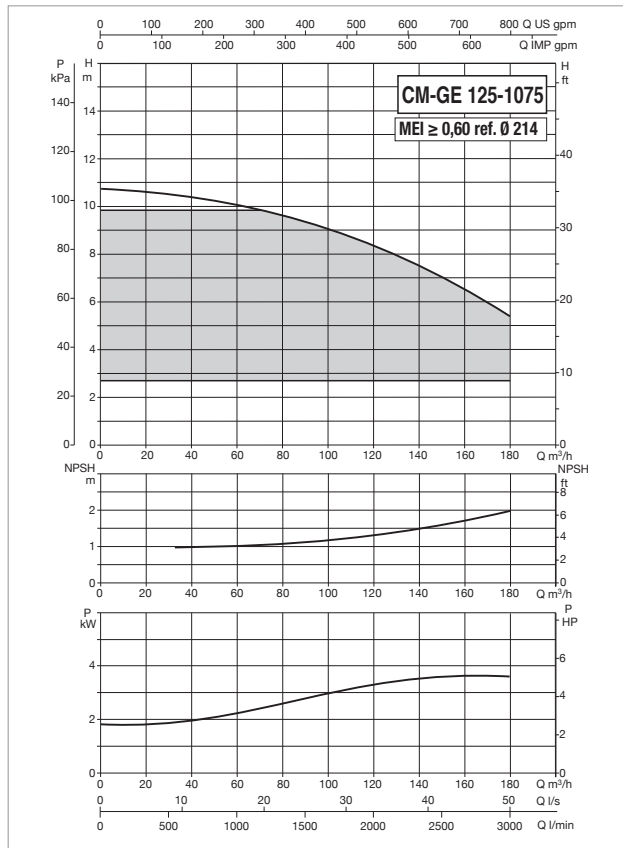
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CM-GE 100-2550/A/BAQE/11 T MCE 110/C*	3 x 400 V ~	4	1470	12,74	11	15	22,4
CM-GE 100-3290/A/BAQE/15 T MCE 150/C*	3 x 400 V ~	4	1471	17,91	15	20	30,5

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
CM-GE 100-2550/A/BAQE/11 T MCE 110/C	426	545	293	252	-	230	-	158	180	220	8x18	1155	175	-	670	335	335	16	-	-	100	100	700	600	1220	0,51	255
CM-GE 100-3290/A/BAQE/15 T MCE 150/C	426	545	293	252	-	230	-	158	180	220	8x18	1357	175	-	670	335	335	16	-	-	100	100	900	550	1200	0,59	350

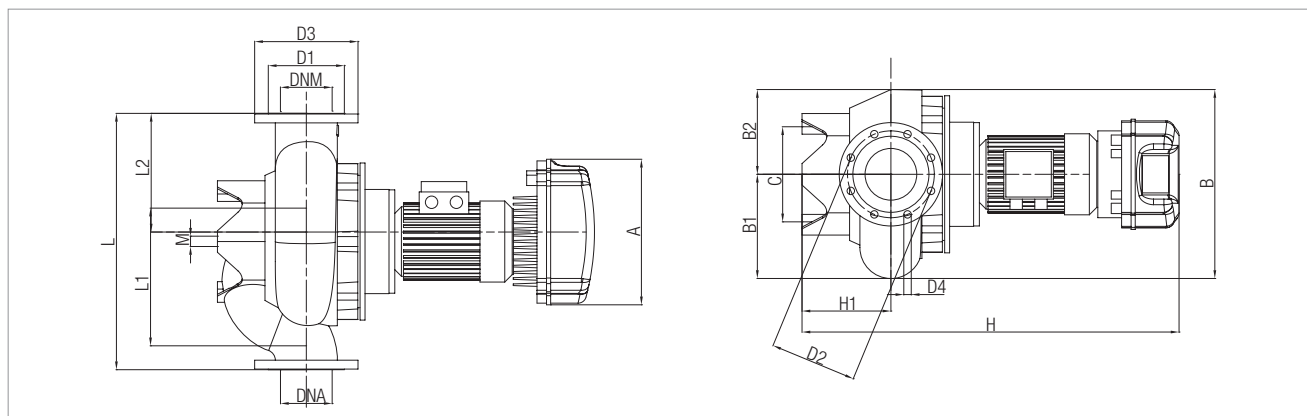
# CM-GE 125 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



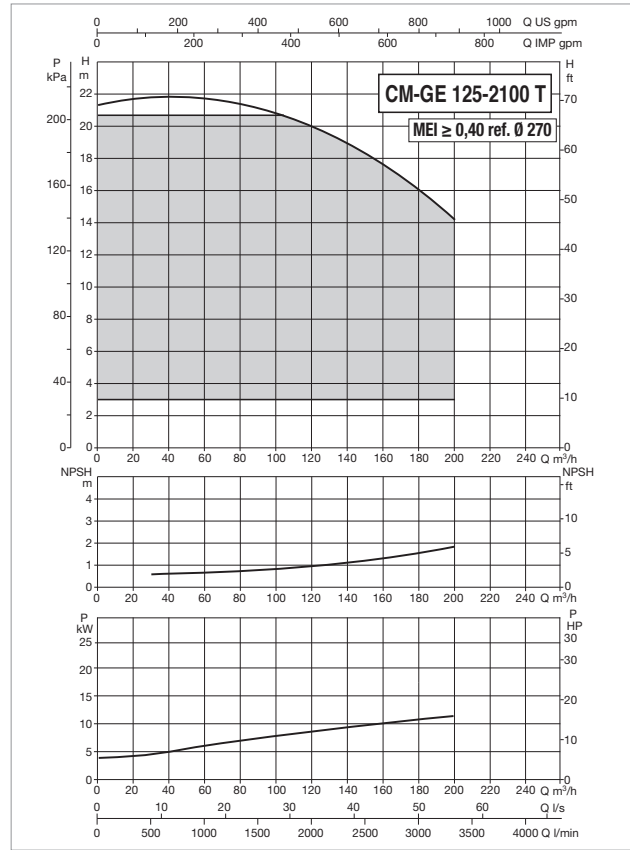
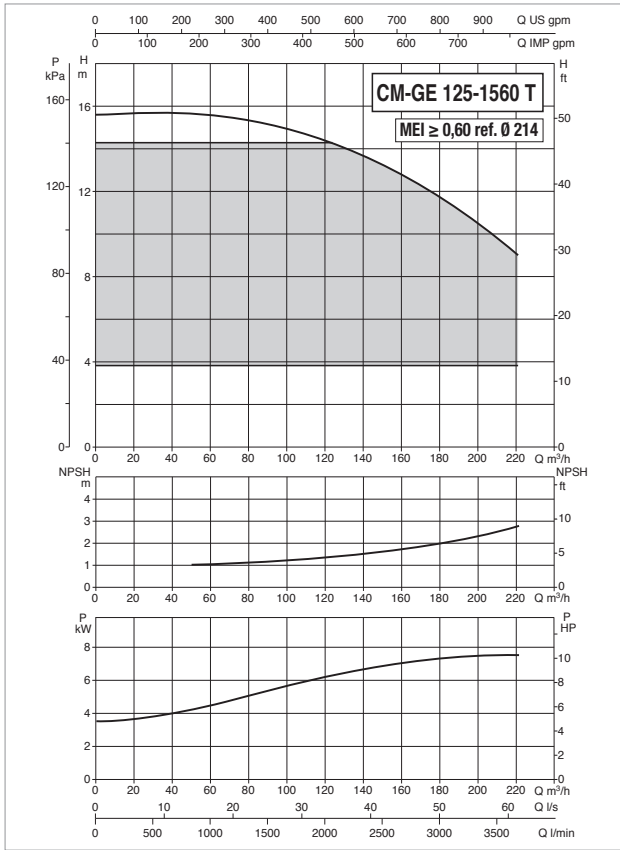
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CM-GE 125-1075/A/BAQE/4 T MCE 55/C*	3 x 400 V ~	4	1455	5,38	4	5,5	8,2
CM-GE 125-1270/A/BAQE/5,5 T MCE 55/C*	3 x 400 V ~	4	1465	7,55	5,5	7,5	10,6

\* ΔP-v proportional differential pressure adjustment mode also available.

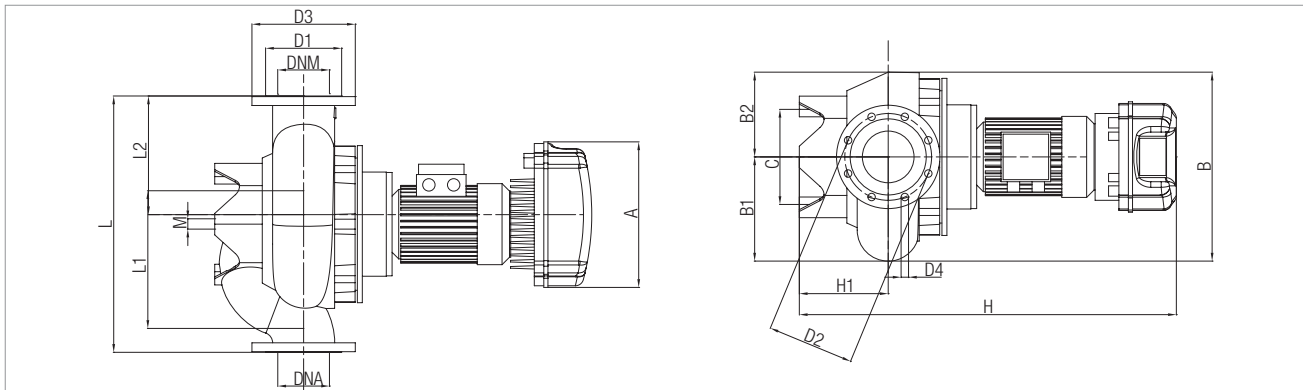
MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
CM-GE 125-1075/A/BAQE/4 T MCE 55/C	353	457	252	205	-	230	-	188	210	250	8x18	962	215	-	620	310	310	16	-	-	125	125	700	600	1220	0,51	207
CM-GE 125-1270/A/BAQE/5,5 T MCE 55/C	353	457	252	205	-	230	-	188	210	250	8x18	1101	215	-	620	310	310	16	-	-	125	125	700	600	1220	0,51	209

# CM-GE 125 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics. The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CM-GE 125-1560/A/BAQE/7,5 T MCE 110/C*	3 x 400 V ~	4	1469	9,93	7,5	10	14,4
CM-GE 125-2100/A/BAQE/11 T MCE 110/C	3 x 400 V ~	4	1475	14,3	11	15	22,4

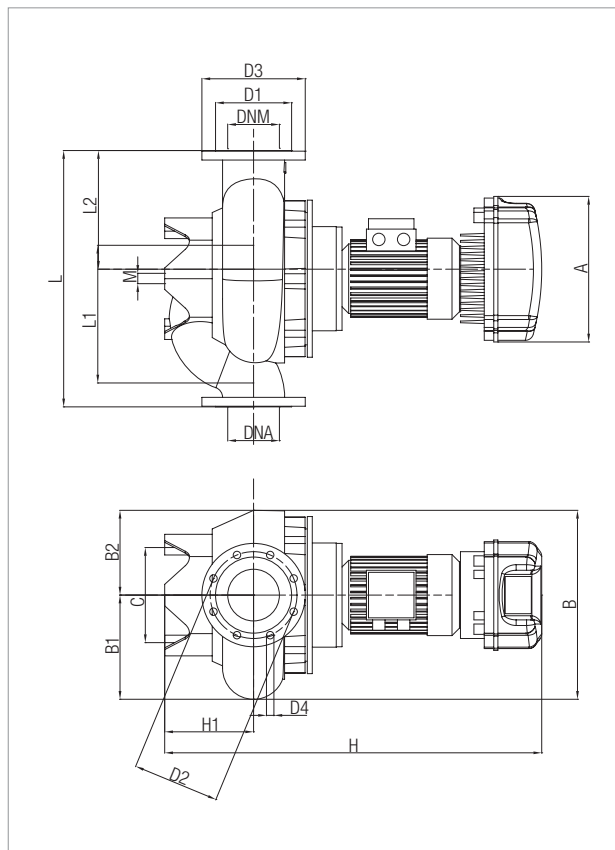
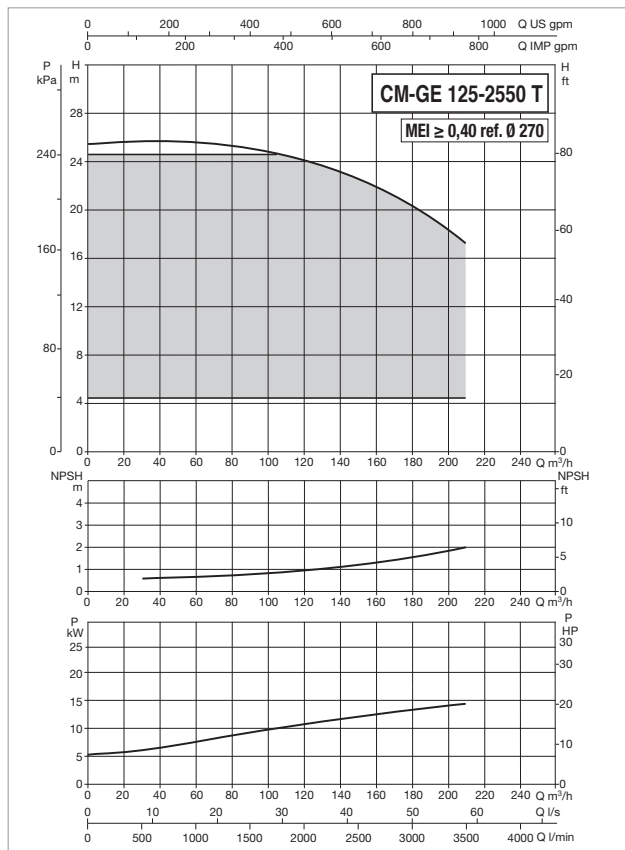
\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	H	L/A	L/B	H																					
CM-GE 125-1560/A/BAQE/7,5 T MCE 110/C	426	457	252	205	-	230	-	188	210	250	8x18	1199	215	-	620	310	310	16	-	-	125	125	700	600	1220	0,51	228
CM-GE 125-2100/A/BAQE/11 T MCE 110/C	426	519	274	245	-	230	-	188	210	250	8x18	1267	215	-	800	400	400	16	-	-	125	125	900	550	1200	0,59	307



# CM-GE 125 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

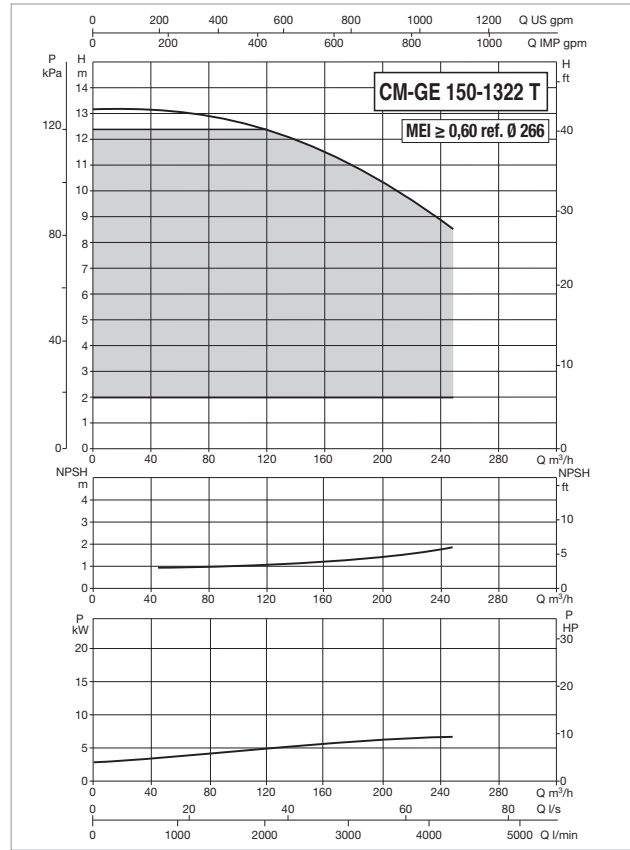
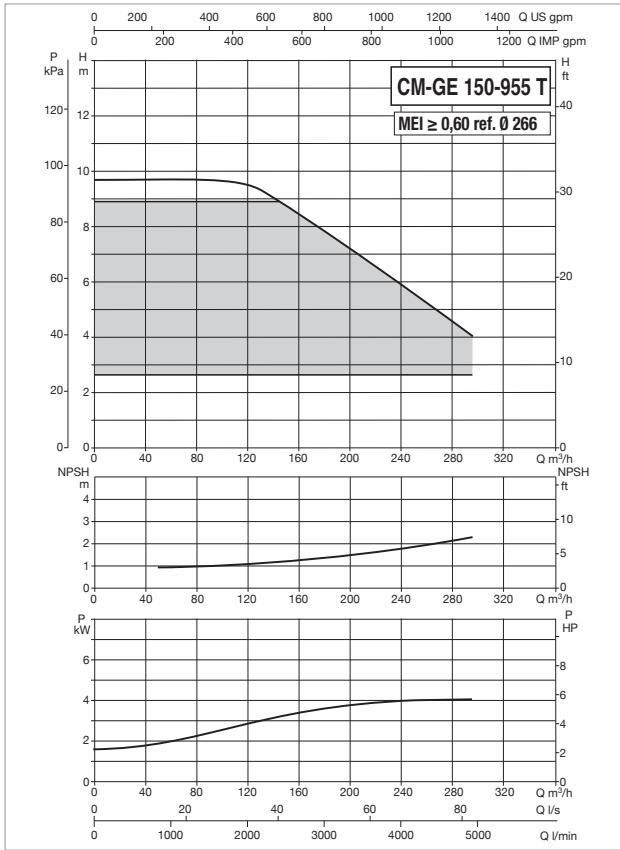
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CM-GE 125-2550/A/BAQE/15 T MCE 150/C*	3 x 400 V ~	4	1470	17,07	15	20	30,5

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	H																								
CM-GE 125-2550/A/BAQE/15 T MCE 150/C	426	519	274	245	-	230	-	188	210	250	8x18	1407	215	-	800	400	400	16	-	-	125	125	900	550	1200	0,59	363

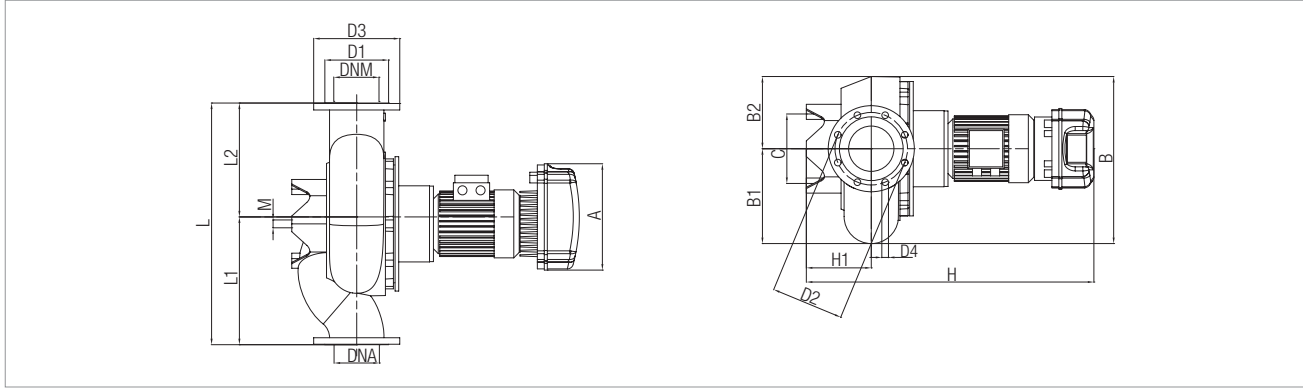
# CM-GE 150 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

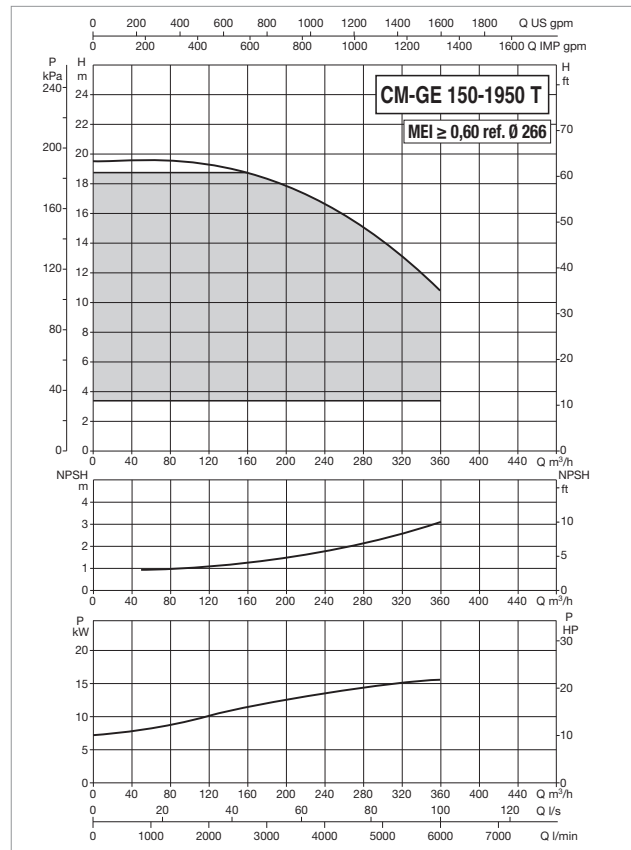
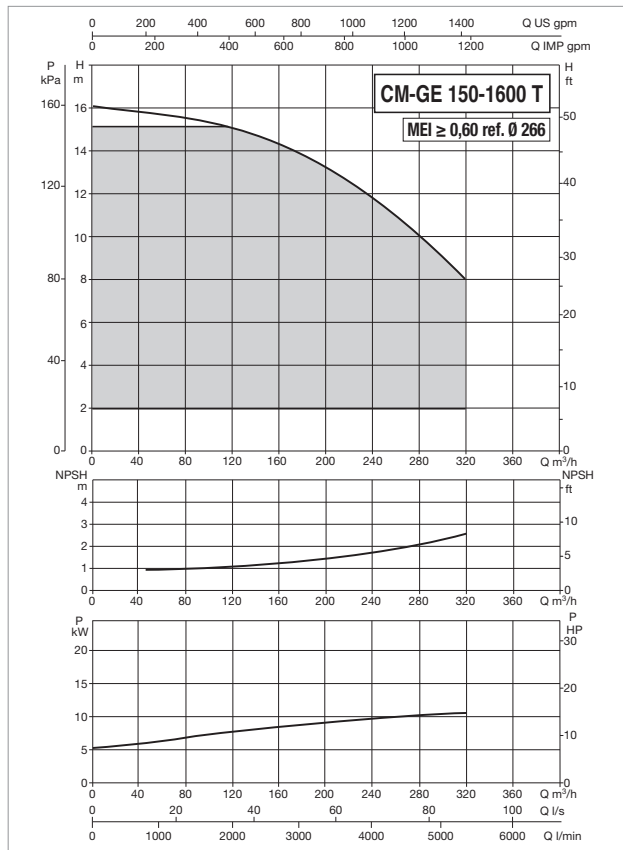


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CM-GE 150-955/A/BAQE/5,5 T MCE 55/C	3 x 400 V ~	4	1462	7,9	5,5	7,5	10,6
CM-GE 150-1322/A/BAQE/7,5 T MCE 110/C	3 x 400 V ~	4	1464	9,37	7,5	10	14,4

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
CM-GE 150-955/A/BAQE/5,5 T MCE 55/C	353	538	299	239	-	230	-	212	240	285	8x22	1110	215	-	800	400	400	16	-	-	150	150	900	550	1200	0,59	274
CM-GE 150-1322/A/BAQE/7,5 T MCE 110/C	426	538	299	239	-	230	-	212	240	285	8x22	1208	215	-	800	400	400	16	-	-	150	150	900	550	1200	0,59	294

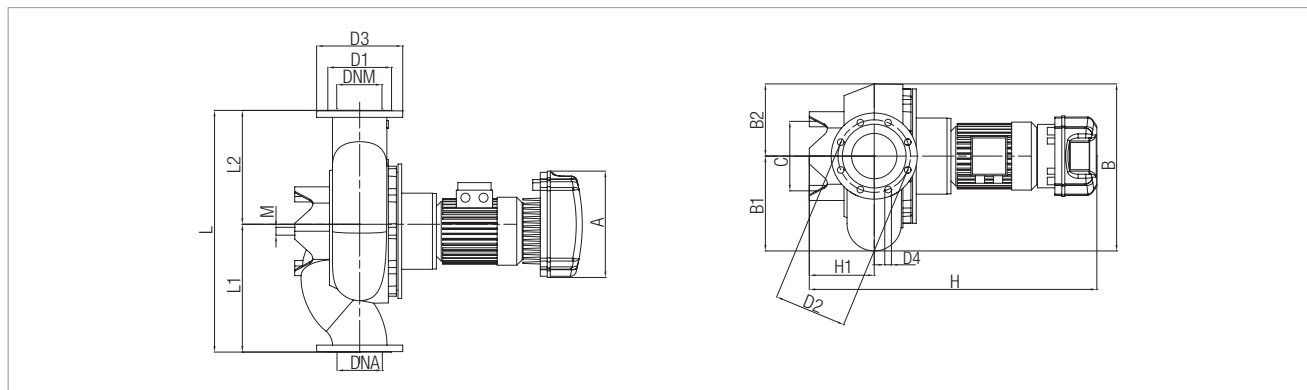
# CM-GE 150 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



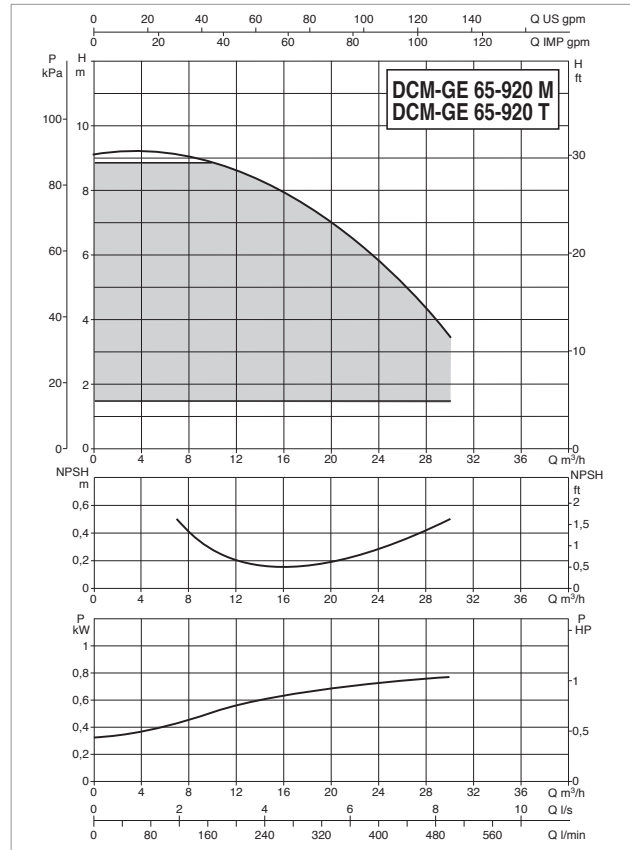
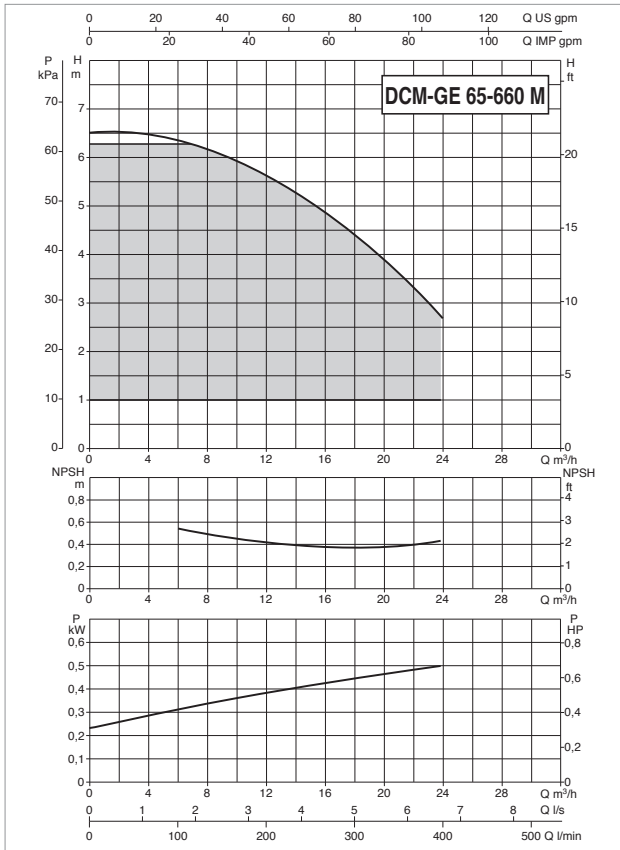
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CM-GE 150-1600/A/BAQE/11 T MCE 110/C*	3 x 400 V ~	4	1473	13,61	11	15	22,4
CM-GE 150-1950/A/BAQE/15 T MCE 150/C*	3 x 400 V ~	4	1472	18,39	15	20	30,5

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	H	L/A	L/B	H																					
CM-GE 150-1600/A/BAQE/11 T MCE 110/C	426	538	299	239	-	230	-	212	240	285	8x22	1270	215	-	800	400	400	16	-	-	150	150	900	550	1200	0,59	306
CM-GE 150-1950/A/BAQE/15 T MCE 150/C	426	538	299	239	-	230	-	212	240	285	8x22	1411	215	-	800	400	400	16	-	-	150	150	900	550	1500	0,74	356

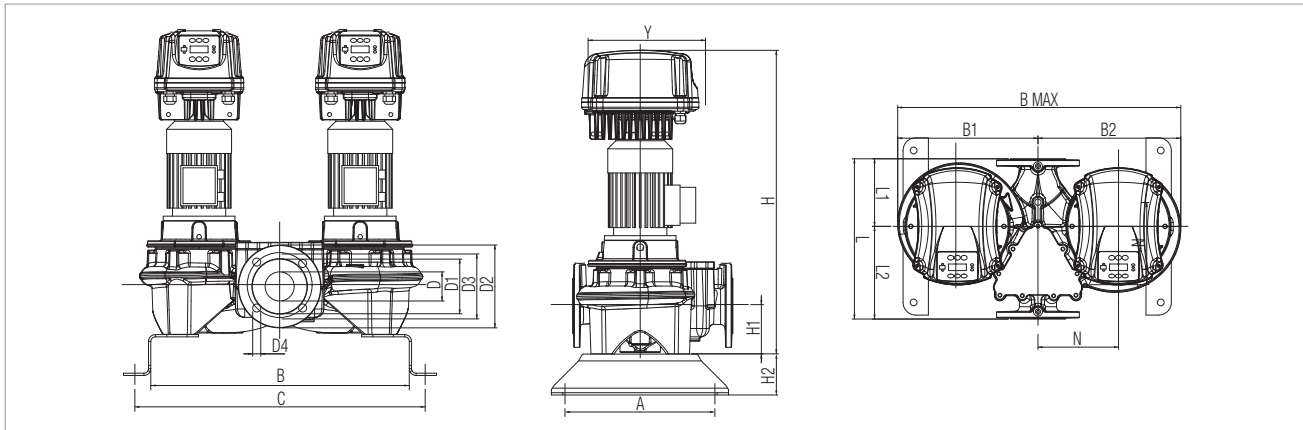
# DCM-GE 65 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



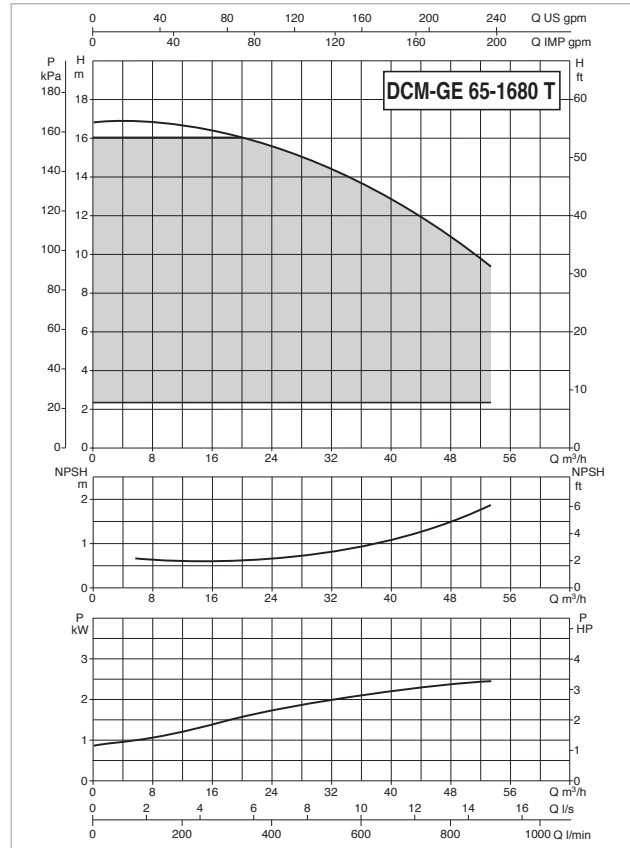
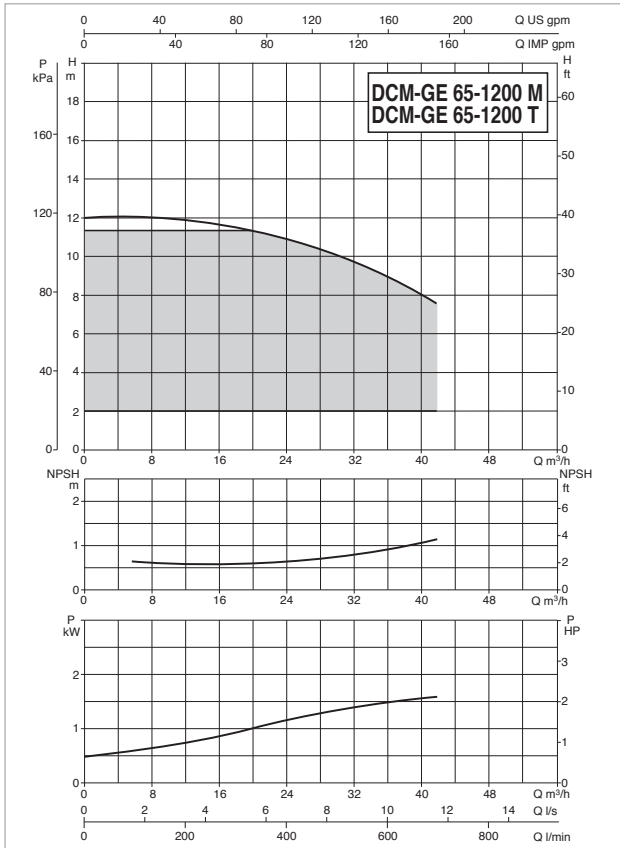
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCM-GE 65-660/A/BAQE/0,55 M MCE 11/C*	1 x 220-240 V ~	4	1400	0,84	0,55	0,75	7,3
DCM-GE 65-920/A/BAQE/0,75 M MCE 11/C*	1 x 220-240 V ~	4	1430	1,23	0,75	1	9,8
DCM-GE 65-920/A/BAQE/0,75 T MCE 30/C*	3 x 400 V ~	4	1430	1,23	0,75	1	1,8

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNa	DNm	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
DCM-GE 65-660/A/BAQE/0,55 M MCE 11/C	330	569	315	320	635	639	-	122	185	145	4	733	107	100	358	151	207	M16	180	262	65	65	358	635	733	0,17	141
DCM-GE 65-920/A/BAQE/0,75 M MCE 11/C	330	569	315	320	635	639	-	122	185	145	4	733	107	100	358	151	207	M16	180	262	65	65	358	635	733	0,17	144
DCM-GE 65-920/A/BAQE/0,75 T MCE 30/C	330	569	315	320	635	639	-	122	185	145	Ø18	730	107	100	358	151	207	M16	180	262	65	65	358	635	730	0,17	146

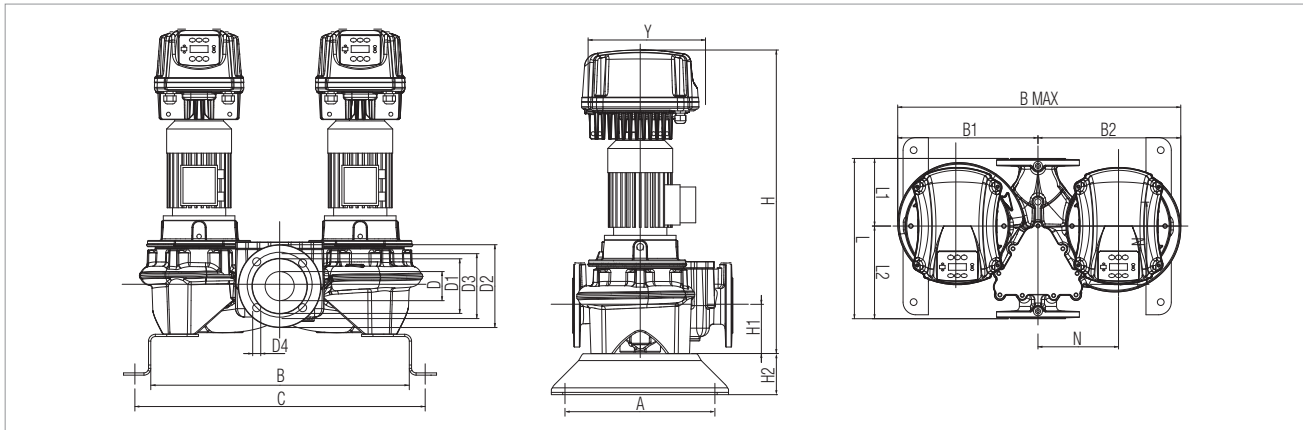
# DCM-GE 65 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



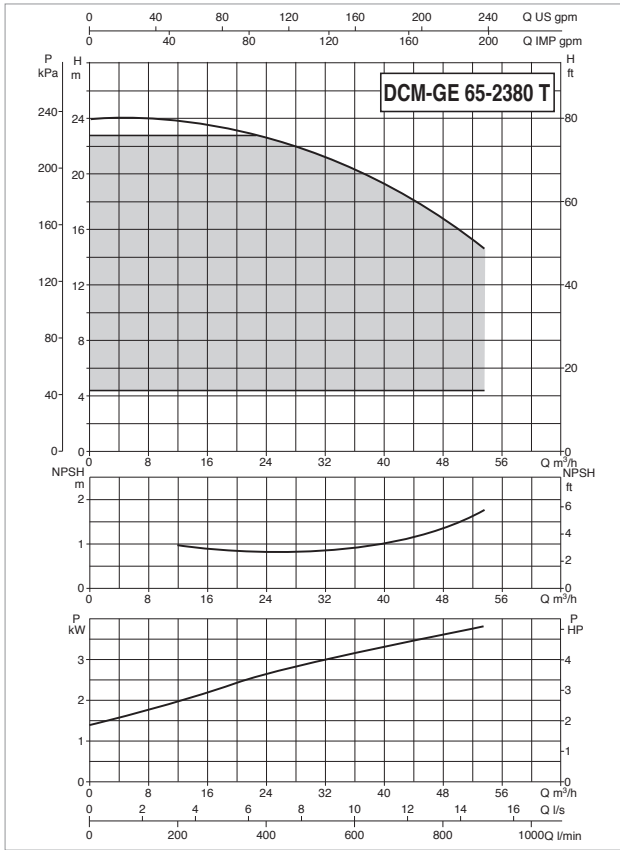
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCM-GE 65-1200/A/BAQE/1,5 M MCE 11/C*	1 x 220-240 V ~	4	1430	2,1	1,5	2	15,4
DCM-GE 65-1200/A/BAQE/1,5 T MCE 30/C*	3 x 400 V ~	4	1430	2,1	1,5	2	3,6
DCM-GE 65-1680/A/BAQE/3 T MCE 30/C*	3 x 400 V ~	4	1448	2,83	3	4	6,8

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
DCM-GE 65-1200/A/BAQE/1,5 M MCE 11/C	330	649	387	395	782	719	-	122	185	145	4	821	125	100	475	177	298	M16	220	262	65	65	475	782	821	0,3	193
DCM-GE 65-1200/A/BAQE/1,5 T MCE 30/C	330	649	387	395	782	719	-	122	185	145	4 HOLES Ø 18	824	125	100	475	177	298	M16	220	262	65	65	475	782	824	0,31	195
DCM-GE 65-1680/A/BAQE/3 T MCE 30/C	330	649	387	395	782	719	-	122	185	145	4	840	125	100	475	177	298	M16	220	352	65	65	475	782	840	0,31	206

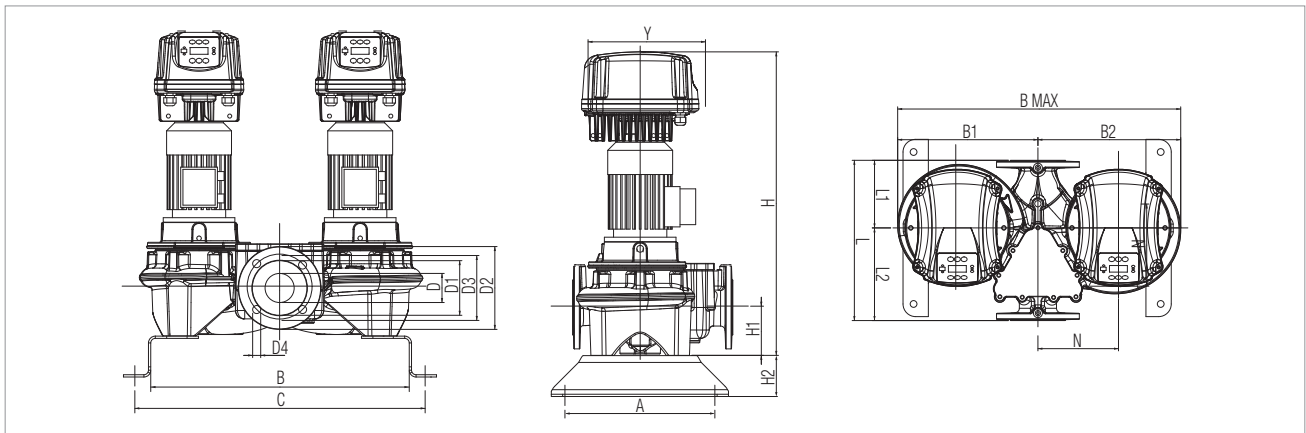
# DCM-GE 65 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



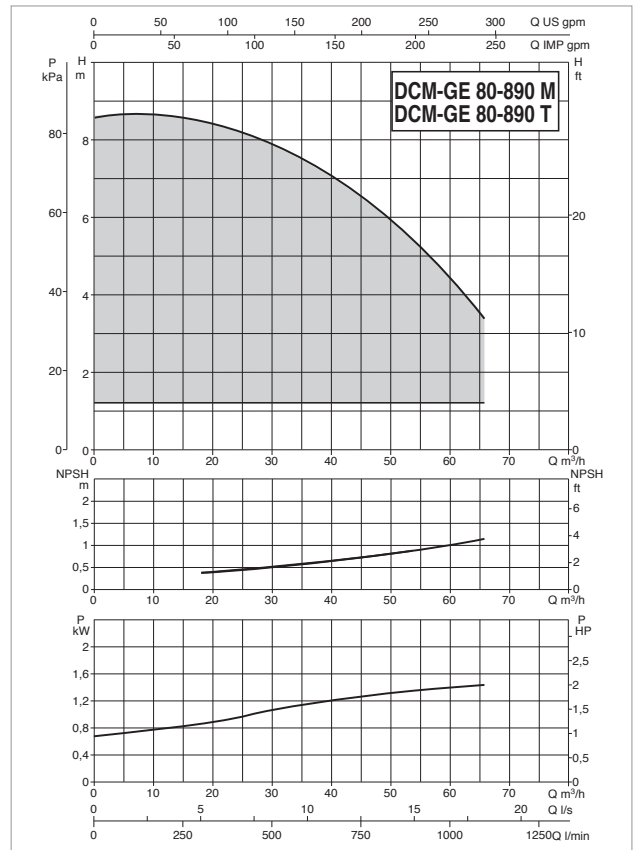
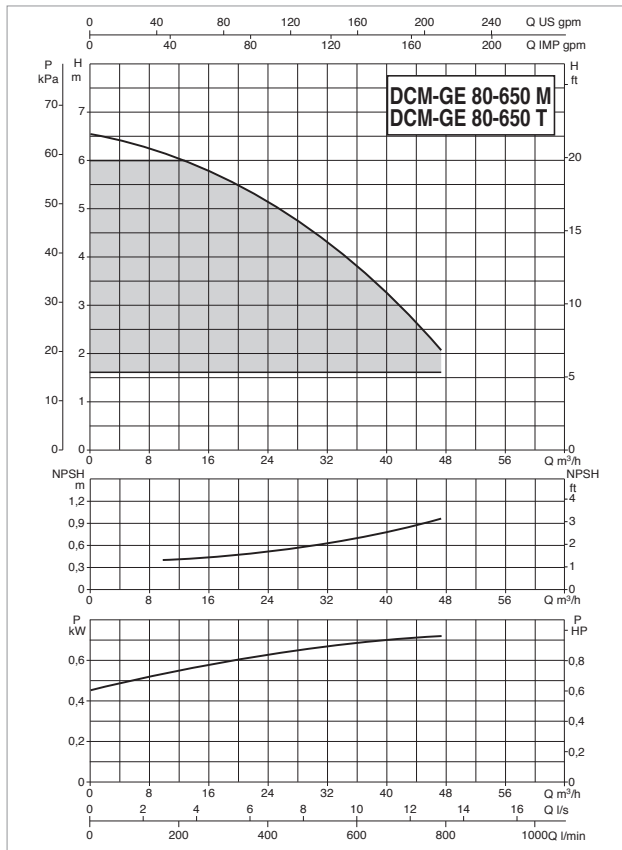
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCM-GE 65-2380/A/BAQE/4 T MCE 30/C*	3 x 400 V ~	4	1449	4,47	4	5,5	8,2

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
											4 HOLES Ø 18												L/A	L/B	H		
DCM-GE 65-2380/A/BAQE/4 T MCE 30/C	330	649	387	395	782	719	-	122	185	145	4 HOLES Ø 18	925	125	100	475	177	298	M16	220	352	65	65	475	782	925	0,34	233

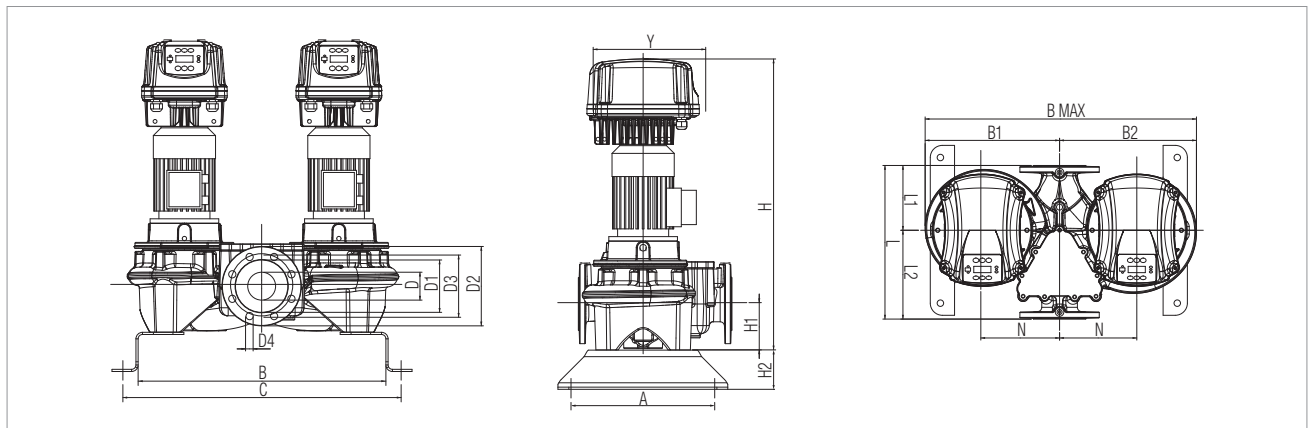
# DCM-GE 80 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



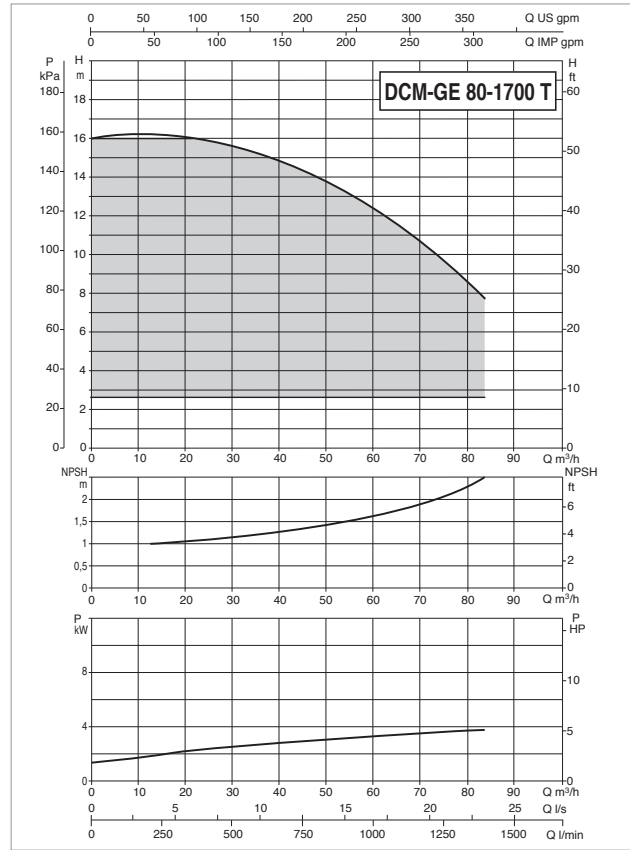
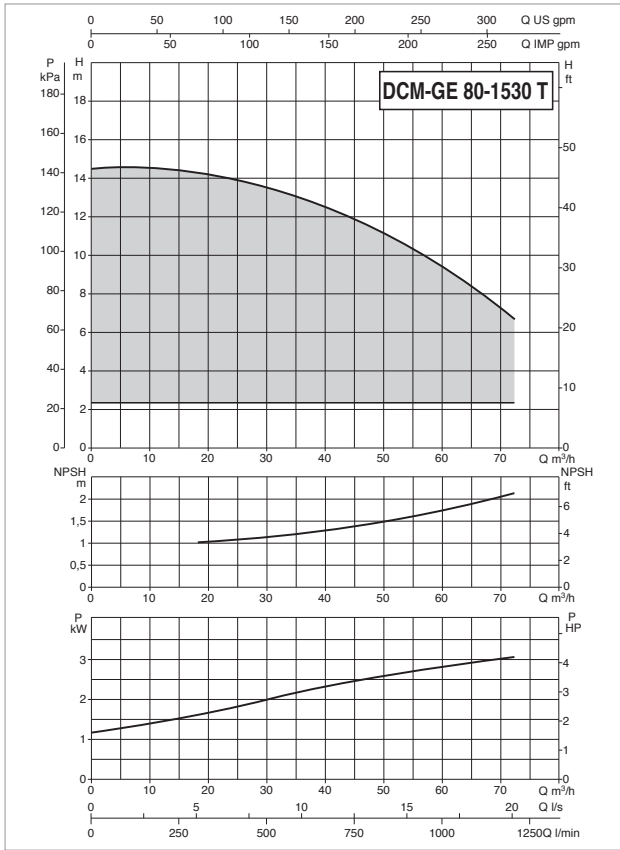
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCM-GE 80-650/A/BAQE/0,75 M MCE 11/C*	1 x 220-240 V ~	4	1430	1,24	0,75	1	9,8
DCM-GE 80-650/A/BAQE/0,75 T MCE 30/C*	3 x 400 V ~	4	1430	1,24	0,75	1	1,8
DCM-GE 80-890/A/BAQE/1,5 T MCE 30/C*	3 x 400 V ~	4	1430	2,07	1,5	2	3,6
DCM-GE 80-890/A/BAQE/1,5 M MCE 11/C*	1 x 220-240 V ~	4	1430	1,87	1,5	2	13,9

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DN	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
DCM-GE 80-650/A/BAQE/0,75 M MCE 11/C	330	580	305	310	615	650	-	137	200	160	8 HOLES Ø18	745	115	100	360	165	195	M16	180	262	80	80	360	615	745	0,16	134
DCM-GE 80-650/A/BAQE/0,75 T MCE 30/C	330	580	305	310	615	650	-	137	200	160	8 HOLES Ø18	742	115	100	360	165	195	M16	180	262	80	80	360	615	742	0,16	136
DCM-GE 80-890/A/BAQE/1,5 T MCE 30/C	620	620	355	365	720	690	-	137	200	160	8 HOLES Ø18	822	115	100	440	180	260	M16	200	262	80	80	440	720	822	0,26	213
DCM-GE 80-890/A/BAQE/1,5 M MCE 11/C	620	620	355	365	720	690	-	137	200	160	8 HOLES Ø18	825	115	100	440	180	260	M16	200	262	80	80	440	720	825	0,26	211

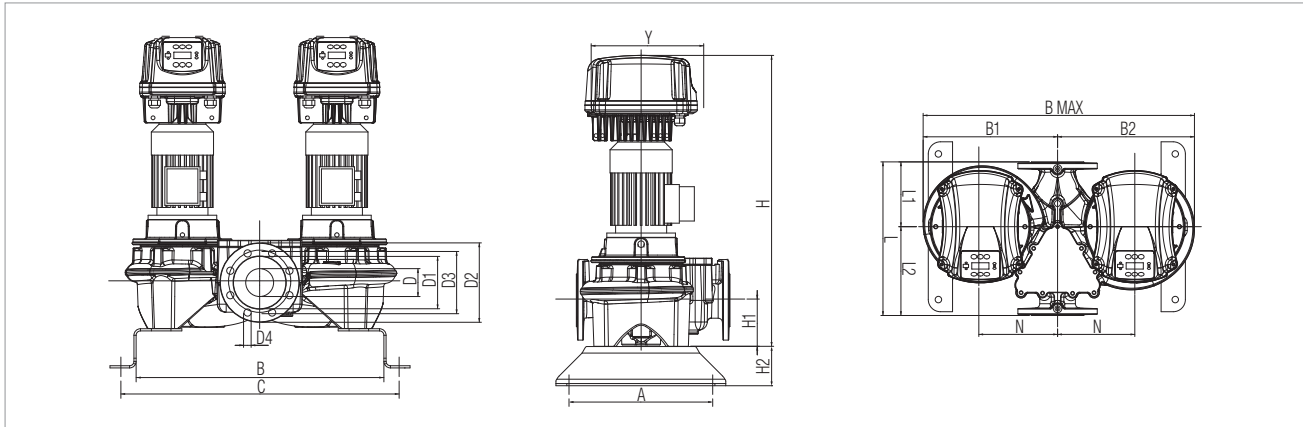
# DCM-GE 80 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCM-GE 80-1530/A/BAQE/3 T MCE 30/C*	3 x 400 V ~	4	1441	3,74	3	4	6,8
DCM-GE 80-1700/A/BAQE/4 T MCE 55/C*	3 x 400 V ~	4	1452	4,77	4	5,5	10,3

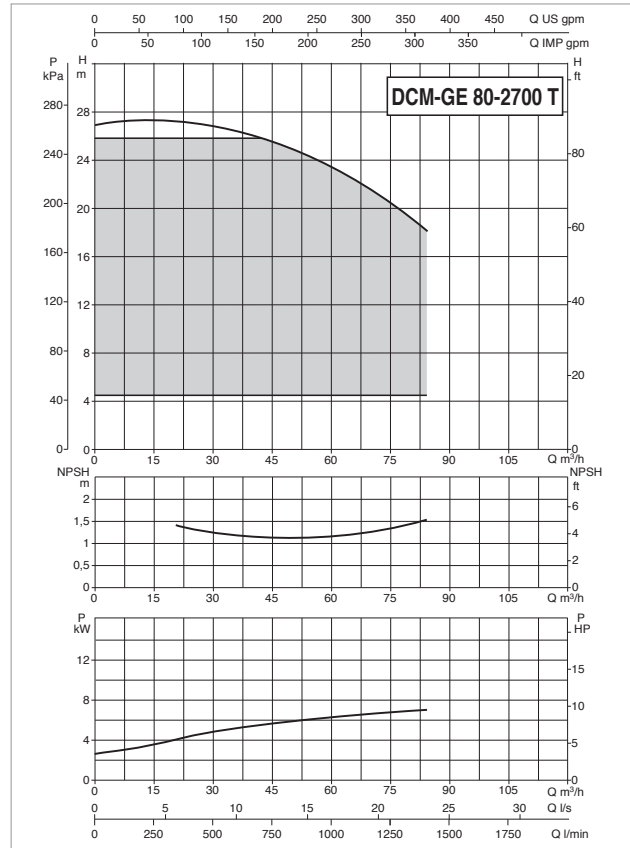
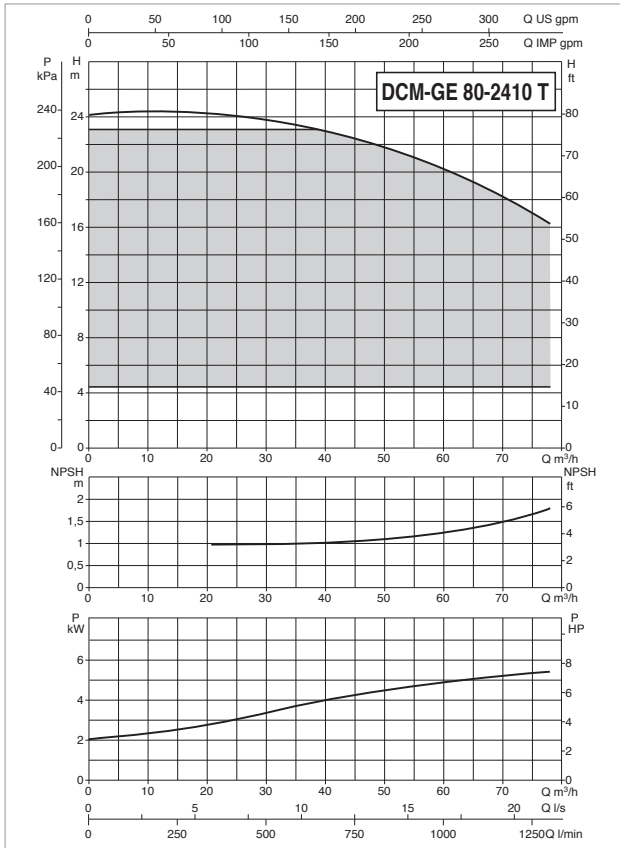
\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
DCM-GE 80-1530/A/BAQE/3 T MCE 30/C	362	662	405	415	820	690	-	137	200	160	8 HOLES Ø 18	846	115	100	500	220	280	M16	235	352	80	80	500	820	846	0,35	251
DCM-GE 80-1700/A/BAQE/4 T MCE 55/C	362	662	405	415	820	732	-	137	200	160	Ø 18	931	115	100	500	220	280	M16	235	352	80	80	500	820	931	0,38	277



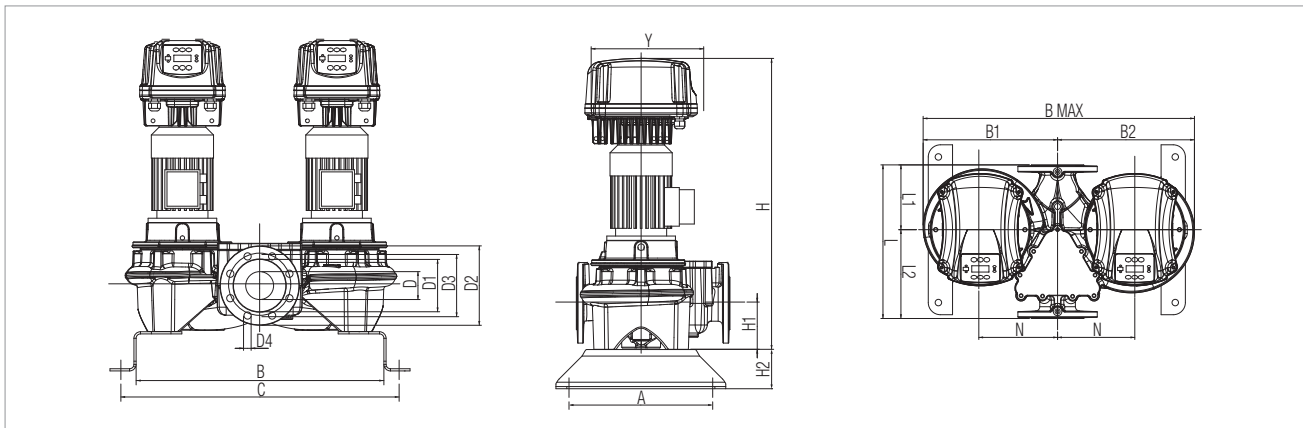
# DCM-GE 80 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



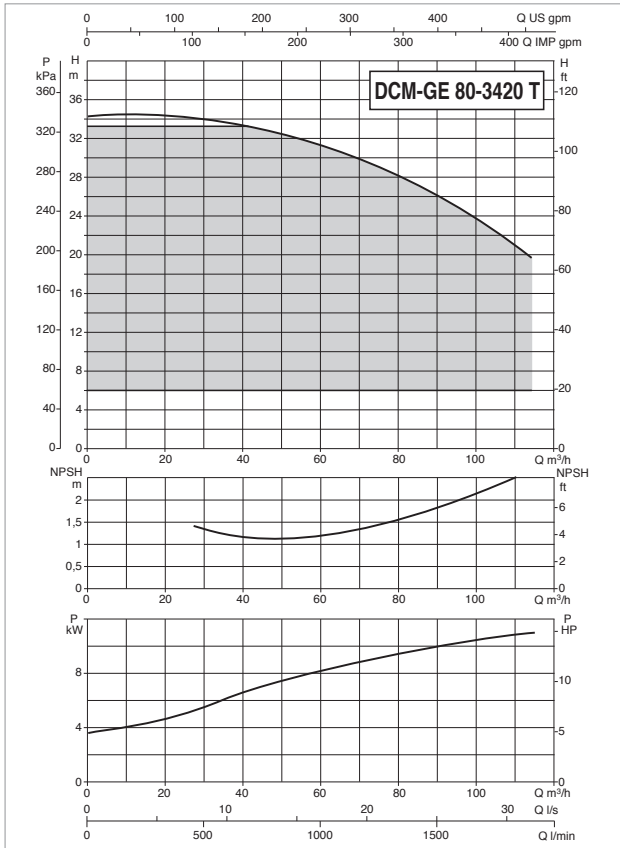
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCM-GE 80-2410/A/BAQE/5,5 T MCE 55/C*	3 x 400 V ~	4	1461	6,8	5,5	7,5	10,6
DCM-GE 80-2700/A/BAQE/7,5 T MCE 110/C*	3 x 400 V ~	4	1463	9,15	7,5	10	14,4

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS L/A L/B H			VOL. (m <sup>3</sup> )	WEIGHT Kg
DCM-GE 80-2410/A/BAQE/5,5 T MCE 55/C	500	804	530	540	1070	924	-	137	200	160	8 HOLES Ø 18	999	140	100	620	280	340	M16	300	352	80	80	620	1070	999	0,66	442
DCM-GE 80-2700/A/BAQE/7,5 T MCE 110/C	500	804	530	540	1070	924	-	137	200	160	Ø 18	1087	140	100	620	280	340	M16	300	425	80	80	620	1070	1087	0,72	499

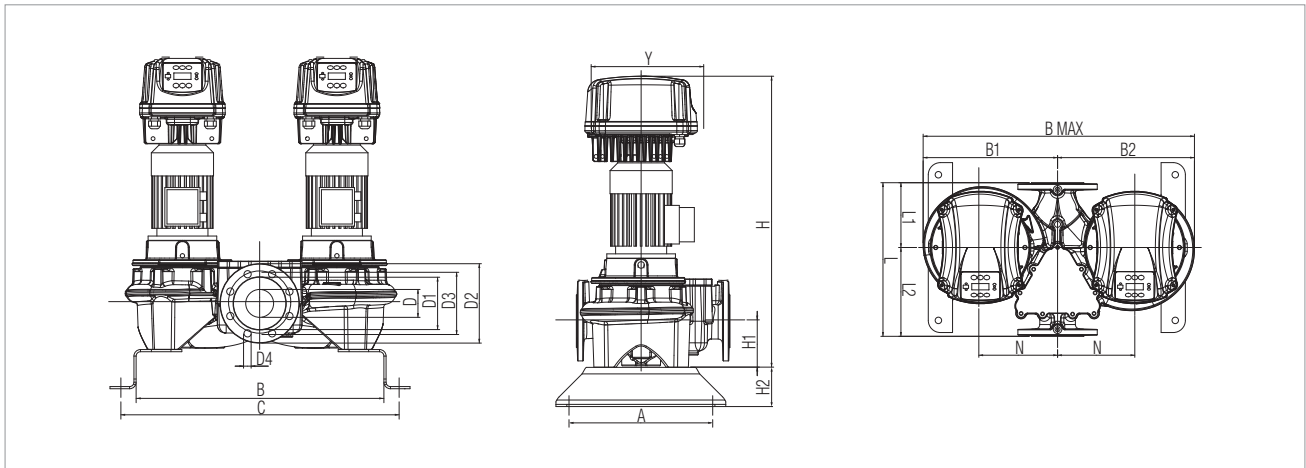
## DCM-GE 80 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



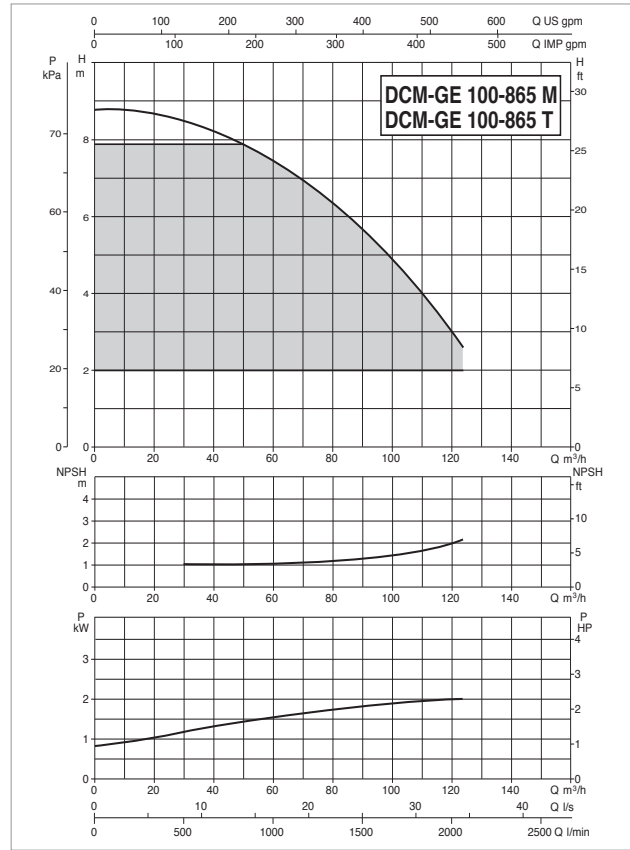
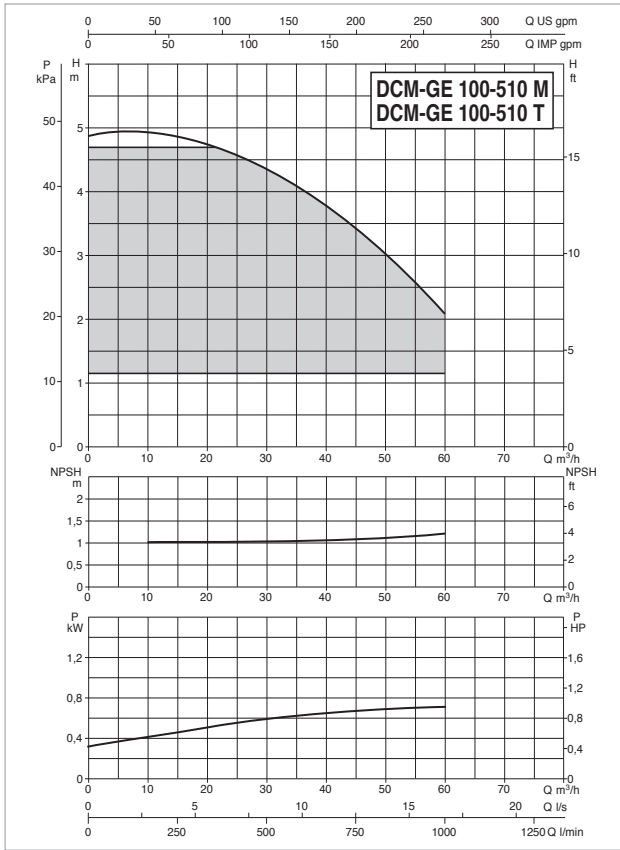
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCM-GE 80-3420/A/BAQE/11 T MCE 110/C*	3 x 400 V ~	4	1472	13,36	11	15	22,4

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	L/B	H	L/A	L/B	H																				
DCM-GE 80-3420/A/BAQE/11 T MCE 110/C	500	804	530	540	1070	924	-	137	200	160	8 HOLES Ø 18	1192	140	100	620	280	340	M16	300	425	80	80	620	1070	1192	0,79	533

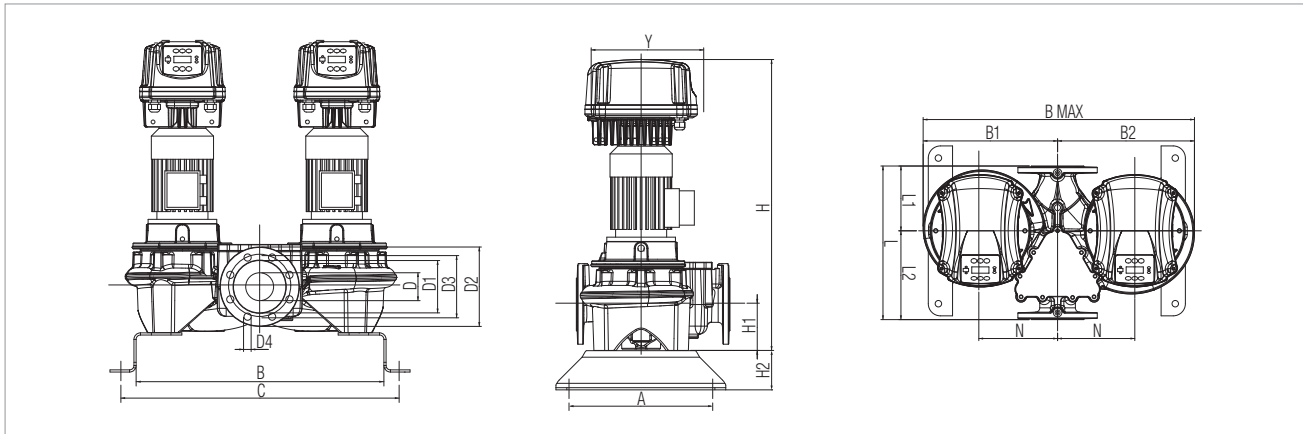
# DCM-GE 100 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



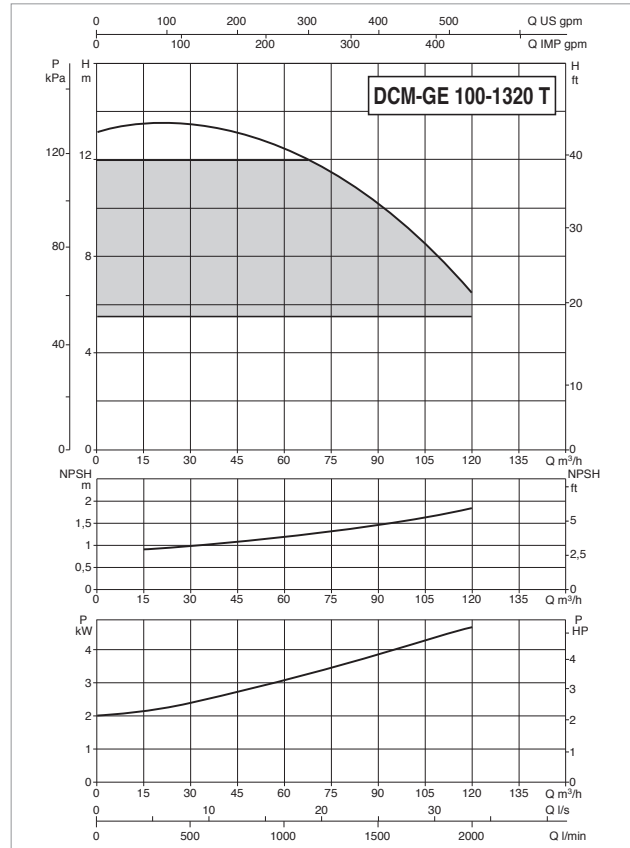
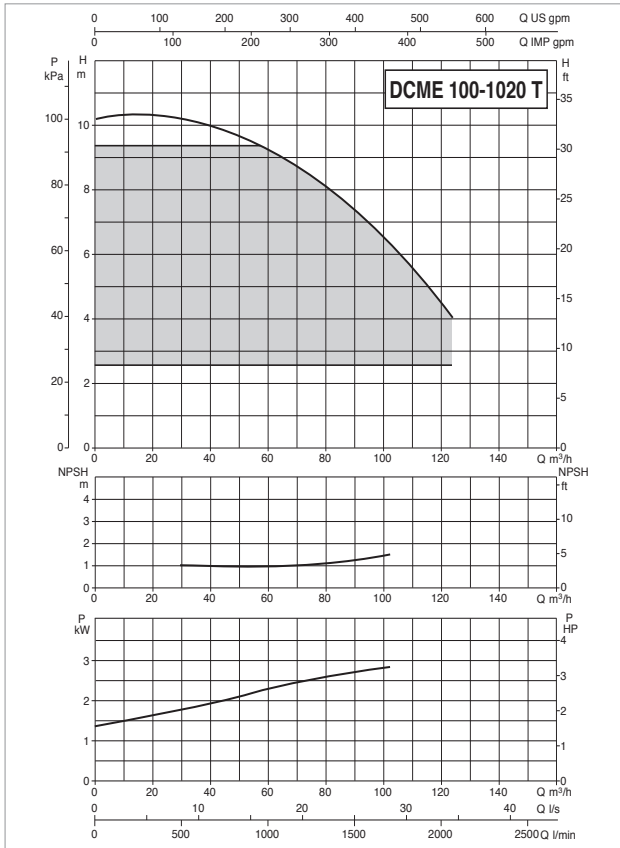
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCM-GE 100-510/A/BAQE/0,75 M MCE 11/C*	1 x 220-240 V ~	4	1430	1,21	0,75	1	9,7
DCM-GE 100-510/A/BAQE/0,75 T MCE 30/C	3 x 400 V ~	4	1430	1,21	0,75	1	1,8
DCM-GE 100-865/A/BAQE/2,2 M MCE 22/C*	1 x 220-240 V ~	4	1430	2,94	2,2	3	20,7
DCM-GE 100-865/A/BAQE/2,2 T MCE 30/C*	3 x 400 V ~	4	1430	2,94	2,2	3	5,9

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNa	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
DCM-GE 100-510/A/BAQE/0,75 M MCE 11/C	362	637	330	345	675	717	-	156	220	180	772	140	100	500	191	309	M16	200	262	100	100	500	675	772	0,26	218	
DCM-GE 100-510/A/BAQE/0,75 T MCE 30/C	362	637	330	345	675	717	-	156	220	180	769	140	100	500	191	309	M16	200	262	100	100	500	675	769	0,26	220	
DCM-GE 100-865/A/BAQE/2,2 M MCE 22/C	362	733	395	410	805	813	-	156	220	180	847	140	100	550	221	329	M16	235	352	100	100	550	805	847	0,38	261	
DCM-GE 100-865/A/BAQE/2,2 T MCE 30/C	362	733	395	410	805	813	-	156	220	180	847	140	100	550	221	329	M16	235	352	100	100	550	805	847	0,38	263	

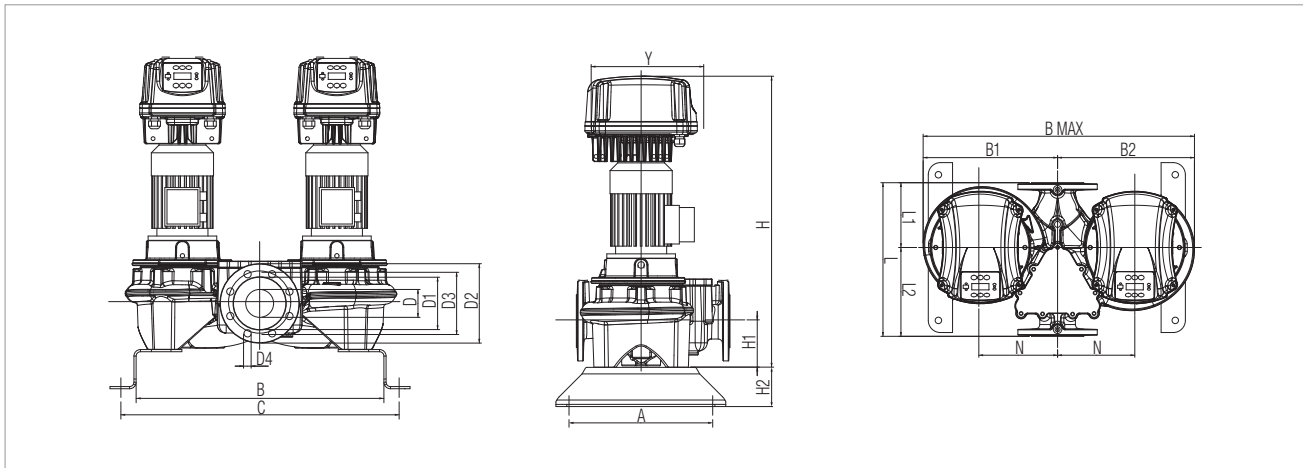
# DCM-GE 100 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



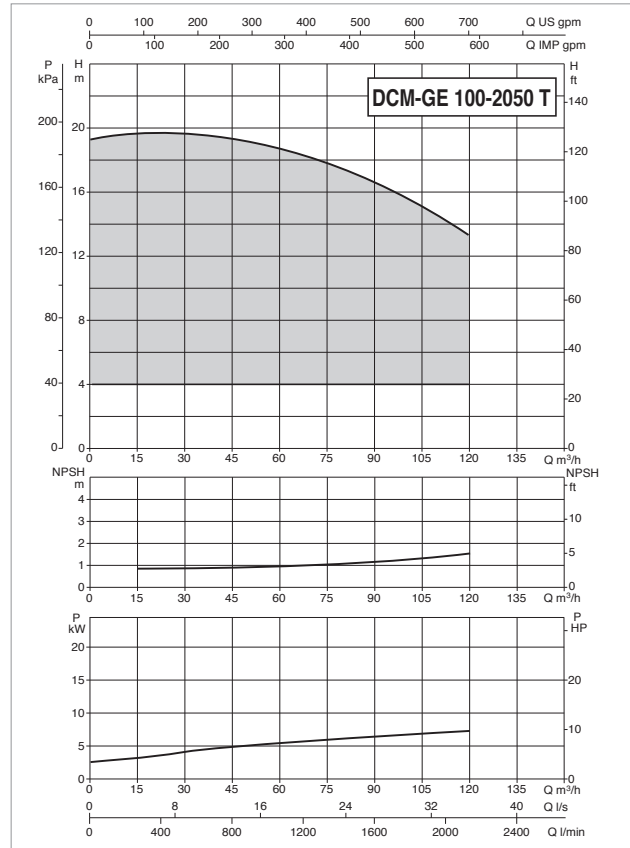
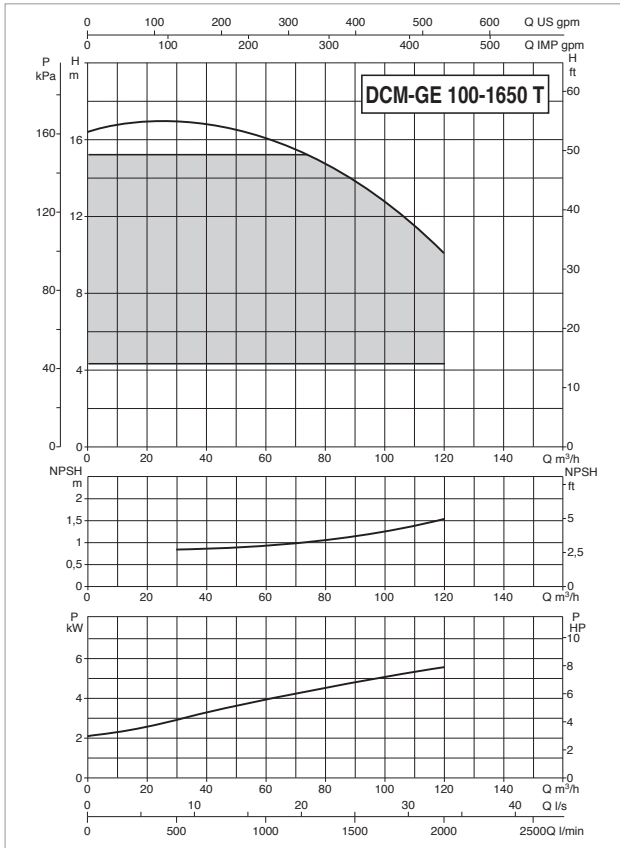
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCM-GE 100-1020/A/BAQE/3 T MCE 30/C*	3 x 400 V ~	4	1441	3,77	3	4	6,8
DCM-GE 100-1320/A/BAQE/4 T MCE 55/C*	3 x 400 V ~	4	1450	4,81	4	5,5	8,2

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
DCM-GE 100-1020/A/BAQE/3 T MCE 30/C	362	733	395	410	805	813	-	156	220	180	8 HOLES Ø18	862	140	100	550	221	329	M16	235	352	100	100	550	805	862	0,38	264
DCM-GE 100-1320/A/BAQE/4 T MCE 55/C	362	753	430	440	870	833	-	156	220	180	Ø18	1007	140	100	550	221	329	M16	250	352	100	100	550	870	1007	0,48	308

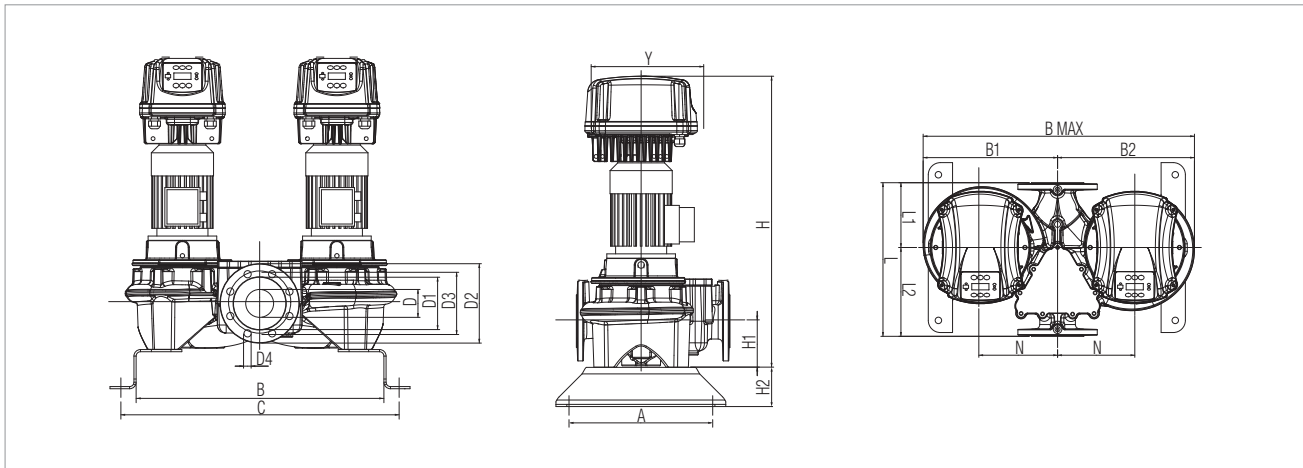
# DCM-GE 100 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



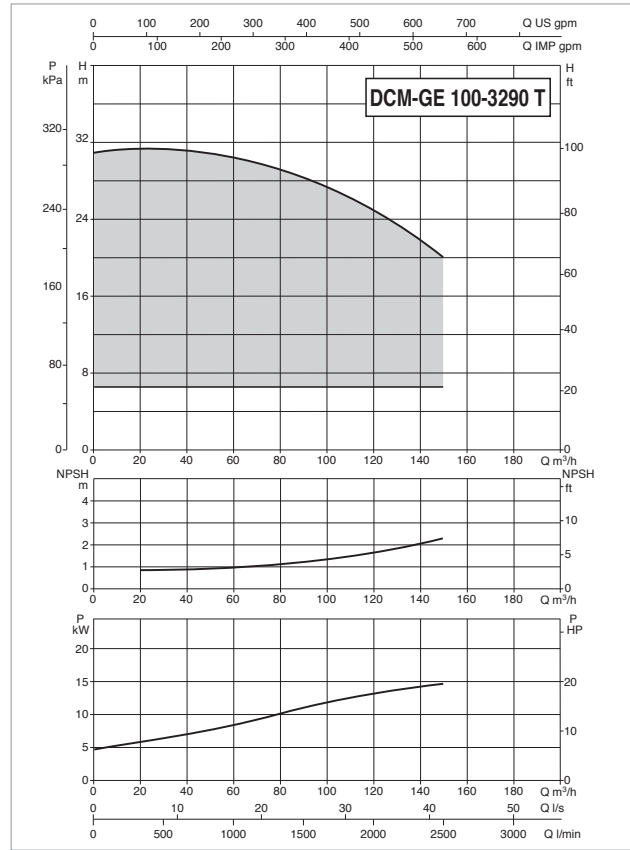
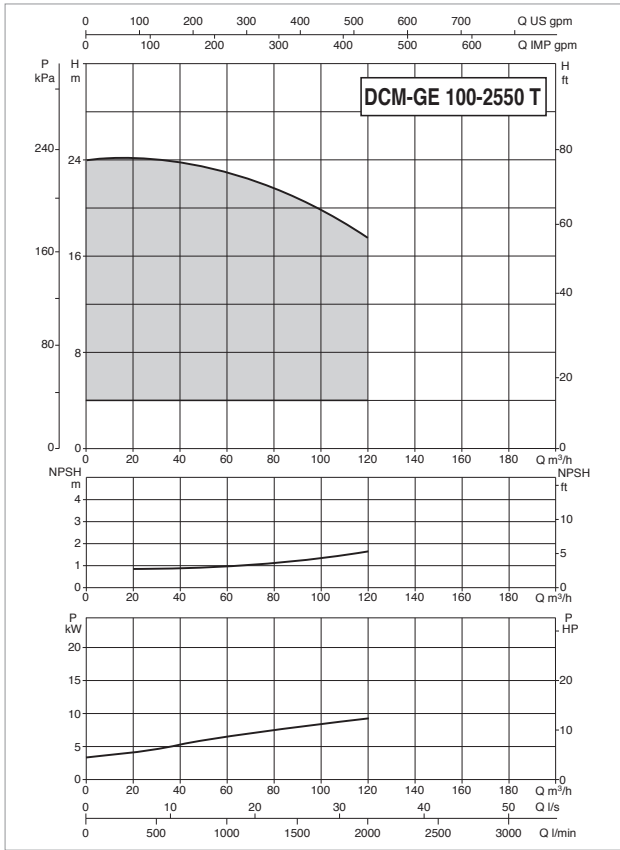
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCM-GE 100-1650/A/BAQE/5,5 T MCE 55/C*	3 x 400 V ~	4	1464	7,27	5,5	7,5	10,6
DCM-GE 100-2050/A/BAQE/7,5 T MCE 110/C*	3 x 400 V ~	4	1461	8,89	7,5	10	14,4

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
DCM-GE 100-1650/A/BAQE/5,5 T MCE 55/C	362	753	430	440	870	833	-	156	220	180	8 HOLES Ø18	1008	140	100	550	221	329	M16	250	352	100	100	550	870	1008	0,48	351
DCM-GE 100-2050/A/BAQE/7,5 T MCE 110/C	500	836	560	575	1135	956	-	156	220	180	Ø18	1132	175	100	670	266	404	M16	300	425	100	100	670	1135	1132	0,86	558

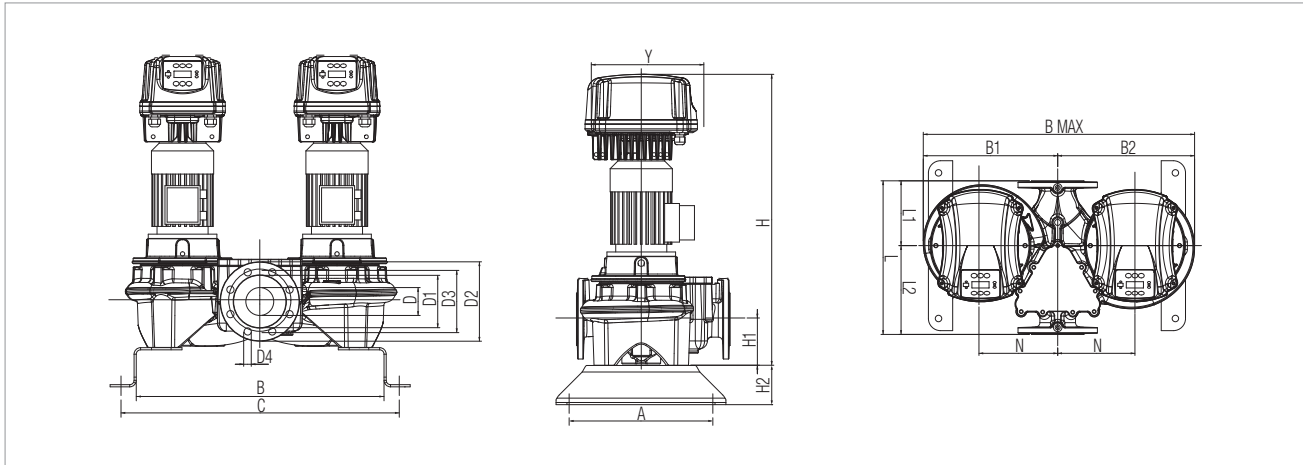
# DCM-GE 100 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



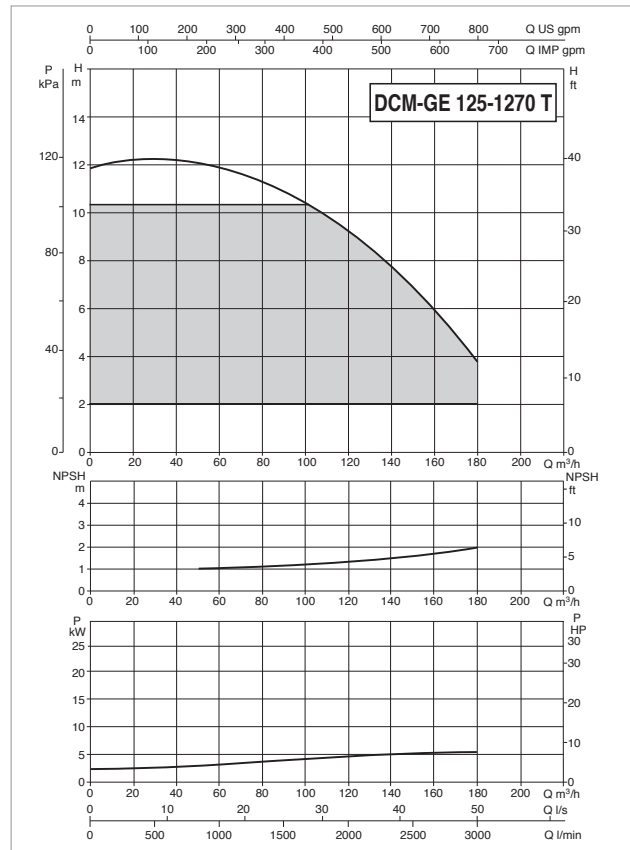
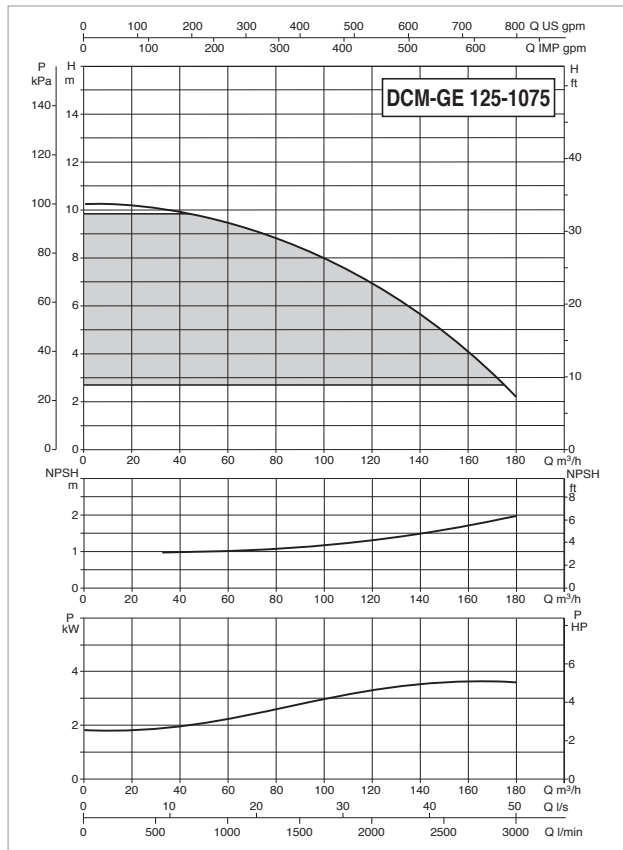
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCM-GE 100-2550/A/BAQE/11 T MCE 110/C*	3 x 400 V ~	4	1470	12,74	11	15	22,4
DCM-GE 100-3290/A/BAQE/15 T MCE 150/C*	3 x 400 V ~	4	1471	17,91	15	20	30,5

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
DCM-GE 100-2550/A/BAQE/11 T MCE 110/C	500	836	560	575	1135	956	-	156	220	180	8 HOLES Ø 18	1237	175	100	670	266	404	M16	300	425	100	100	670	1135	1237	0,94	565
DCM-GE 100-3290/A/BAQE/15 T MCE 150/C	500	836	560	575	1135	956	-	156	220	180	8 HOLES Ø 18	1292	175	100	670	266	404	M16	300	425	100	100	670	1135	1292	0,98	753

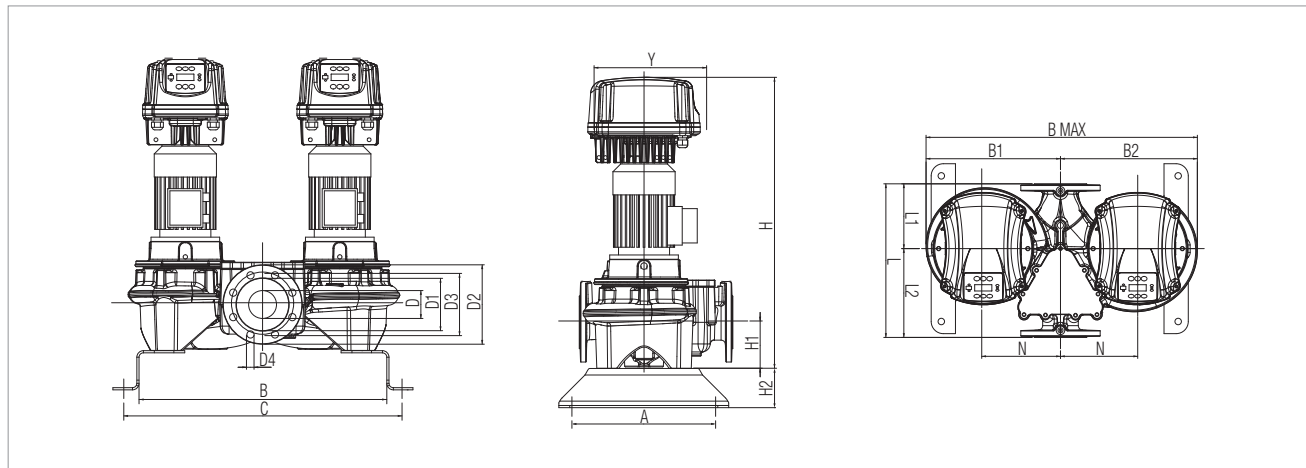
# DCM-GE 125 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



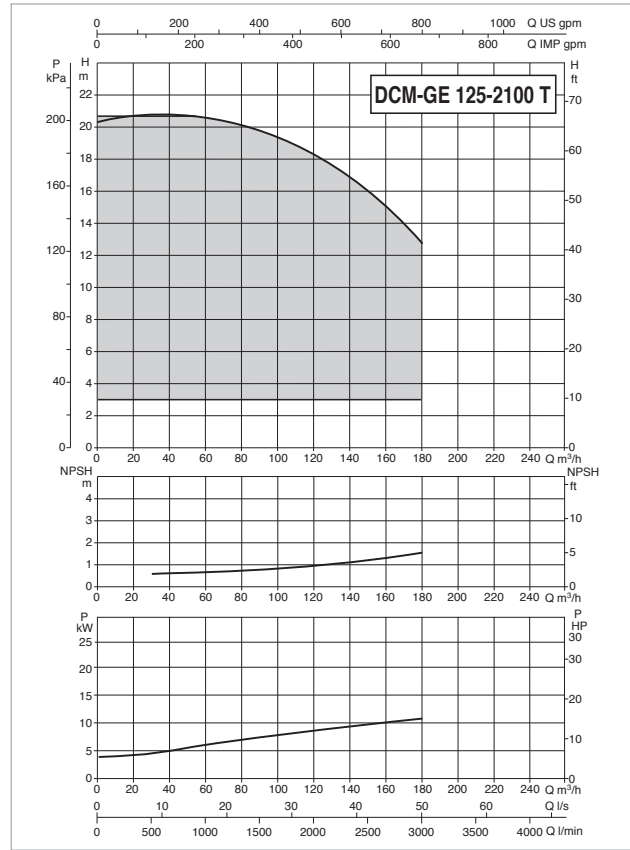
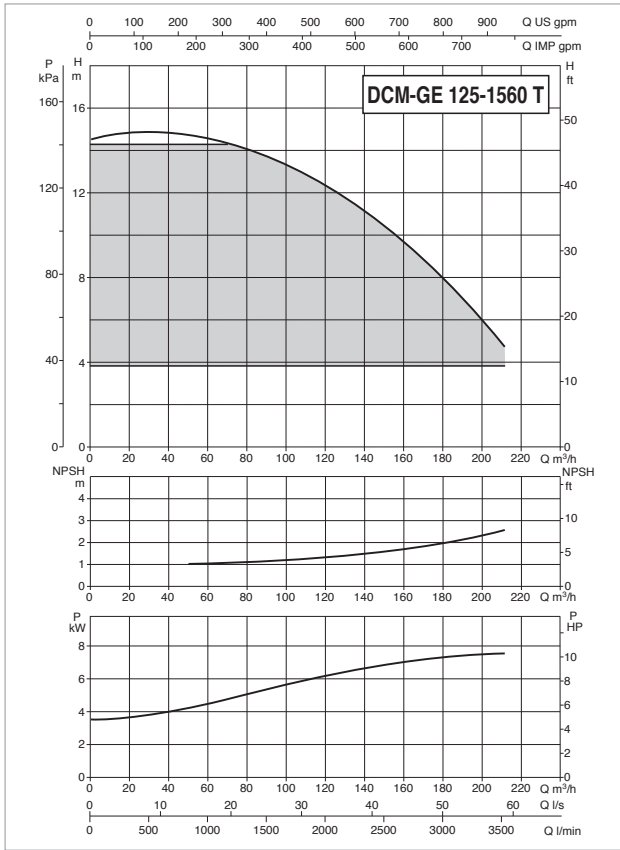
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCM-GE 125-1075/A/BAQE/4 T MCE 55/C*	3 x 400 V ~	4	1455	5,38	4	5,5	8,2
DCM-GE 125-1270/A/BAQE/5,5 T MCE 55/C*	3 x 400 V ~	4	1465	7,55	5,5	7,5	10,6

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
DCM-GE 125-1075/A/BAQE/4 T MCE 55/C	500	810	515	535	1050	930	-	185	250	210	8 HOLES Ø 14	1093	215	100	620	226	394	M16	300	352	125	125	620	1050	1093	0,71	501
DCM-GE 125-1270/A/BAQE/5,5 T MCE 55/C	500	810	515	535	1050	930	-	185	250	210	8 HOLES Ø 14	1089	215	100	620	226	394	M16	300	352	125	125	620	1050	1089	0,71	503

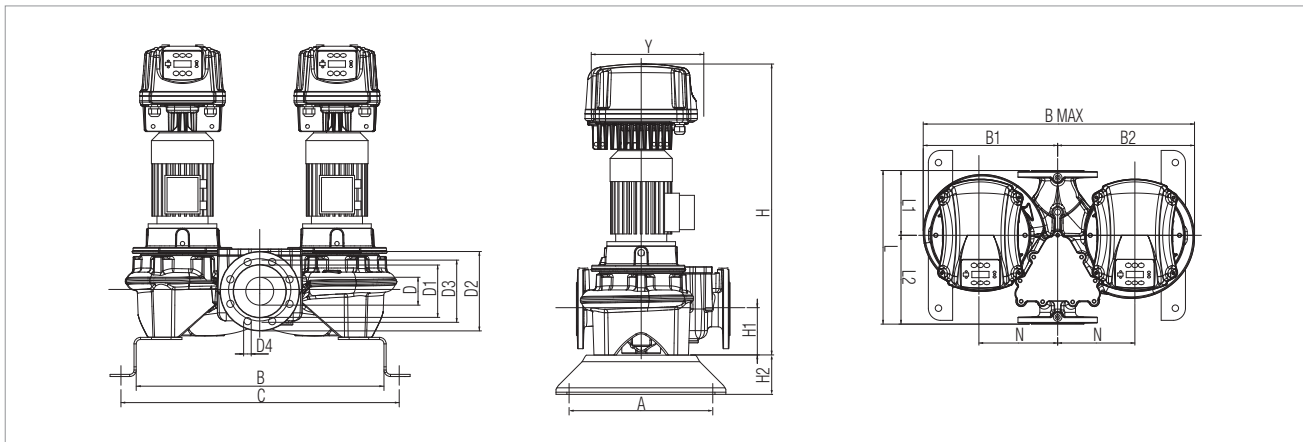
# DCM-GE 125 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCM-GE 125-1560/A/BAQE/7,5 T MCE 110/C*	3 x 400 V ~	4	1469	9,93	7,5	10	14,4
DCM-GE 125-2100/A/BAQE/11 T MCE 110/C	3 x 400 V ~	4	1475	14,3	11	15	22,4

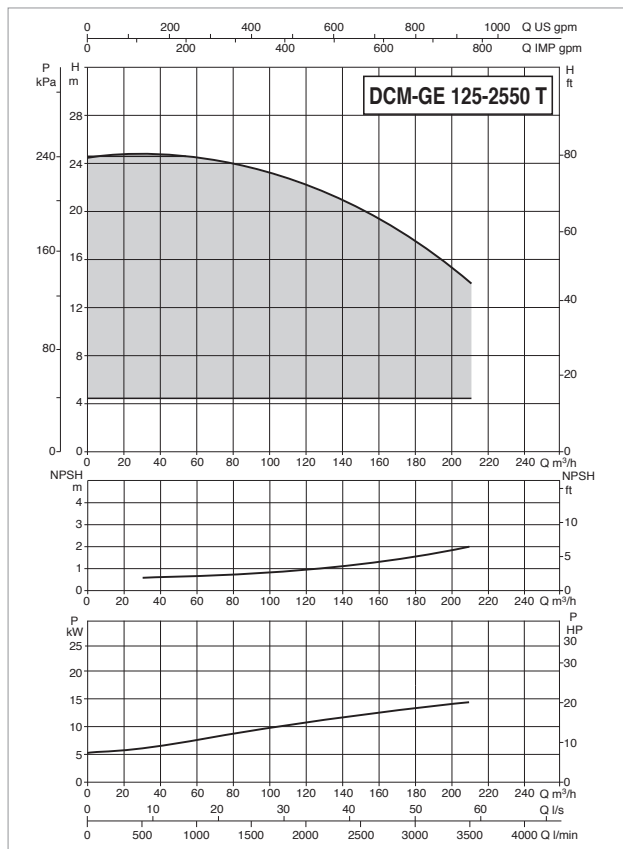
\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	D	DN	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
DCM-GE 125-1560/A/BAQE/7,5 T MCE 110/C	500	810	515	535	1050	930	-	185	250	210	8 HOLES Ø 14	1177	215	100	620	226	394	M16	300	425	125	125	620	1050	1177	0,77	538
DCM-GE 125-2100/A/BAQE/11 T MCE 110/C	500	810	555	571	1126	930	-	185	250	210	8 HOLES Ø 14	1297	215	100	800	316	484	M16	300	425	125	125	800	1126	1297	1,17	768



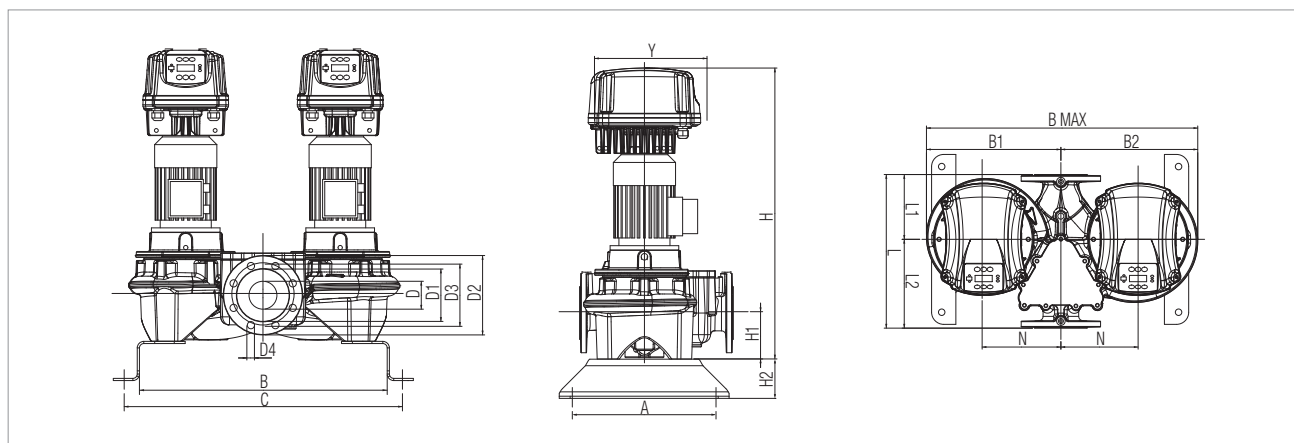
# DCM-GE 125 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



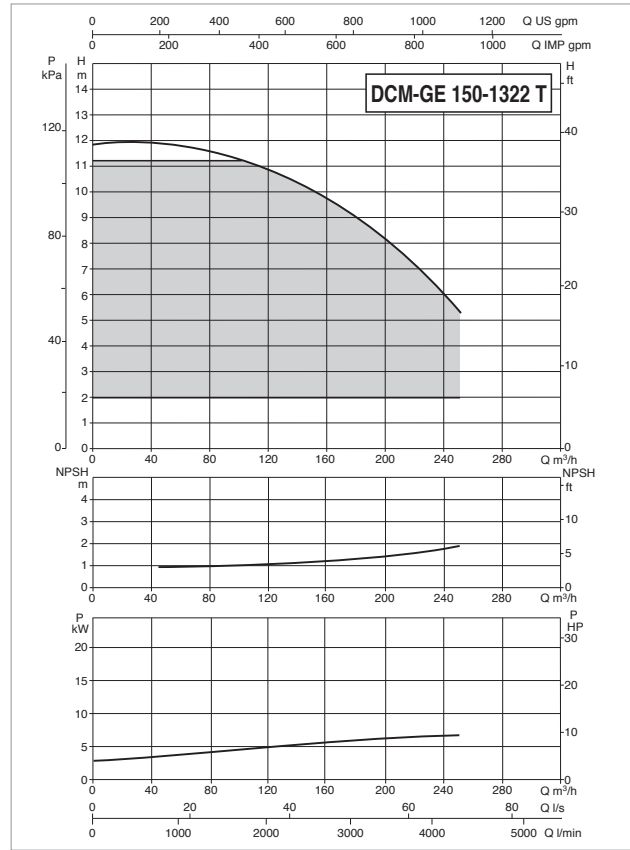
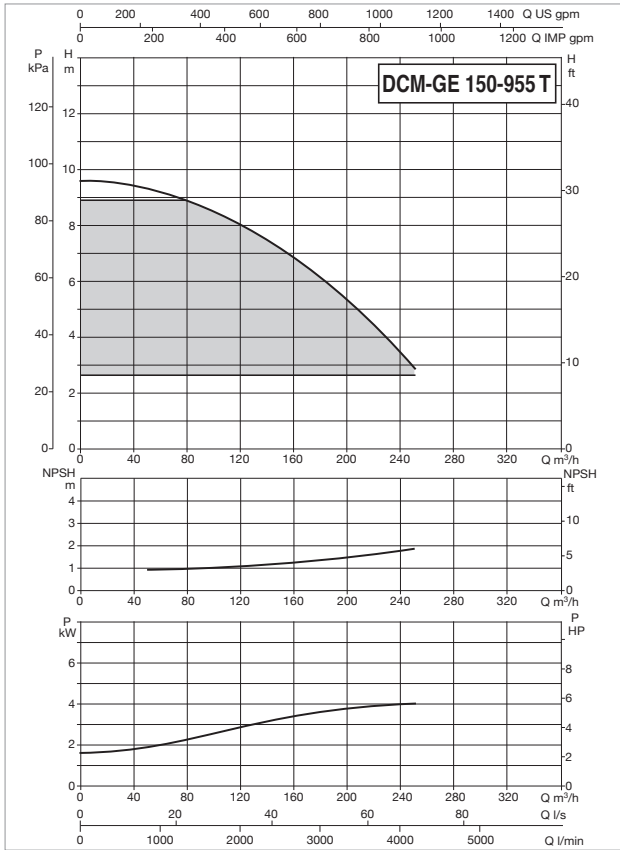
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCM-GE 125-2550/A/BAQE/15 T MCE 150/C*	3 x 400 V ~	4	1470	17,07	15	20	30,5

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DN	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
DCM-GE 125-2550/A/BAQE/15 T MCE 150/C	500	810	555	571	1126	930	-	185	250	210	8 HOLES Ø 14	1352	215	100	800	316	484	M16	300	425	125	125	800	1126	1352	1,22	880

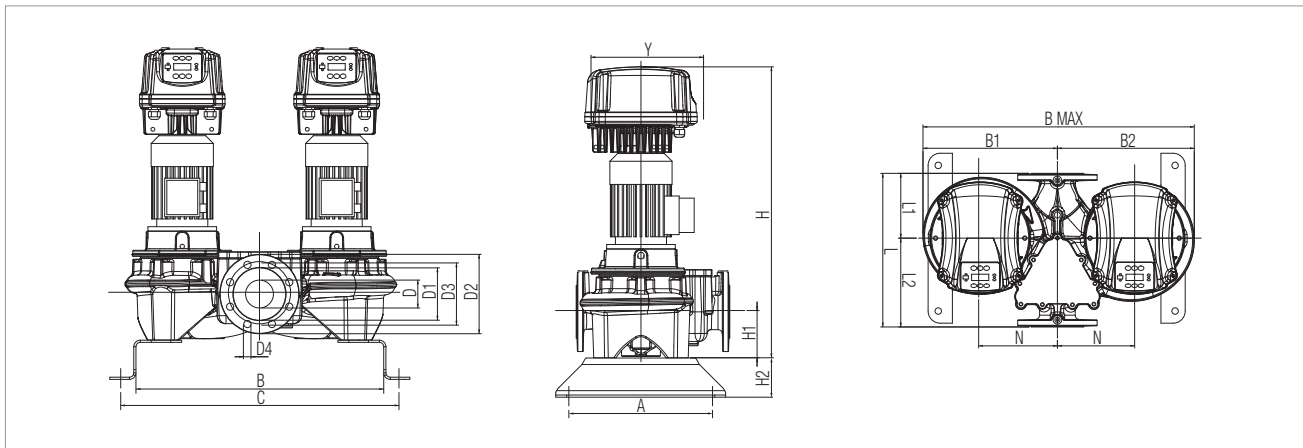
# DCM-GE 150 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

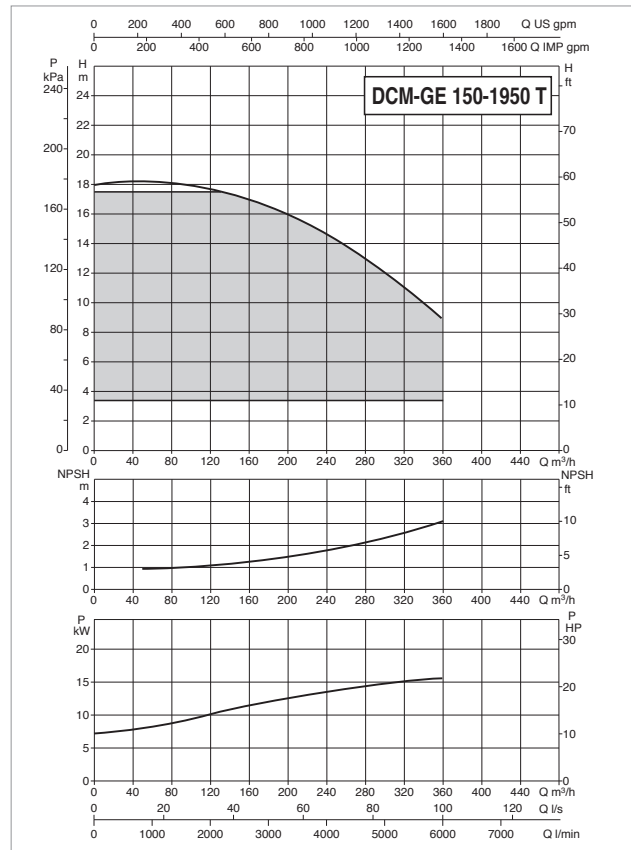
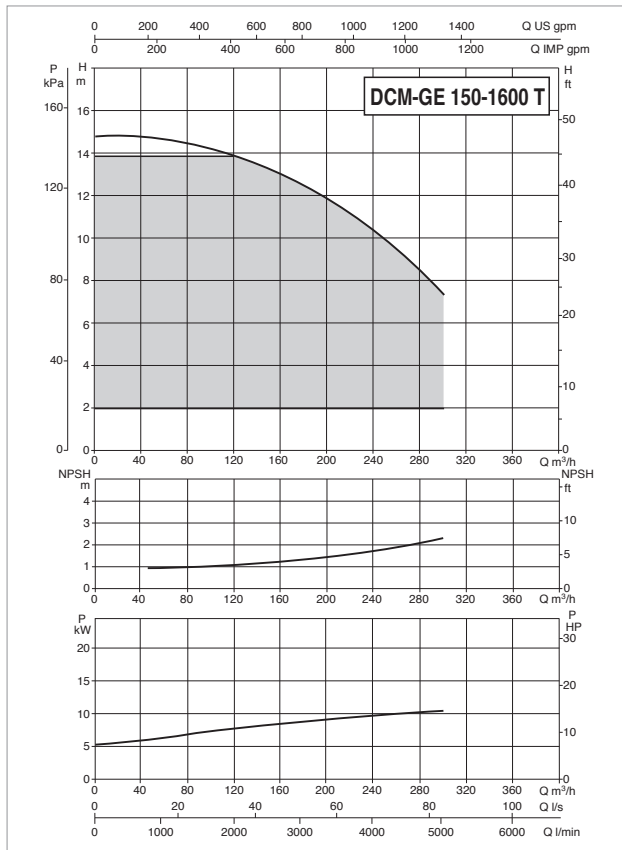


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCM-GE 150-955/A/BAQE/5,5 T MCE 55/C*	3 x 400 V ~	4	1460	7,55	5,5	7,5	10,6
DCM-GE 150-1322/A/BAQE/7,5 T MCE 110/C	3 x 400 V ~	4	1460	9,86	7,5	10	14,4

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS L/A L/B H	VOL. (m <sup>3</sup> )	WEIGHT Kg
DCM-GE 150-955/A/BAQE/5,5 T MCE 55/C	500	805	550	580	1130	925	-	210	285	240	8 HOLES Ø 22	1112	215	100	800	296	504	M16	300	352	150	150	800 1130 1112	1,01	658
DCM-GE 150-1322/A/BAQE/7,5 T MCE 110/C	500	805	550	580	1130	925	-	210	285	240	8 HOLES Ø 22	1200	215	100	800	296	504	M16	300	425	150	150	800 1130 1200	1,08	693

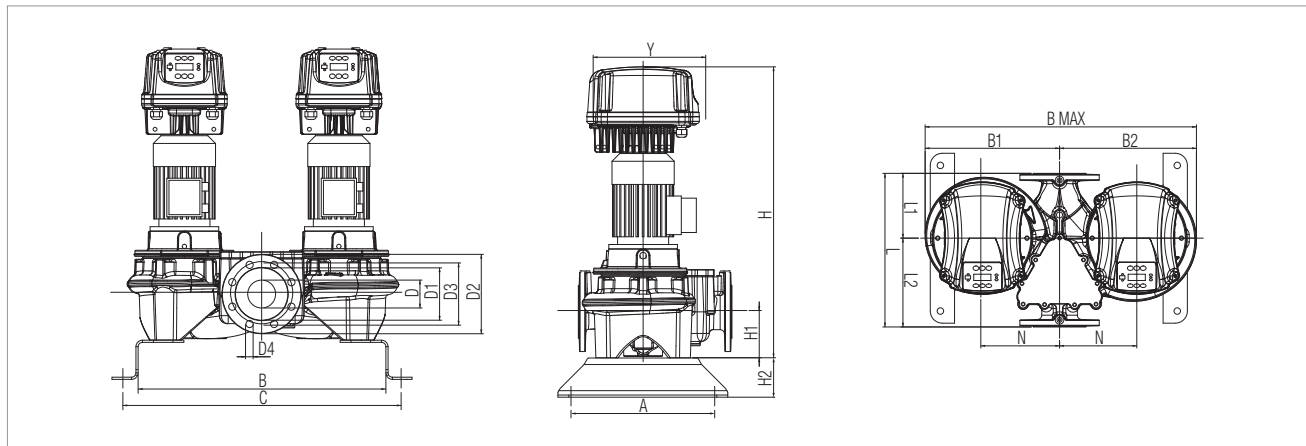
# DCM-GE 150 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCM-GE 150-1600/A/BAQE/11 T MCE 110/C*	3 x 400 V ~	4	1450	14,97	11	15	22,4
DCM-GE 150-1950/A/BAQE/15 T MCE 150/C*	3 x 400 V ~	4	1470	19,31	15	20	30,5

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
DCM-GE 150-1600/A/BAQE/11 T MCE 110/C	500	805	550	580	1130	925	-	210	285	240	8 HOLES ∅ 22	1305	215	100	800	296	504	M16	300	425	150	150	800	1130	1305	1,18	719
DCM-GE 150-1950/A/BAQE/15 T MCE 150/C	500	805	550	580	1130	925	-	210	285	240	∅ 22	1360	215	100	800	296	504	M16	300	425	150	150	800	1130	1360	1,23	818

# CPE / CP-GE / DCPE / DCP-GE

## ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

**D CONNECT** ▶ PAGE 129



### TECHNICAL DATA

**Flow rate (range):** up to 210 m<sup>3</sup>/h

**Head:** up to 102 m

**Type of pumped liquid:** clean, free from solid or abrasive substances, non-viscous, non-aggressive, non-crystallized and chemically neutral.

**Glycol percentage (maximum):** 30%

**Liquid temperature (range):** from -10°C to +140°C

**Maximum ambient temperature:** +40°C

**Operation pressure (maximum):** 16 bar / 1600 kPa

**Flanging or threading:** with PN 16

**Motor protection class:** IP 55

**Motor insulation class:** F

**Impeller material:** cast iron

**Single phase power input:** 230 V 50 Hz

**Three phase power input:** 3x230 V 50 Hz / 3x400 V 50 Hz

**Type of installation:** fixed in horizontal position or vertical with motor in up position

Electronic in-line pumps for water circulation in conditioning and heating systems in the presence of solar thermal panels (solar collectors) and for circulation of drinkable hot water in commercial building service. Support for a wide range of temperature. Twin version are the one with the D letter. Possibility of remote control thanks to the DConnect service (DConnect Box supplied separately).

### CONSTRUCTION FEATURES OF THE PUMP

Suction and delivery ports are flanged with threaded connectors for control gauges. Pump body and motor support in cast iron, impeller in cast iron or technopolymer depending on the model (bronze impeller only on request on DN 65 or DN 150). Standardized mechanical seal according to DIN 24960 in carbon-silicon carbide with EPDM OR rings. Counter flanges on request: DN 65, DN 80, DN 100, DN 125, DN 150 with PN 16.

### CONSTRUCTION FEATURES OF THE MOTOR

Air-cooled asynchronous motor with rotor mounted on ball bearings. Motor shaft in AISI 304 stainless steel.

### CONSTRUCTION FEATURES OF THE ELECTRONIC

MCE-C variable frequency drive installed as standard for greater pump operating efficiency. It is equipped with a display for configuration and control. MEC-C is settable in pressure regulation mode, differentiates constant, constant curve, constant curve with external analogue signal, with the proportional differential pressure. The variable frequency drive allows energy savings and protection against water hammer. It must be mounted on the motor fan cover to take advantage of the cooling. It is possible to connect two MCE-C variable frequency drive together (through a special connection cable, supplied separately) for the creation of twin units. Compatible with the DConnect service.

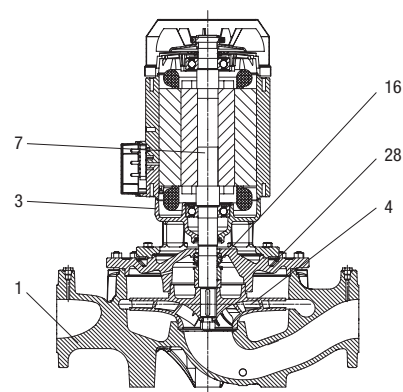
# CPE / CP-GE / DCPE / DCP-GE

ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

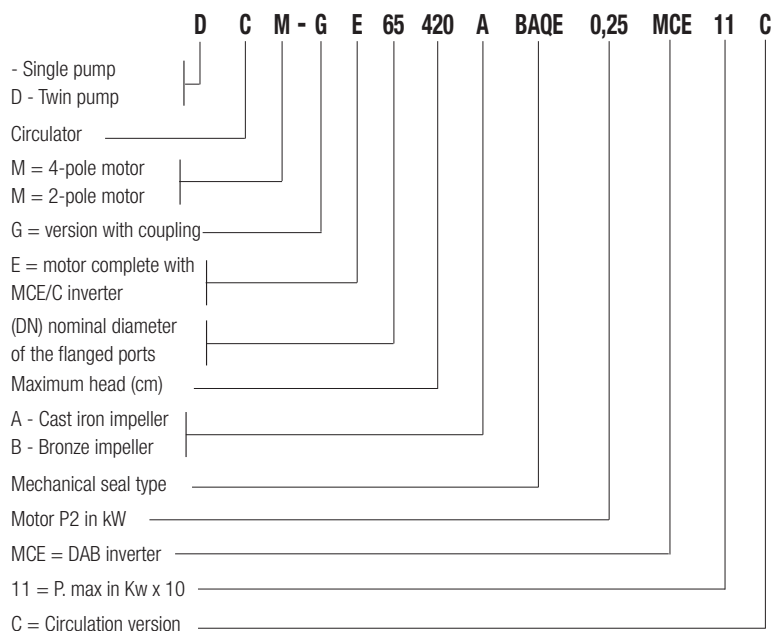
## MATERIALS

N.	PARTS	MATERIALS
1	PUMP BODY	CAST IRON 250 UNI ISO 185
3	SUPPORT	CAST IRON 250 UNI ISO 185
4	IMPELLER	CAST IRON 250 UNI ISO 185
7	SHAFT WITH ROTOR	AISI 303 STAINLESS STEEL X10 CrNiS 1809 UNI 6900/71
16	MECHANICAL SEAL	CARBON/GRAPHITE
28	OR RING	EPDM RUBBER

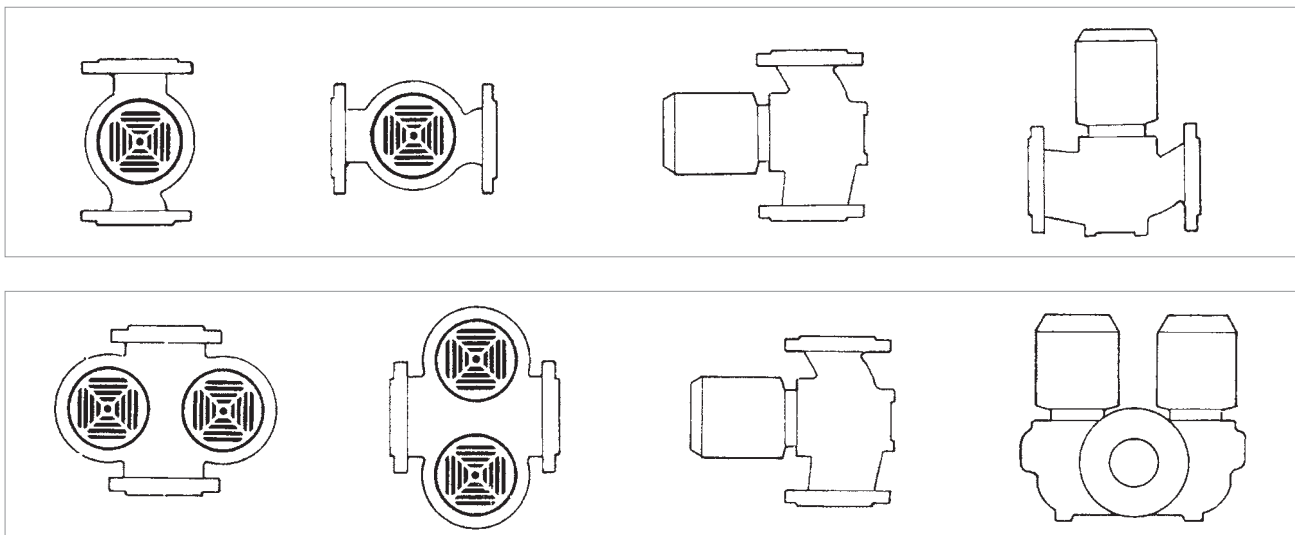
\* In contact with the liquid



### - Legend: (example)



**Installation: horizontal or vertical position, provided that the motor is always above the pump.**



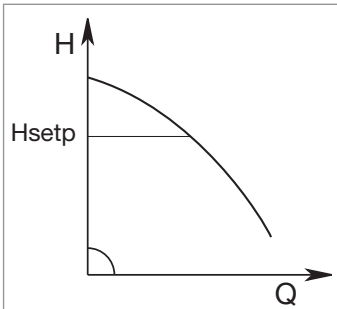
## MCE/C INVERTER

### MODES OF OPERATION

All the functions listed below can be consulted by the users (including less experienced ones) by simply scrolling through the MCE/C menu. The calibration and the modification of the parameters are protected, and can only be completed by expert users.

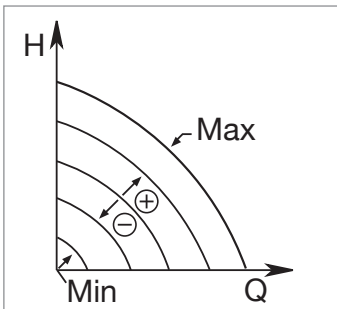
#### 1 - $\Delta P$ -c constant differential pressure adjustment mode

The  $\Delta P$ -c adjustment mode keeps the differential pressure of the system constantly at the H (setp) value set, even in case of variation of the flow rate. This is the standard adjustment used. It can be set directly from the MCE/C control panel. The inverter keeps the differential pressure (H setp) constant even in case of flow variation.



This adjustment is particularly indicated for the following systems:

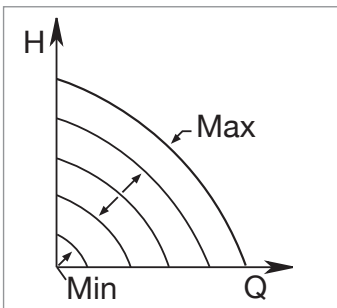
- a. two-pipe heating systems with thermostat valves**
- b. underfloor heating systems with thermostat valves**
- c. single-pipe heating systems with thermostat valves and calibration valves**
- d. systems with primary circuit pumps**



#### 2 - Constant curve adjustment modes

##### 2.1 - Constant curve adjustment

The rotation speed is kept at a constant number of revolutions. This rotation speed can be set between a minimum value and the nominal frequency of the circulation pump (e.g. between 15 Hz and 50 Hz). This mode can be set using the control panel on the MCE cover.

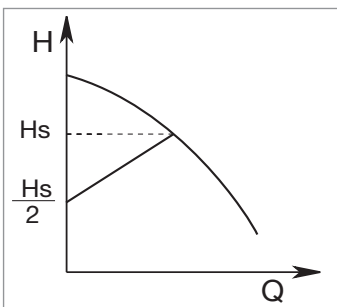


##### 2.2 - Adjustment of the constant curve with external analogue signal

The rotation speed is kept at a constant number of revolution in proportion with the voltage of the external analogue signal.

The rotation speed changes in a linear way, between the nominal frequency of the pump when  $V_{in} = 10$  V, and the minimum frequency when  $V_{in} = 0$  V.

This mode can be set using the control panel on the MCE cover.



#### 3 - $\Delta P$ -v \* proportional differential pressure adjustment mode

With  $\Delta P$ -v adjustment mode, with the variation of the flow rate, the value of the delivery of the head also varies in a linear manner, from Hsetp to Hsetp/2.

For more information refer to the technical appendix.

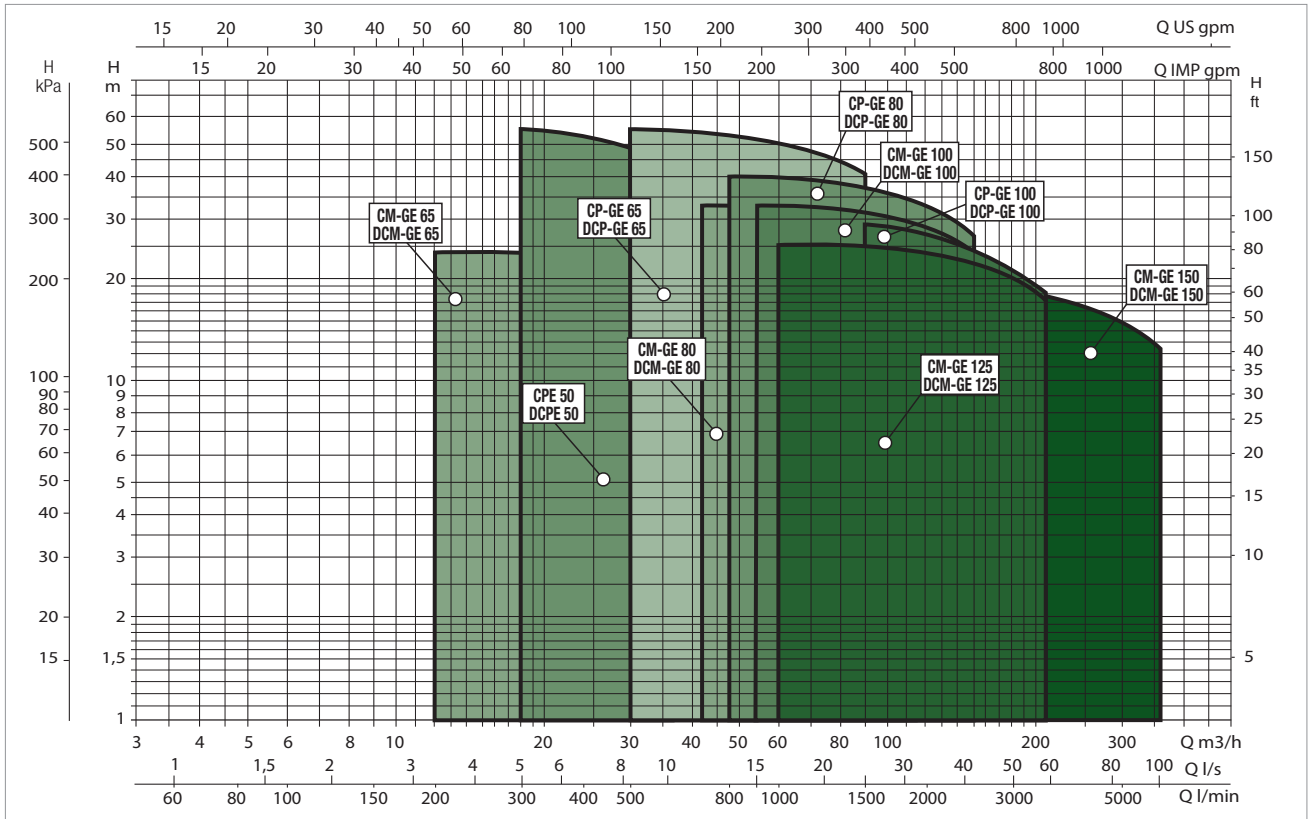
# ELECTRIC IN-LINE PUMPS

## ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

### PERFORMANCE RANGE

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

### GRAPHIC SELECTION TABLE



### SELECTION TABLE - CPE - 2 POLES

MODEL	P2 NOMINAL		Q= m³/h	Q= l/min																							
	kW	HP		0	100	200	300	400	450	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1700	1900	2000	2500	3000	3500	
CP-GE 65-1470	1,5	2	H (m)	14,7	14,5	14,3	13,8	13	-	11,8	10,5	8,6	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CP-GE 65-2280	3	4		22,8	22,5	22,3	22	21,2	-	20,2	19	17,4	15,5	13,5	-	-	-	-	-	-	-	-	-	-	-	-	-
CP-GE 65-2640	4	5,5		26,4	26,2	26	25,6	25	-	24	23	21,5	19,5	17,5	15	-	-	-	-	-	-	-	-	-	-	-	-
CP-GE 65-3400	5,5	7,5		34	-	-	34	33,5	-	32,5	31	29,5	27	24	-	-	-	-	-	-	-	-	-	-	-	-	-
CP-GE 65-4100	7,5	10		41	-	-	41	41	-	40	39	37,5	35,5	33	30	26,5	-	-	-	-	-	-	-	-	-	-	-
CP-GE 65-4700	11	15		47	-	-	-	-	-	45,5	45	44,3	43,3	42	40,8	39	37	35	32,3	-	-	-	-	-	-	-	-
CP-GE 65-5500	15	20		55	-	-	-	-	-	56	55,5	54	53,5	52	51	49	47,5	45,5	43	41	-	-	-	-	-	-	-

# CPE / CP-GE / DCPE / DCP-GE

## ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

### SELECTION TABLE - CP-GE - 2 POLES

MODEL	P2 NOMINAL		Q= m³/h	H (m)																							
	kW	HP		Q= l/min	0	6	12	18	24	27	30	36	42	48	54	60	66	72	78	84	90	102	114	120	150	180	210
CP-GE 80-1400	2,2	3	14	-	-	-	13,8	-	13,3	12,9	12,5	12,1	11,4	10,8	10	9,2	8,3	7,5	-	-	-	-	-	-	-	-	-
CP-GE 80-2050	4	5,5	20,5	-	-	-	20	-	19,5	19,1	18,5	18	17,5	16,5	15,8	14,8	14	12,5	11,5	-	-	-	-	-	-	-	-
CP-GE 80-2400	5,5	7,5	24	-	-	-	23,6	-	23,5	23,2	22,8	22,2	21,5	21	20	19,1	18,5	17,5	16,5	13,4	-	-	-	-	-	-	-
CP-GE 80-2770	7,5	10	27,7	-	-	-	-	-	-	-	-	27,5	27,3	27,1	26,7	25,8	25,6	24,9	24,5	23	21,2	20,1	-	-	-	-	-
CP-GE 80-3250	11	15	32,5	-	-	-	-	-	-	-	-	32,2	32	31,8	31,3	30,2	30	29,2	28,7	27	24,8	23,6	-	-	-	-	-
CP-GE 80-4000	15	20	40	-	-	-	-	-	-	-	-	40,2	40	39,8	39,5	39	38,5	38,2	37,5	36	34,5	33,5	26,9	-	-	-	-
CP-GE 100-1600	4	5,5	16	-	-	-	-	-	-	15	14,6	14,2	13,7	13,3	12,8	12,3	11,7	11	10,4	9,3	8	-	-	-	-	-	-
CP-GE 100-1950	5,5	7,5	19,5	-	-	-	-	-	-	19	18,9	18,7	18,4	18,1	17,5	17,2	16,9	16,5	15,8	14,5	13	12	-	-	-	-	-
CP-GE 100-2350	7,5	10	23,5	-	-	-	-	-	-	23,1	23	22,8	22,6	22,5	22	21,6	21,1	20,7	20,2	19	17,5	14,8	12	-	-	-	-
CP-GE 100-2400	11	15	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	21,4	20,4	20	17,4	16,8	12	-	-
CP-GE 100-3050	15	20	30,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	28,4	27,5	27	24,5	21,3	18,3	-	-

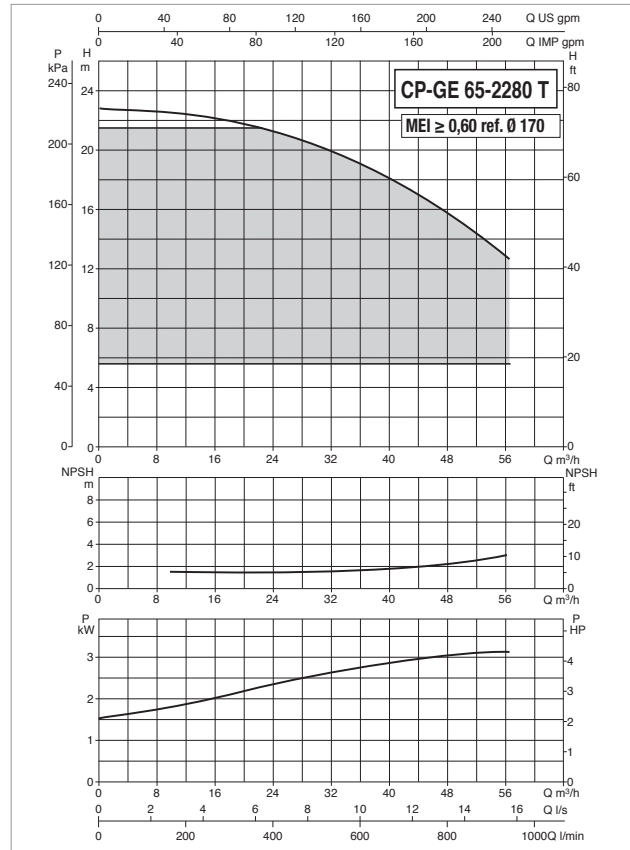
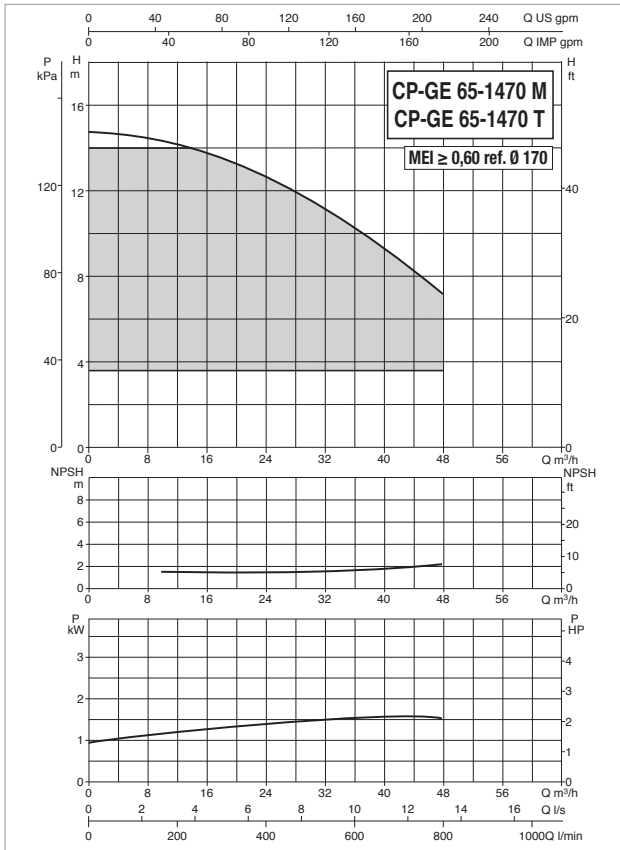
### SELECTION TABLE - DCPE - 2 POLES

MODEL	P2 NOMINAL		Q= m³/h	H (m)																							
	kW	HP		Q= l/min	0	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	102	114	120	150	180	210	
DCP-GE 65-1470	1,5	2	14,4	14,2	13,8	13,1	12	10,6	9	7	5,3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DCP-GE 65-2280	3	4	22,3	-	-	21,1	19,9	18,4	16,8	14,7	12,5	10,2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DCP-GE 65-2640	4	5,5	25,9	-	-	24,6	23,7	22,2	20,7	18,8	16,4	14	11,4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DCP-GE 65-3400	5,5	7,7	33,3	-	-	32,5	31,4	29,7	27,4	25	21,7	18,2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DCP-GE 65-4100	7,5	10	40,2	-	-	39,6	39	37,4	35,7	33,4	30,7	27,5	23,9	20,1	-	-	-	-	-	-	-	-	-	-	-	-	-
DCP-GE 65-4700	11	15	46,4	-	-	-	-	44,3	43,6	42,6	41,3	39,6	38,1	35,9	33,6	31,3	-	-	-	-	-	-	-	-	-	-	-
DCP-GE 65-5500	15	20	54,3	-	-	-	-	54,7	53,9	52,1	51,2	49,4	48	45,6	43,7	41,3	38,4	36,1	-	-	-	-	-	-	-	-	-
DCP-GE 80-1400	2,2	3	13,7	-	-	-	14,3	13,7	13	12,3	11,4	10,3	9,1	7,8	6,5	5,2	4	-	-	-	-	-	-	-	-	-	-
DCP-GE 80-2050	4	5,5	20,1	-	-	-	20,8	20,1	19,5	18,4	17,4	16,2	14,6	13,1	11,3	9,7	7,7	6,1	-	-	-	-	-	-	-	-	-
DCP-GE 80-2400	5,5	7,5	23,5	-	-	-	24,5	24,4	23,9	23,1	22,1	20,8	19,6	17,9	16,3	14,8	13	11,2	7,1	-	-	-	-	-	-	-	-
DCP-GE 80-2770	7,5	10	27,1	-	-	-	-	-	-	-	26,6	26	25,3	24,3	22,8	21,9	20,5	19,3	16,2	13	11,3	-	-	-	-	-	-
DCP-GE 80-3250	11	15	31,9	-	-	-	-	-	-	-	31,2	30,5	29,7	28,5	26,7	25,6	24	22,6	19,1	15,2	13,2	-	-	-	-	-	-
DCP-GE 80-4000	15	20	39,2	-	-	-	-	-	-	-	39,7	39,1	38,5	37,7	36,7	35,6	34,6	33,2	30,1	26,9	25,1	15,1	-	-	-	-	-
DCP-GE 100-1600	4	5,5	16	-	-	-	-	-	15,8	15,2	14,5	13,6	12,8	11,8	10,8	9,6	8,4	7,3	5,1	3	-	-	-	-	-	-	-
DCP-GE 100-1950	5,5	7,5	19,5	-	-	-	-	-	20,1	19,8	19,2	18,5	17,7	16,5	15,5	14,5	13,3	11,8	9	6	4,5	-	-	-	-	-	-
DCP-GE 100-2350	7,5	10	23,5	-	-	-	-	-	24,5	24,4	24	23,6	23,1	22,2	21,4	20,4	19,4	18,3	15,7	12,9	11,7	4,5	-	-	-	-	-
DCP-GE 100-2400	11	15	23,6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21,9	21	19,7	19,1	15,5	13,4	8,2	-	-	-
DCP-GE 100-3050	15	20	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28,9	27,9	26,5	25,8	21,8	17	12,5	-	-	-



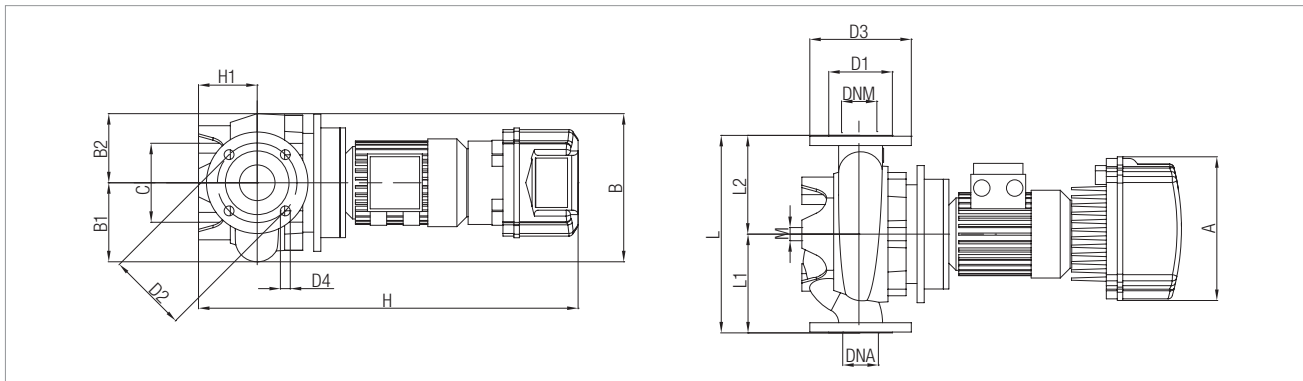
# CP-GE 65 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



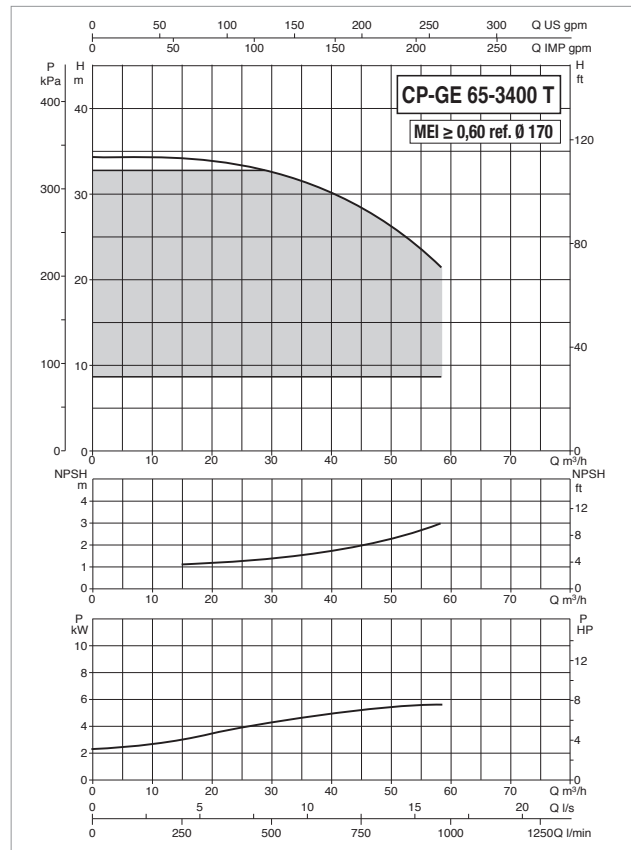
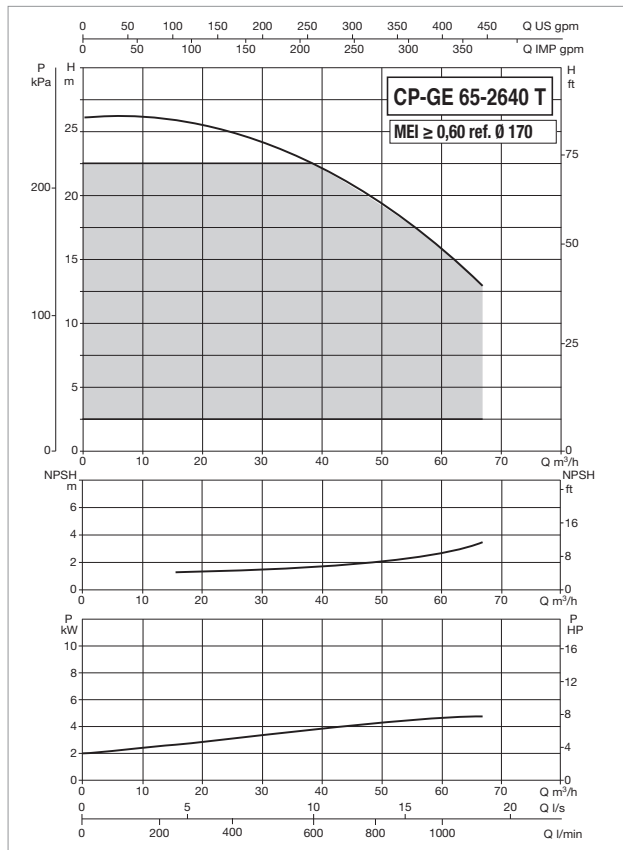
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CP-GE 65-1470/A/BAQE/1,5 M MCE 11/C*	1 x 220-240 V ~	2	2883	1,96	1,5	2	14,5
CP-GE 65-1470/A/BAQE/1,5 T MCE 11/C*	3 x 400 V ~	2	2883	1,96	1,5	2	3
CP-GE 65-2280/A/BAQE/3 T MCE 30/C*	3 x 400 V ~	2	2882	3,55	3	4	5,6

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m³)	WEIGHT Kg
																							L/A	L/B	H		
CP-GE 65-1470/A/BAQE/1,5 M MCE 11/C	262	270	144	126	-	144	-	122	145	185	4x18	725	105	-	360	180	180	16	-	-	65	65	650	400	945	0,25	67
CP-GE 65-1470/A/BAQE/1,5 T MCE 11/C	262	270	144	126	-	144	-	122	145	185	4x18	725	105	-	360	180	180	16	-	-	65	65	650	400	945	0,25	69,6
CP-GE 65-2280/A/BAQE/3 T MCE 30/C	353	270	144	126	-	144	-	122	145	185	4x18	808	105	-	360	180	180	16	-	-	65	65	650	400	945	0,25	88

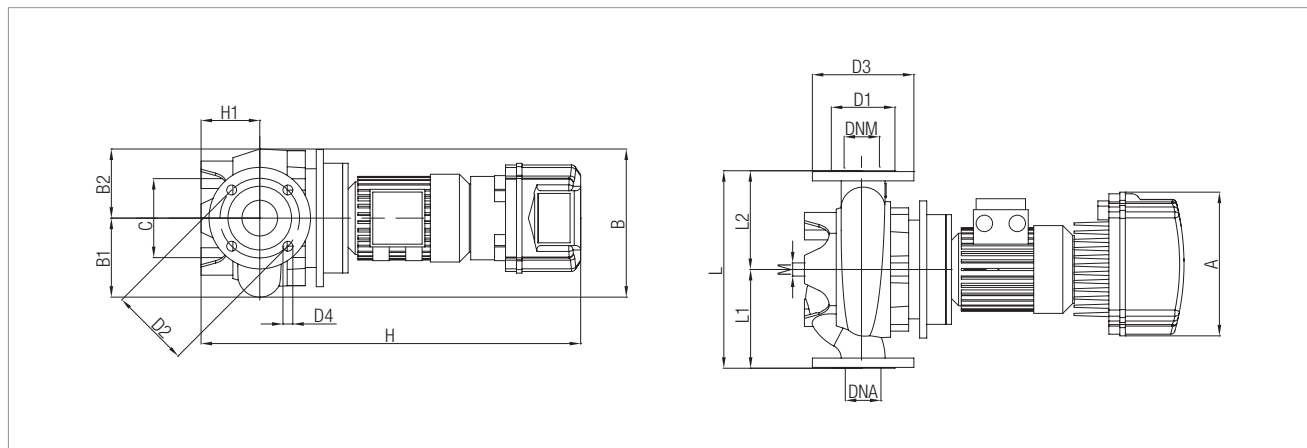
# CP-GE 65 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



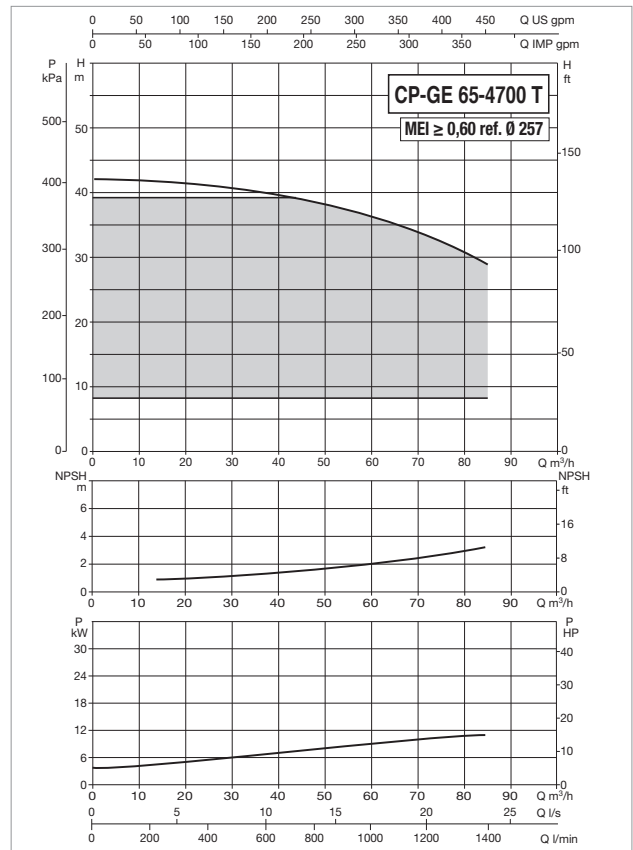
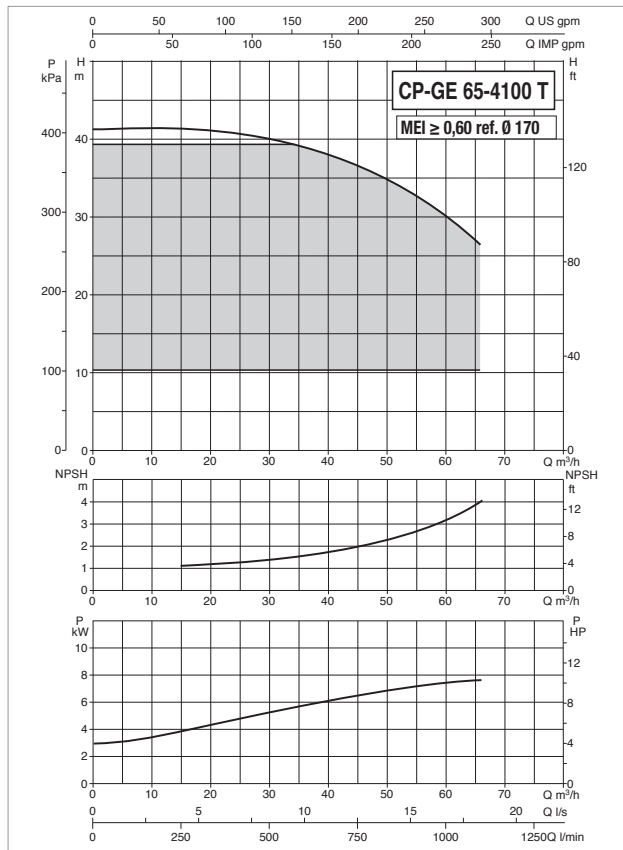
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CP-GE 65-2640/A/BAQE/4 T MCE 30/C*	3 x 400 V ~	2	2910	4,77	4	5,5	8,9
CP-GE 65-3400/A/BAQE/5,5 T MCE 55/C*	3 x 400 V ~	2	2913	6,94	5,5	7,5	10,2

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	H	L/A	L/B	H																					
CP-GE 65-2640/A/BAQE/4 T MCE 30/C	353	270	144	126	-	144	-	122	145	185	4x18	808	105	-	360	180	180	16	-	-	65	65	650	400	945	0,25	95
CP-GE 65-3400/A/BAQE/5,5 T MCE 55/C	353	270	144	126	-	144	-	122	145	185	4x18	936	105	-	360	180	180	16	-	-	65	65	650	400	945	0,25	128

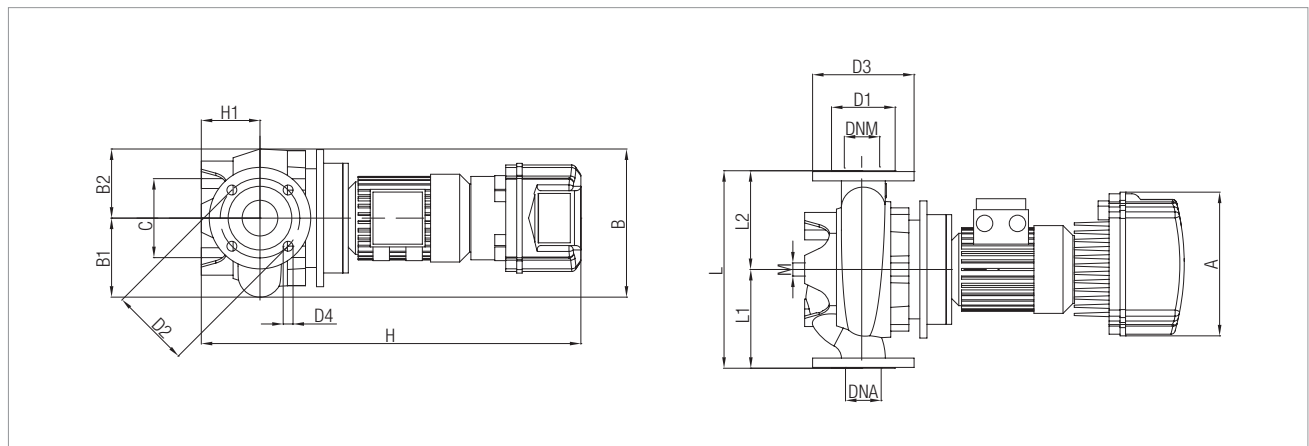
# CP-GE 65 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



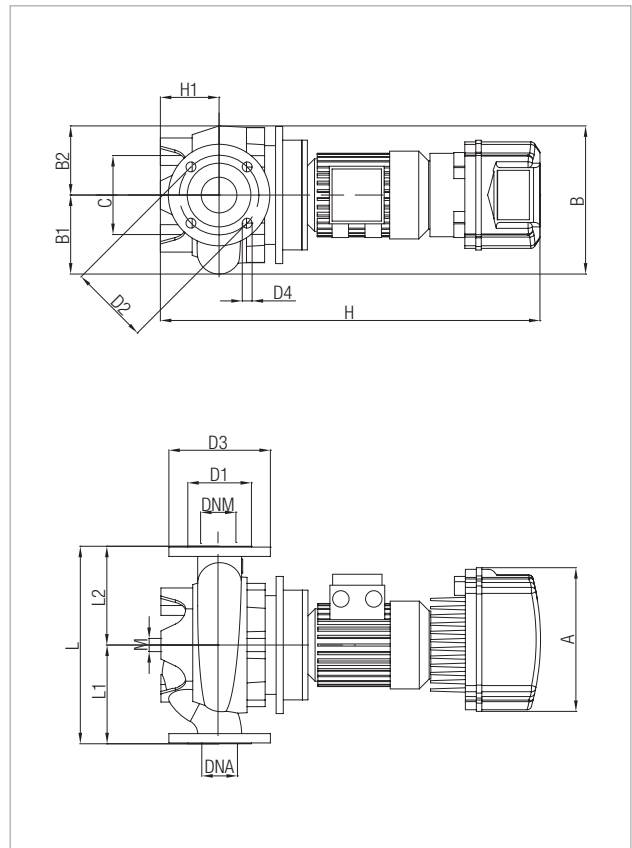
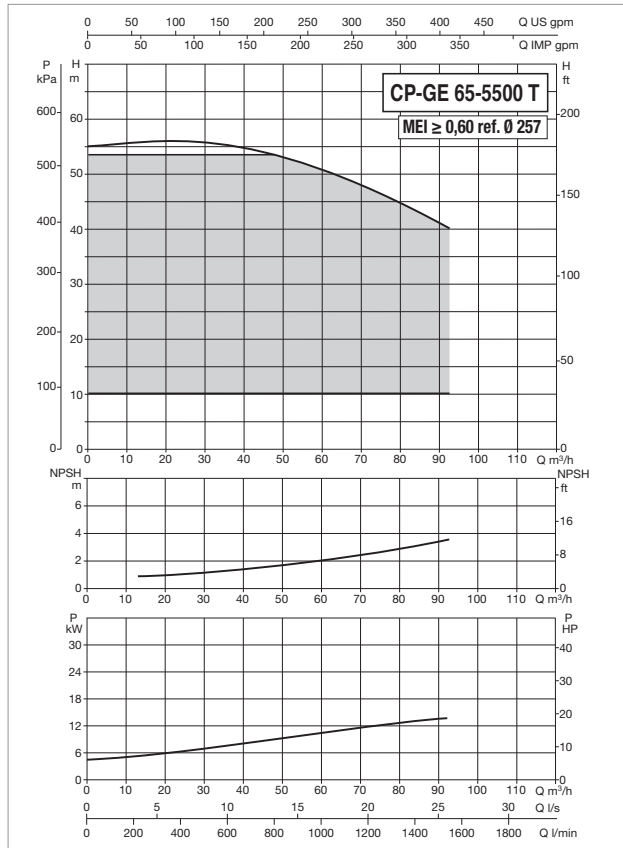
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CP-GE 65-4100/A/BAQE/7,5 T MCE 55/C*	3 x 400 V ~	2	2900	8,76	7,5	10	16,5
CP-GE 65-4700/A/BAQE/11 T MCE 110/C*	3 x 400 V ~	2	2940	14,75	11	15	19,9

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	H																								
CP-GE 65-4100/A/BAQE/7,5 T MCE 55/C	353	343	151	151	-	144	-	122	145	185	4x18	1024	105	-	360	180	180	16	-	-	65	65	650	400	945	0,25	131
CP-GE 65-4700/A/BAQE/11 T MCE 110/C	426	343	180	176	-	144	-	122	145	185	4x18	1099	125	-	475	237,5	237,5	16	-	-	65	65	650	400	945	0,25	209

# CP-GE 65 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

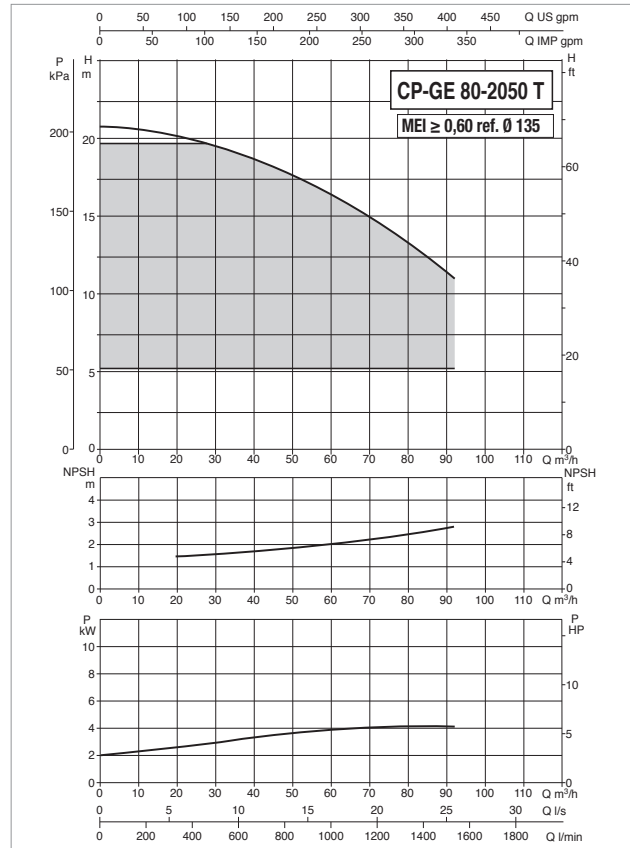
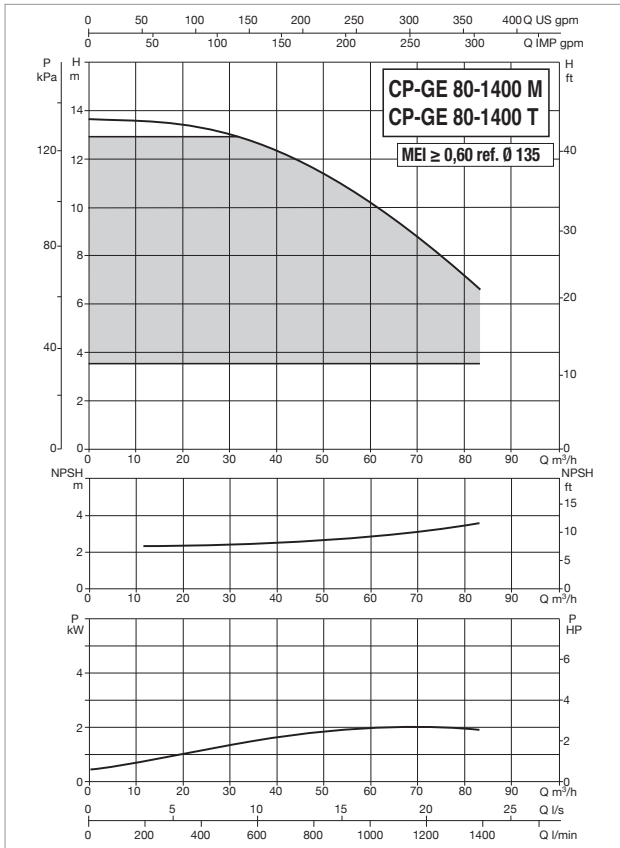
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CP-GE 65-5500/A/BAQE/15 T MCE 150/C*	3 x 400 V ~	2	2943	18,07	15	20	26,8

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A		L/B		H																						
CP-GE 65-5500/A/BAQE/15 T MCE 150/C	426	343	180	176	-	144	-	122	145	185	4x18	1099	125	-	475	237,5	237,5	16	-	-	65	65	700	600	970	0,41	227

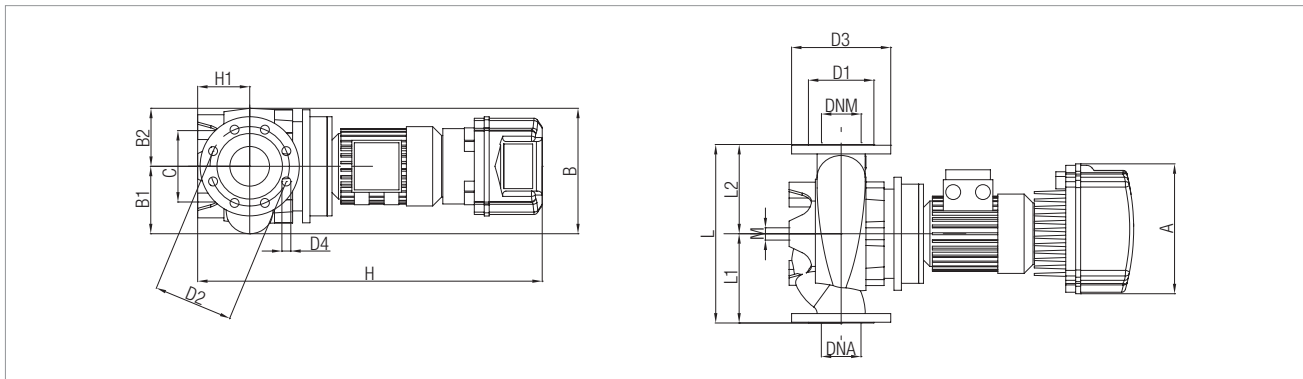
# CP-GE 80 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



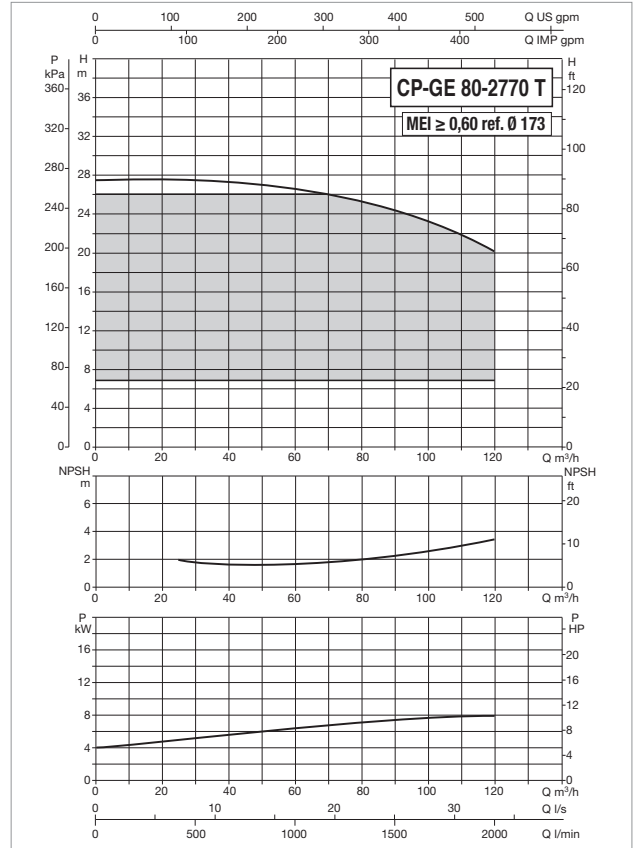
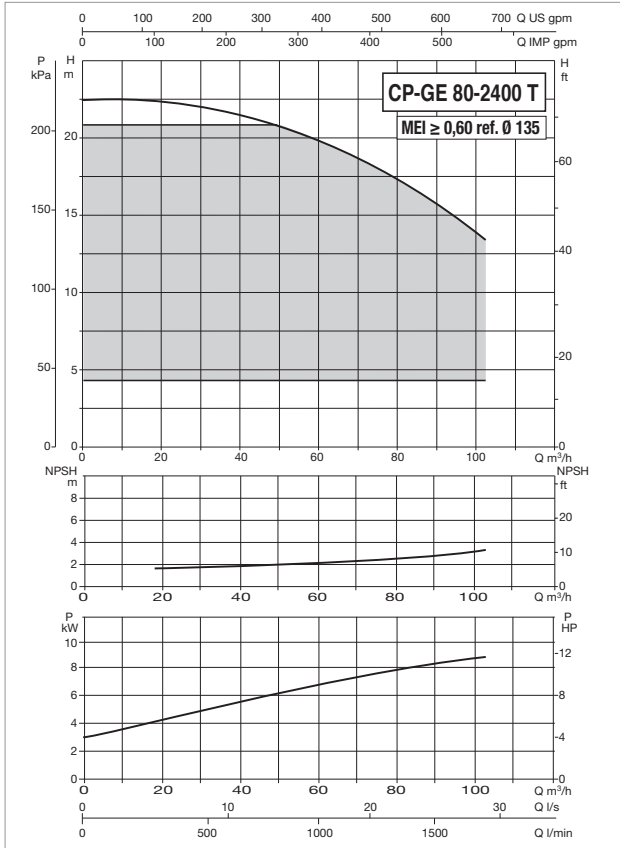
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CP-GE 80-1400/A/BAQE/2,2 T MCE 30/C*	3 x 400 V ~	2	2874	2,94	2,2	3	4,6
CP-GE 80-1400/A/BAQE/2,2 M MCE 15/C*	1 x 220-240 V ~	2	2874	2,73	2,2	3	19,4
CP-GE 80-2050/A/BAQE/4 T MCE 30/C*	3 x 400 V ~	2	2914	4,77	4	5,5	8,9

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
CP-GE 80-1400/A/BAQE/2,2 T MCE 30/C	262	252	135	117	-	144	-	138	160	200	8x18	753	105	-	360	180	180	16	-	-	80	80	650	400	945	0,25	88,6
CP-GE 80-1400/A/BAQE/2,2 M MCE 15/C	262	252	135	117	-	144	-	138	160	200	8x18	753	105	-	360	180	180	16	-	-	80	80	650	400	945	0,25	86
CP-GE 80-2050/A/BAQE/4 T MCE 30/C	353	267	135	125	-	144	-	138	160	200	8x18	765	105	-	360	180	180	16	-	-	80	80	650	400	945	0,25	99

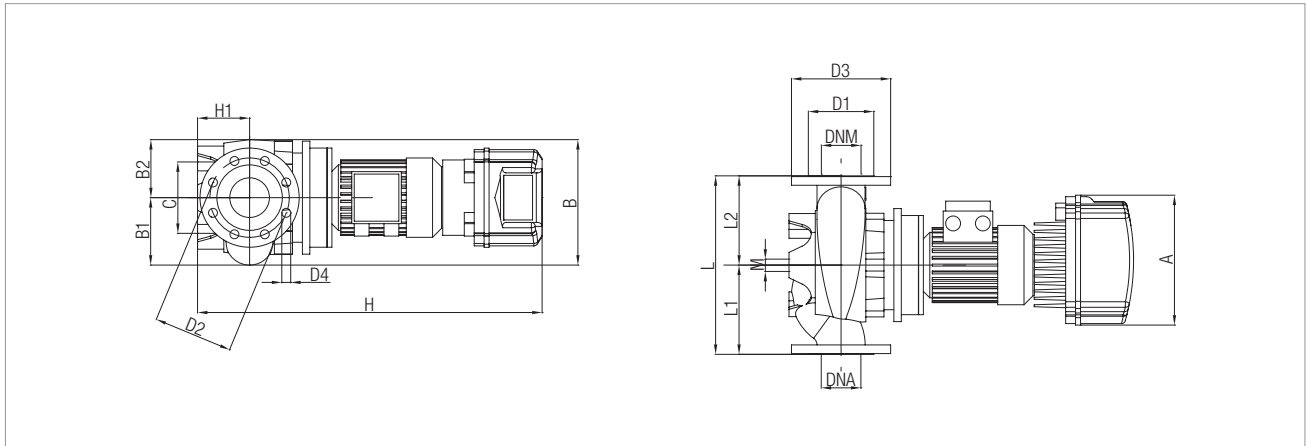
# CP-GE 80 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



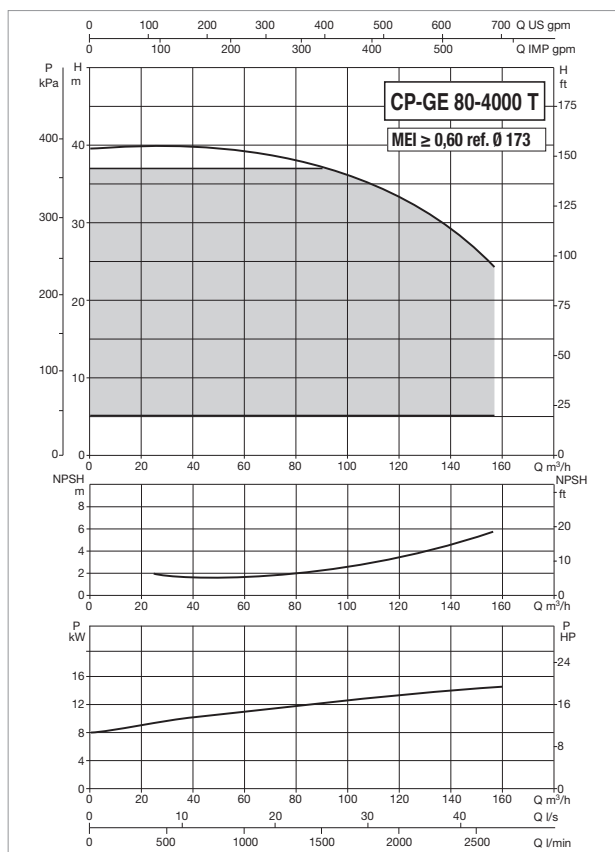
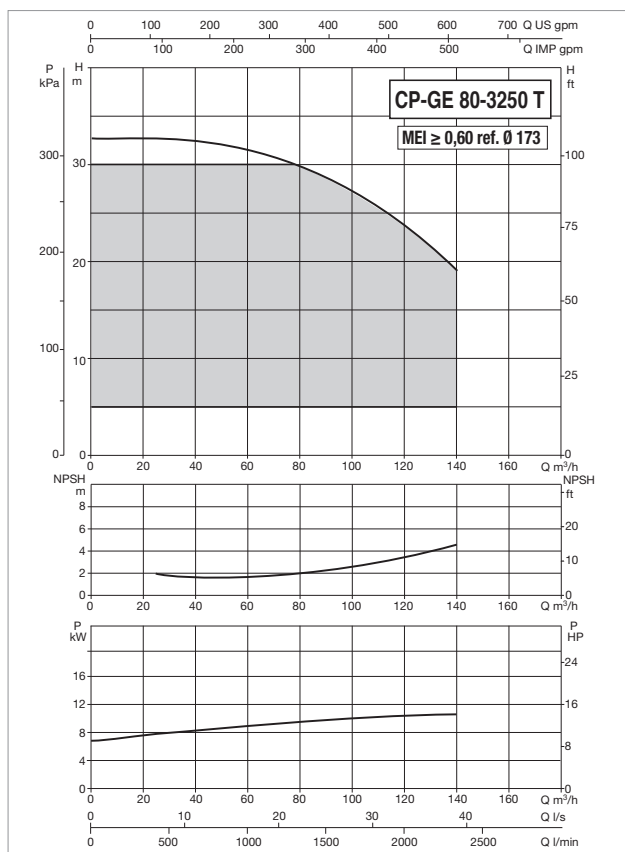
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CP-GE 80-2400/A/BAQE/5,5 T MCE 55/C*	3 x 400 V ~	2	2910	6,69	5,5	7,5	10,2
CP-GE 80-2770/A/BAQE/7,5 T MCE 55/C*	3 x 400 V ~	2	2905	8,76	7,5	10	16,5

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	H	L/A	L/B	H																					
CP-GE 80-2400/A/BAQE/5,5 T MCE 55/C	353	267	135	151	-	144	-	138	160	200	8x18	873	105	-	360	180	180	16	-	-	80	80	650	400	945	0,25	133
CP-GE 80-2770/A/BAQE/7,5 T MCE 55/C	353	341	178	151	-	144	-	138	160	200	8x18	1038	115	-	440	220	220	16	-	-	80	80	650	400	945	0,25	88

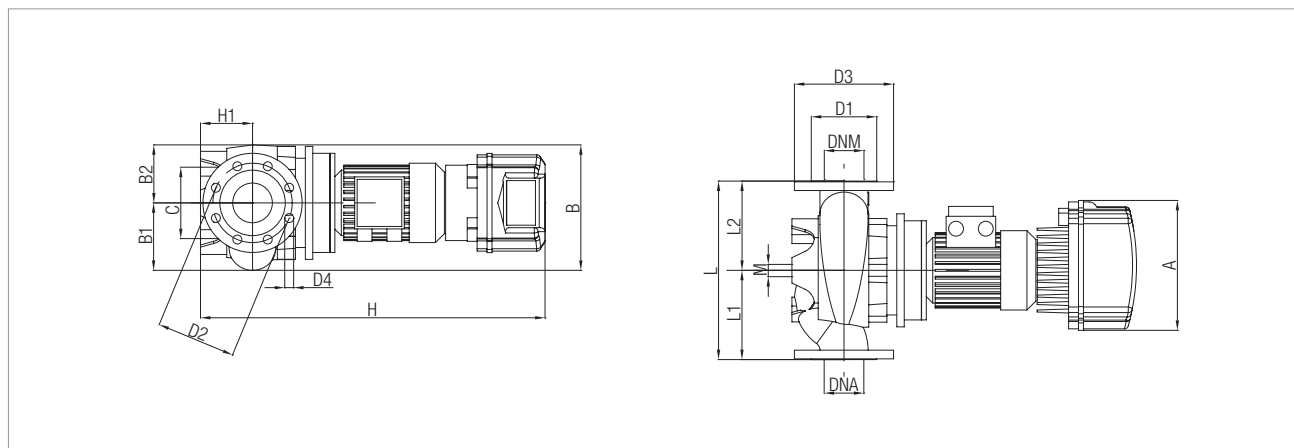
# CP-GE 80 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

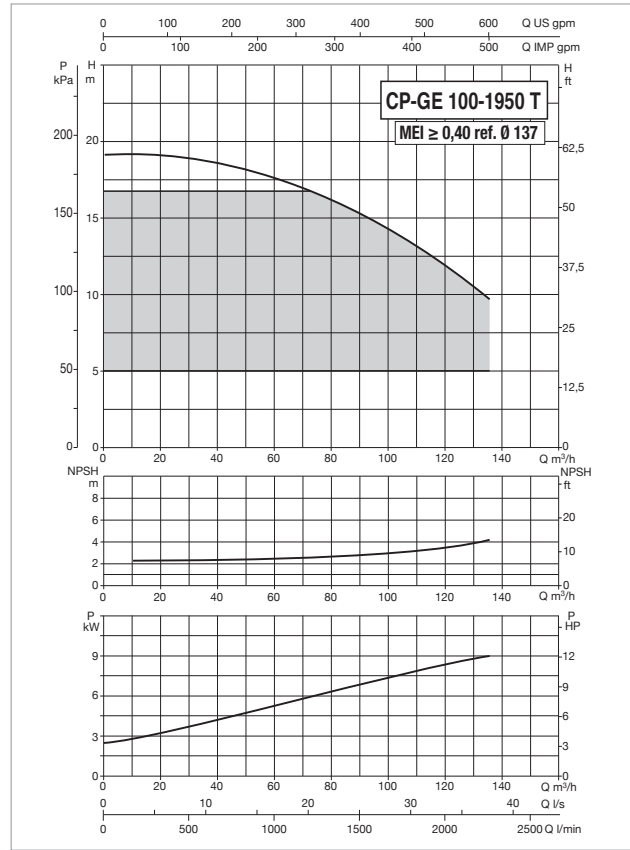
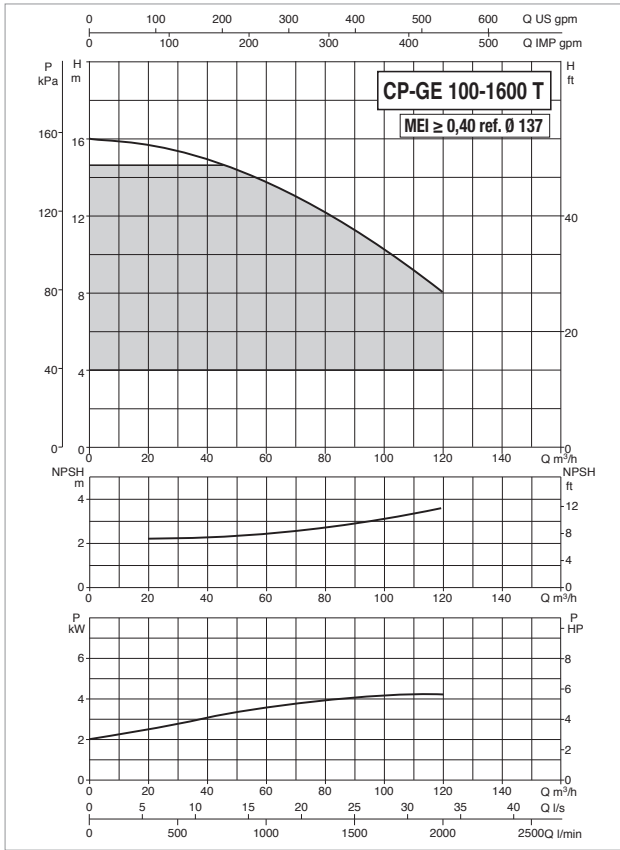


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CP-GE 80-3250/A/BAQE/11 T MCE 110/C	3 x 400 V ~	2	2932	13,39	11	15	19,9
CP-GE 80-4000/A/BAQE/15 T MCE 150/C	3 x 400 V ~	2	2945	18,42	15	20	26,8

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	H																								
CP-GE 80-3250/A/BAQE/11 T MCE 110/C	426	341	178	176	-	144	-	138	160	200	8x18	1100	115	-	440	220	220	16	-	-	80	80	650	400	945	0,25	98
CP-GE 80-4000/A/BAQE/15 T MCE 150/C	426	341	178	176	-	144	-	138	160	200	8x18	1100	115	-	440	220	220	16	-	-	80	80	650	400	945	0,25	103

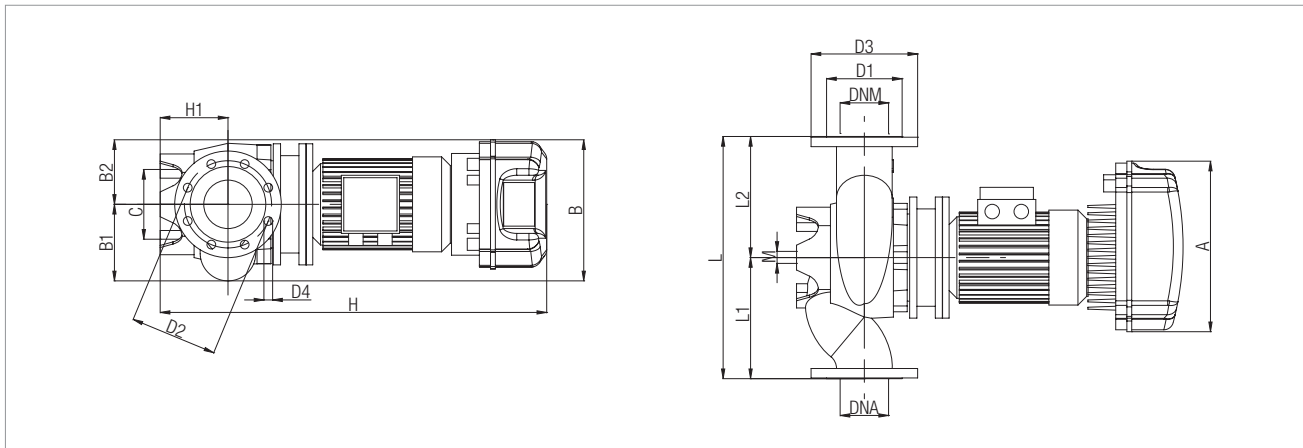
# CP-GE 100 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CP-GE 100-1600/A/BAQE/4 T MCE 55/C*	3 x 400 V ~	2	2918	5,58	4	5,5	8,2
CP-GE 100-1950/A/BAQE/5,5 T MCE 55/C	3 x 400 V ~	2	2918	7,34	5,5	7,5	10,2

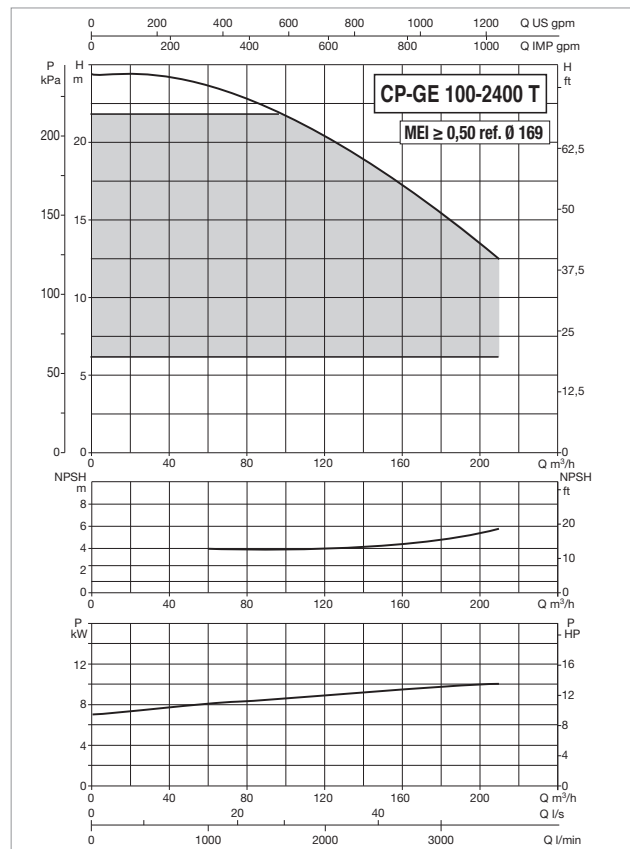
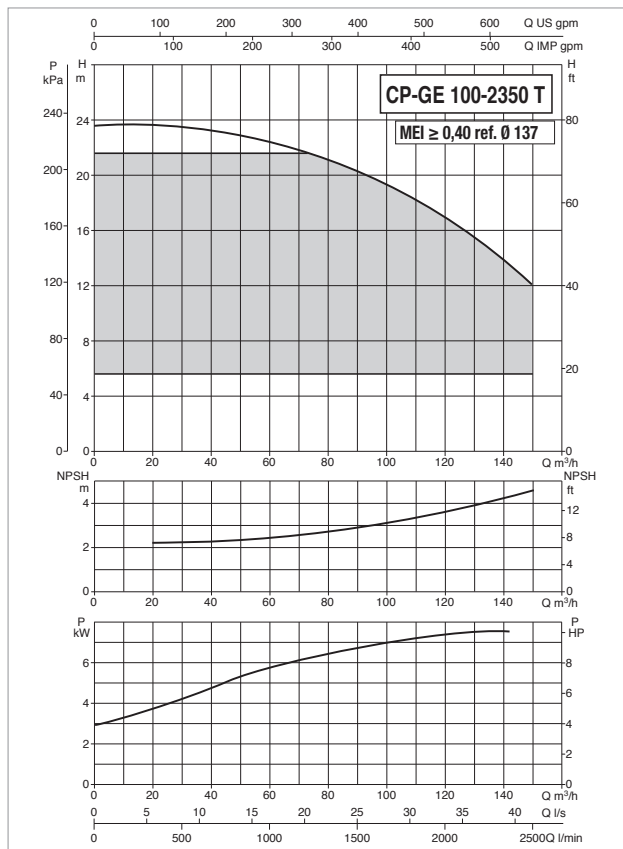
\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	H	L/A	L/B	H																					
CP-GE 100-1600/A/BAQE/4 T MCE 55/C	353	341	158	126	-	144	-	158	180	200	8x18	898	140	-	500	250	250	16	-	-	100	100	650	400	945	0,25	86
CP-GE 100-1950/A/BAQE/5,5 T MCE 55/C	353	341	158	150	-	144	-	158	180	200	8x18	1026	140	-	500	250	250	16	-	-	100	100	650	400	945	0,25	92



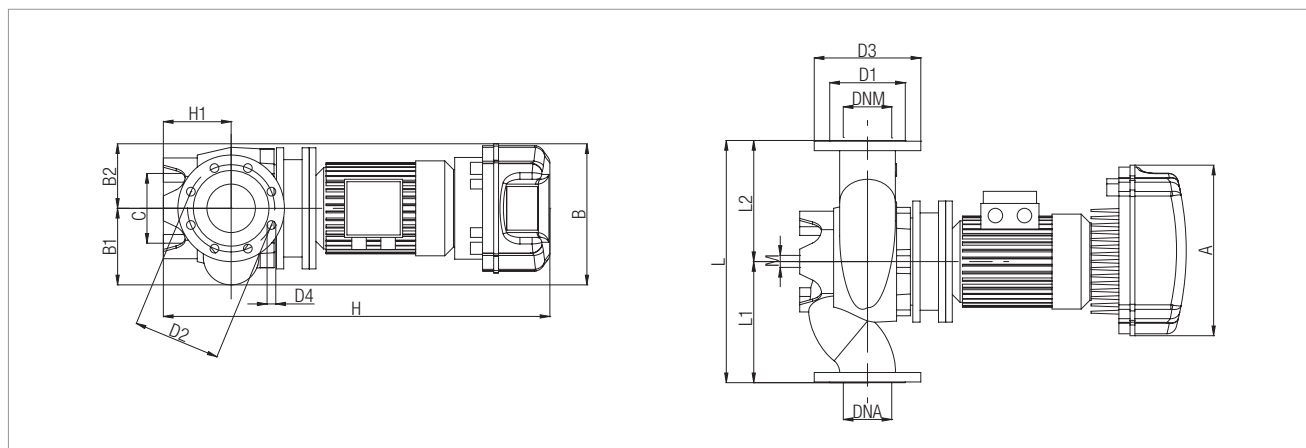
# CP-GE 100 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



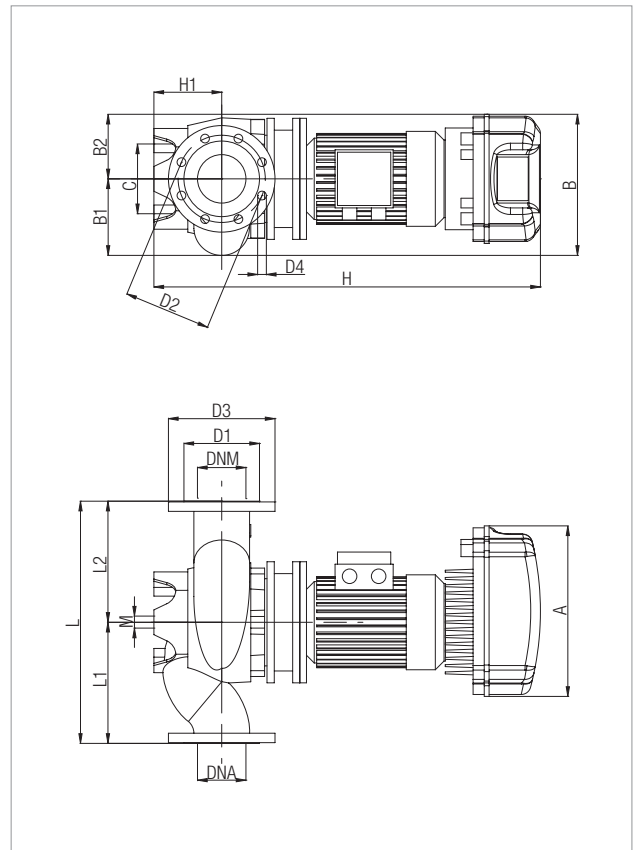
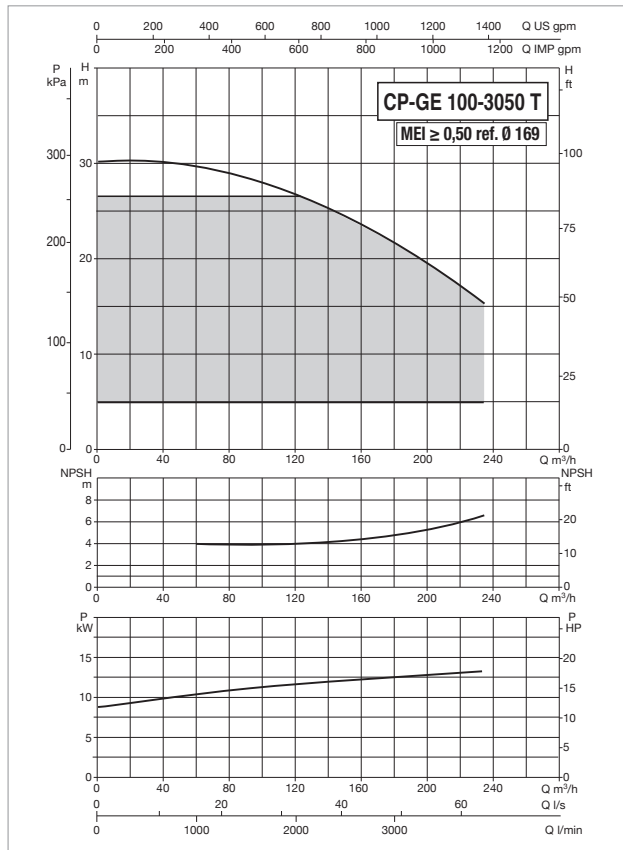
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CP-GE 100-2350/A/BAQE/7,5 T MCE 55/C*	3 x 400 V ~	2	2906	8,76	7,5	10	16,5
CP-GE 100-2400/A/BAQE/11 T MCE 110/C*	3 x 400 V ~	2	2940	14,59	11	15	19,9

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	H	L/A	L/B	H																					
CP-GE 100-2350/A/BAQE/7,5 T MCE 55/C	353	341	158	150	-	144	-	158	180	200	8x18	1064	140	-	500	250	250	16	-	-	100	100	700	600	970	0,41	110
CP-GE 100-2400/A/BAQE/11 T MCE 110/C	426	346	193	153	-	230	-	158	180	200	8x18	1092	140	-	550	275	275	16	-	-	100	100	700	600	970	0,41	120

# CP-GE 100 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



The MEI values for inverter controlled pumps refer to similar versions without electronics.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

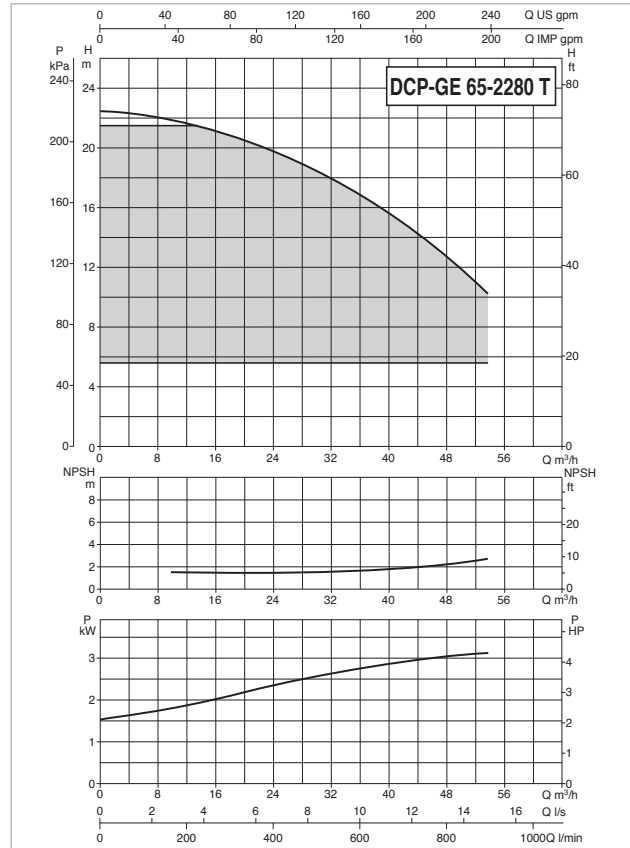
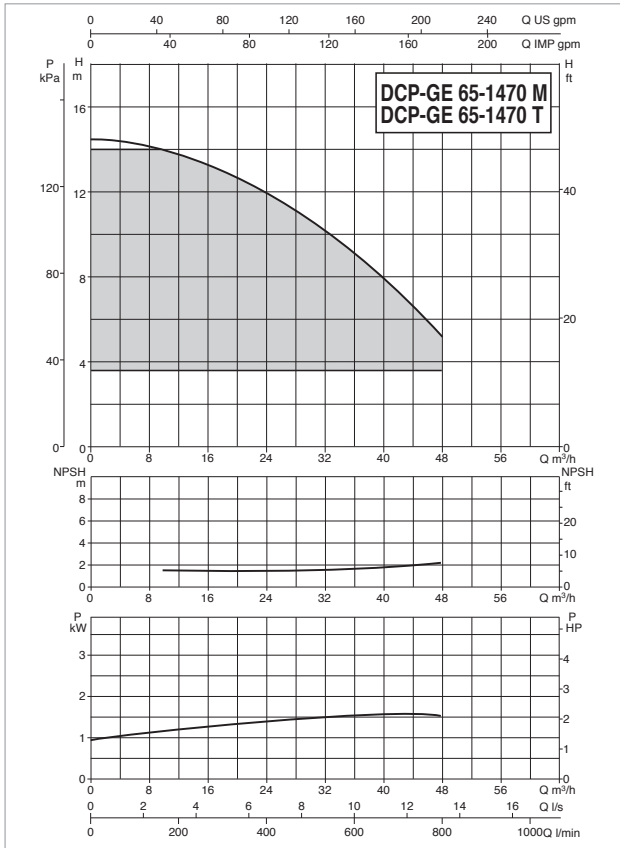
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
CP-GE 100-3050/A/BAQE/15 T MCE 150/C*	3 x 400 V ~	2	2941	17,79	15	20	26,8

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A			L/B			H																				
	CP-GE 100-3050/A/BAQE/15 T MCE 150/C	426	346	193	153	-	230	-	158	180	220	8x18	1092	140	-	550	275	275	16	-	-	100	100	700	600		

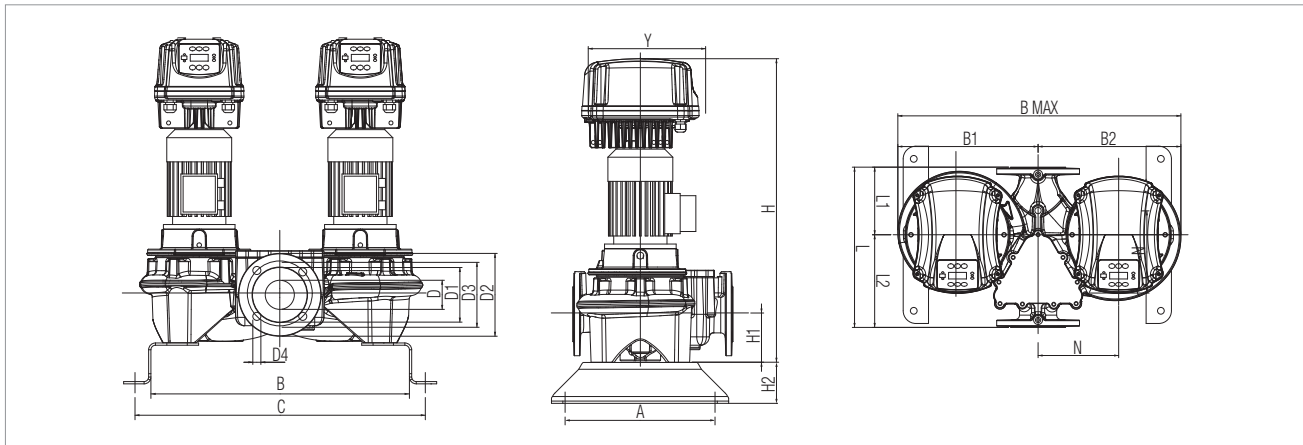
# DCP-GE 65 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



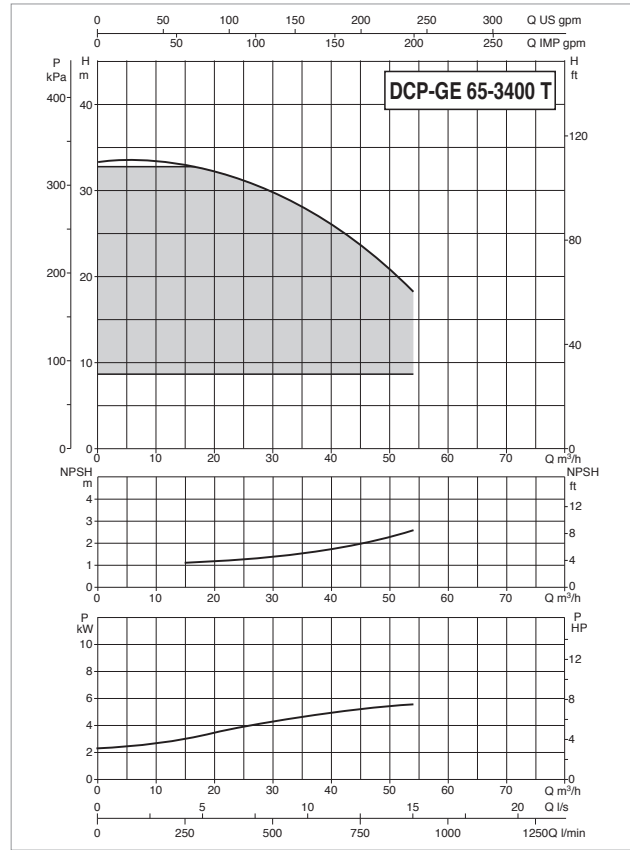
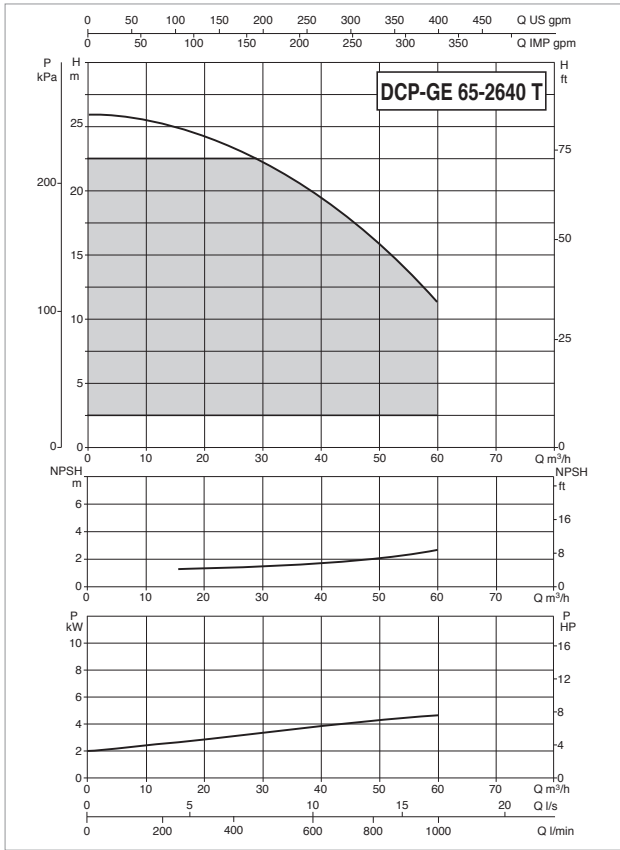
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCP-GE 65-1470/A/BAQE/1,5 M MCE 11/C*	1 x 220-240 V ~	2	2883	1,96	1,5	2	14,5
DCP-GE 65-1470/A/BAQE/1,5 T MCE 30/C*	3 x 400 V ~	2	2883	1,96	1,5	2	3
DCP-GE 65-2280/A/BAQE/3 T MCE 30/C*	3 x 400 V ~	2	2882	3,55	3	4	5,6

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	L/H	L/A	L/B	L/H																					
DCP-GE 65-1470/A/BAQE/1,5 M MCE 11/C	330	569	315	320	635	639	-	122	185	145	4x18	745	107	100	358	151	207	M16	180	262	65	65	405	700	848	0,24	148
DCP-GE 65-1470/A/BAQE/1,5 T MCE 30/C	330	569	315	320	635	639	-	122	185	145	4x18	748	107	100	358	151	207	M16	180	262	65	65	405	700	848	0,24	150
DCP-GE 65-2280/A/BAQE/3 T MCE 30/C	330	569	315	320	635	639	-	122	185	145	4x18	828	107	100	358	151	207	M16	180	352	65	65	405	750	925	0,28	193

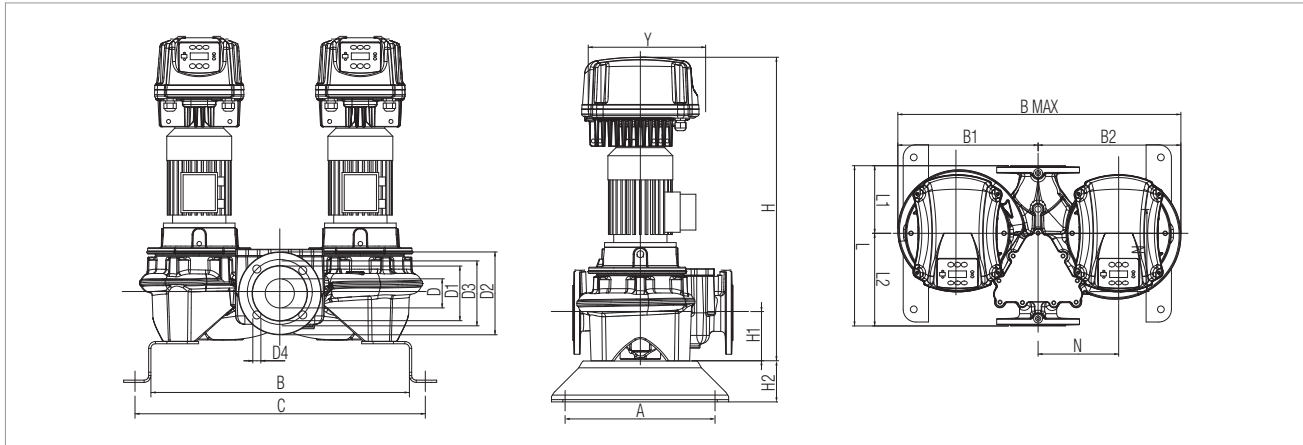
## DCP-GE 65 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



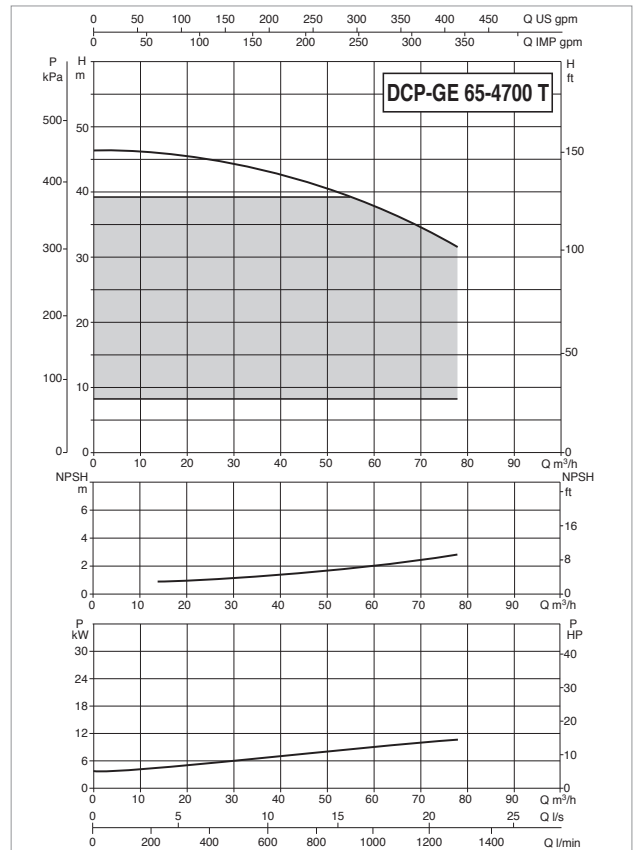
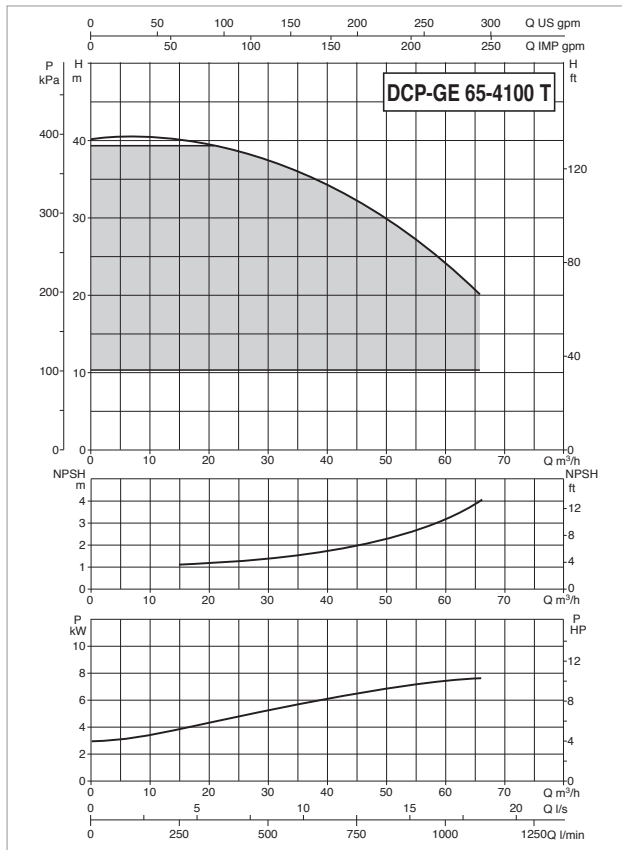
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCP-GE 65-2640/A/BAQE/4 T MCE 30/C*	3 x 400V ~	2	2910	4,77	4	5,5	8,9
DCP-GE 65-3400/A/BAQE/5,5 T MCE 55/C*	3 x 400V ~	2	2913	6,94	5,5	7,7	10,2

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	H	L/A	L/B	H																					
DCP-GE 65-2640/A/BAQE/4 T MCE 30/C	330	569	315	320	635	639	-	122	185	145	4x18	843	107	100	358	151	207	M16	180	352	65	65	405	700	943	0,27	206
DCP-GE 65-3400/A/BAQE/5,5 T MCE 55/C	330	569	324	329	653	639	-	122	185	145	4x18	932	107	100	358	151	207	M16	180	352	65	65	405	700	1032	0,29	272

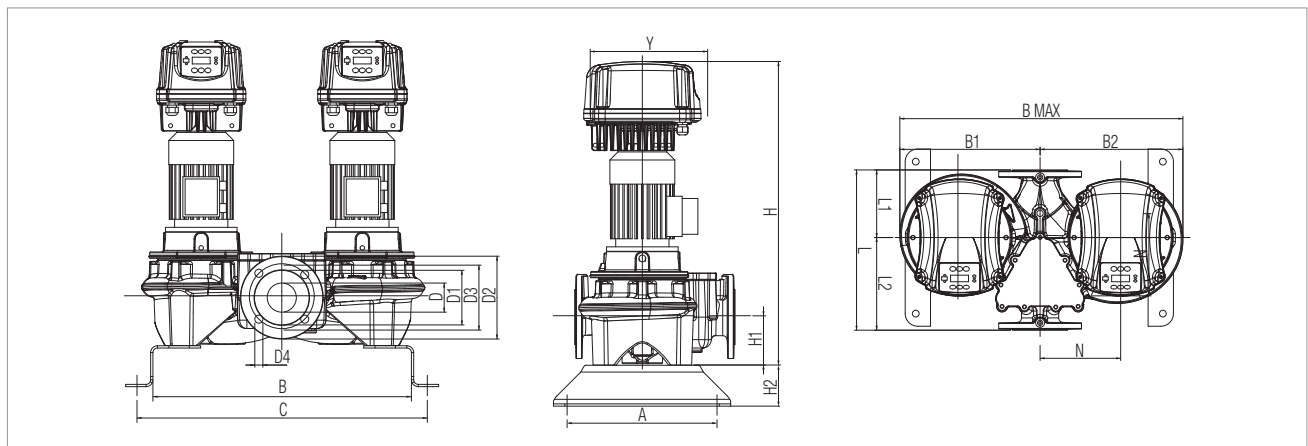
# DCP-GE 65 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



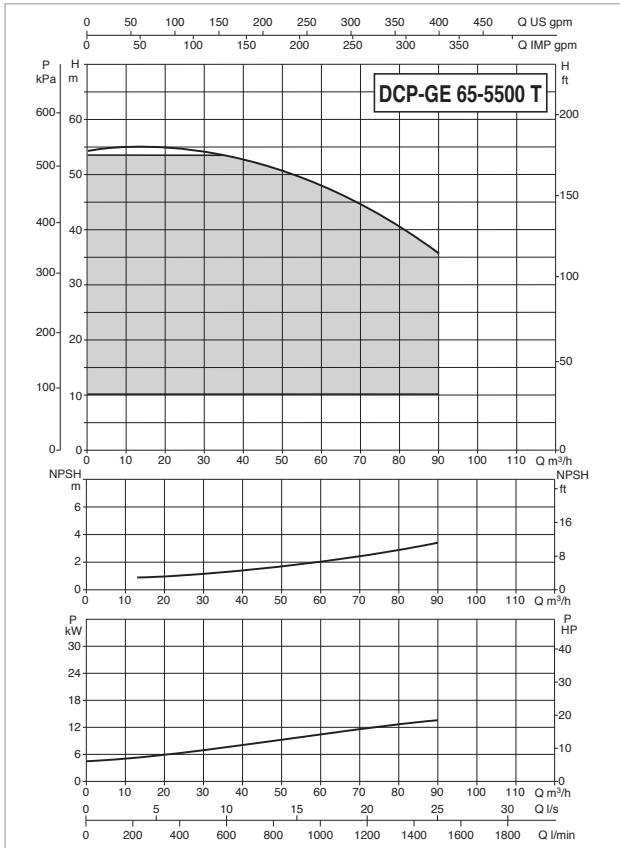
MODEL	POWER INPUT 50-60 Hz	POLES	n r.p.m.	ELECTRICAL DATA		In A
				P1 MAX kW	P2 NOMINAL	
				kW	HP	
DCP-GE 65-4100/A/BAQE/7,5 T MCE 55/C*	3 x 400 V ~	2	2900	8,76	7,5 / 10	16,5
DCP-GE 65-4700/A/BAQE/11 T MCE 110/C*	3 x 400 V ~	2	2940	14,75	11 / 15	19,9

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DN	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
DCP-GE 65-4100/A/BAQE/7,5 T MCE 55/C	330	569	324	329	653	639	-	122	185	145	4x18	980	107	100	358	151	207	M17	180	352	65	65	405	700	1080	0,31	284
DCP-GE 65-4700/A/BAQE/11 T MCE 110/C	330	649	389	397	786	719	-	122	185	145	4x18	1139	125	100	475	177	298	M16	220	425	65	65	475	782	1239	0,46	426

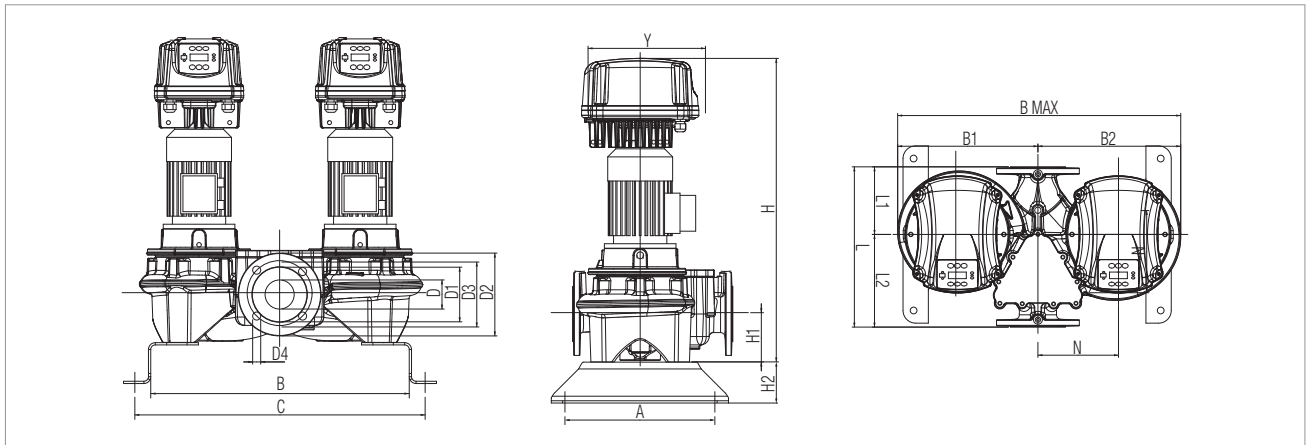
# DCP-GE 65 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



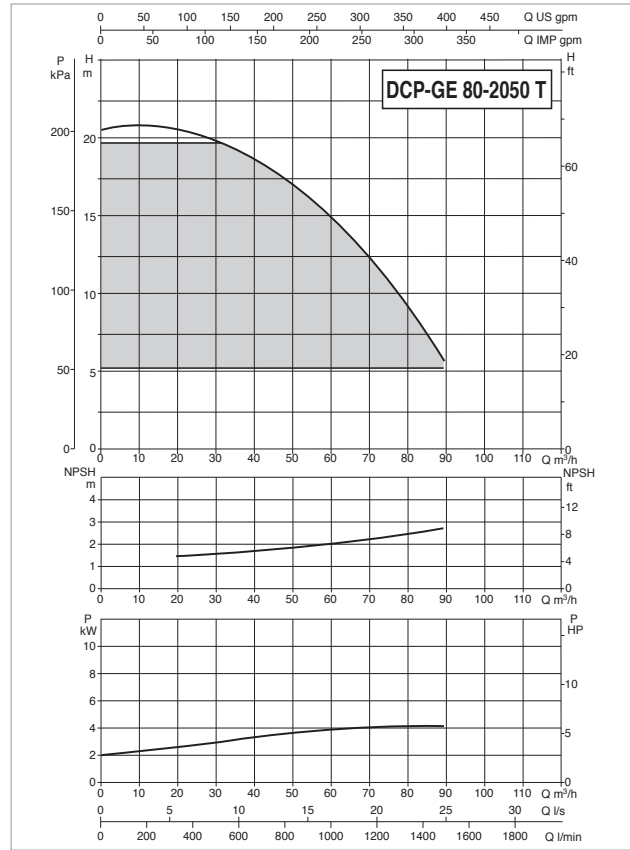
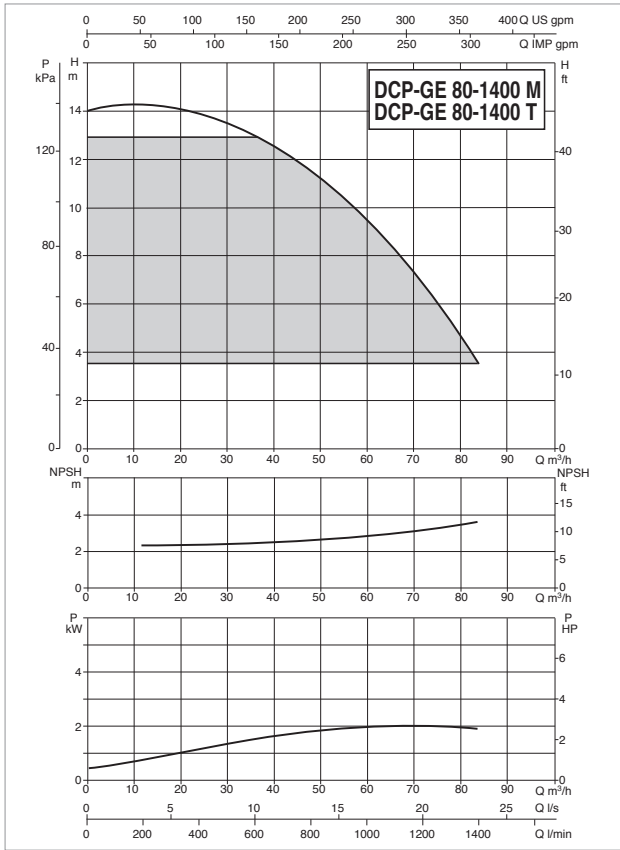
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCP-GE 65-5500/A/BAQE/15 T MCE 150/C*	3 x 400 V ~	2	2943	18,07	15	20	26,8

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	H	L/A	L/B	H																					
DCP-GE 65-5500/A/BAQE/15 T MCE 150/C	330	649	389	397	786	719	-	122	185	145	4x18	1139	125	100	475	177	298	M16	220	425	65	65	475	782	1239	0,46	459

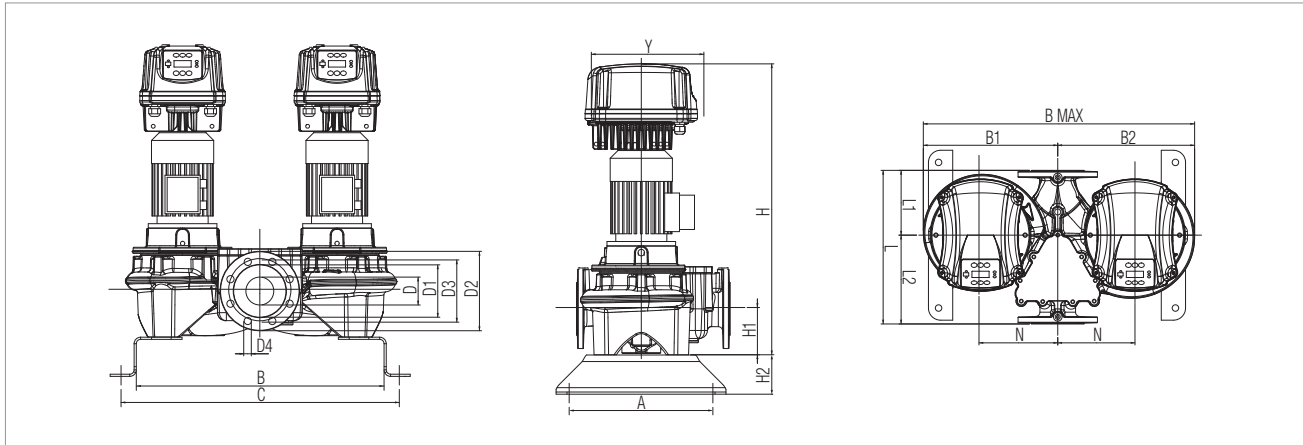
# DCP-GE 80 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



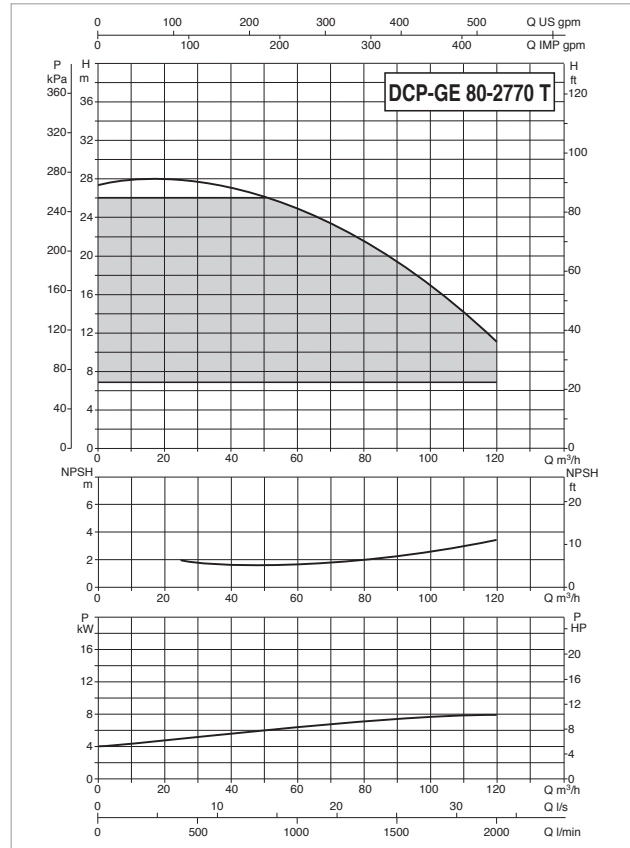
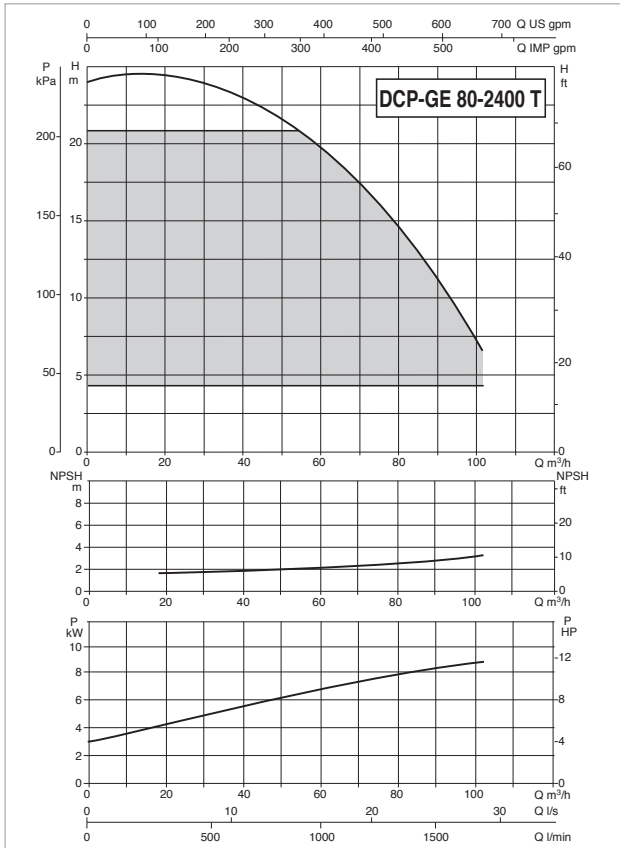
MODEL	POWER INPUT 50-60 Hz	POLES	n r.p.m.	ELECTRICAL DATA			In A
				P1 MAX kW	P2 NOMINAL		
					kW	HP	
DCP-GE 80-1400/A/BAQE/2,2 M MCE 15/C*	1 x 220-240 V ~	2	2874	2,73	2,2	3	19,4
DCP-GE 80-1400/A/BAQE/2,2 T MCE 30/C*	3 x 400 V ~	2	2874	2,94	2,2	3	4,6
DCP-GE 80-2050/A/BAQE/4 T MCE 30/C*	3 x 400 V ~	2	2914	4,77	4	5,5	8,9

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DN	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
DCP-GE 80-1400/A/BAQE/2,2 M MCE 15/C	330	580	305	310	615	650	-	137	200	160	8x18	781,5	115	100	360	165	195	M16	180	352	80	80	360	710	882	0,23	177
DCP-GE 80-1400/A/BAQE/2,2 T MCE 30/C	330	580	305	310	615	650	-	137	200	160	8x18	781,5	115	100	360	165	195	M16	180	352	80	80	360	710	882	0,23	179
DCP-GE 80-2050/A/BAQE/4 T MCE 30/C	330	580	305	310	615	650	-	137	200	160	8x18	854,5	115	100	360	165	195	M16	180	352	80	80	360	710	955	0,24	195

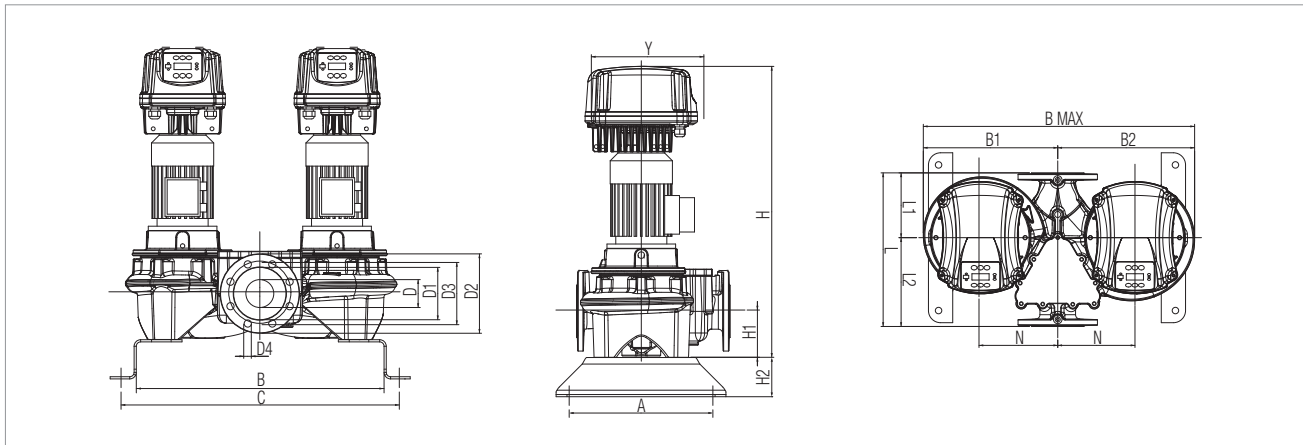
# DCP-GE 80 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



MODEL	POWER INPUT 50-60 Hz	POLES	n r.p.m.	ELECTRICAL DATA		In A	
				P1 MAX kW	P2 NOMINAL		
					kW	HP	
DCP-GE 80-2400/A/BAQE/5,5 T MCE 55/C*	3 x 400 V ~	2	2910	6,69	5,5	7,5	10,2
DCP-GE 80-2770/A/BAQE/7,5 T MCE 55/C*	3 x 400 V ~	2	2905	8,76	7,5	10	16,5

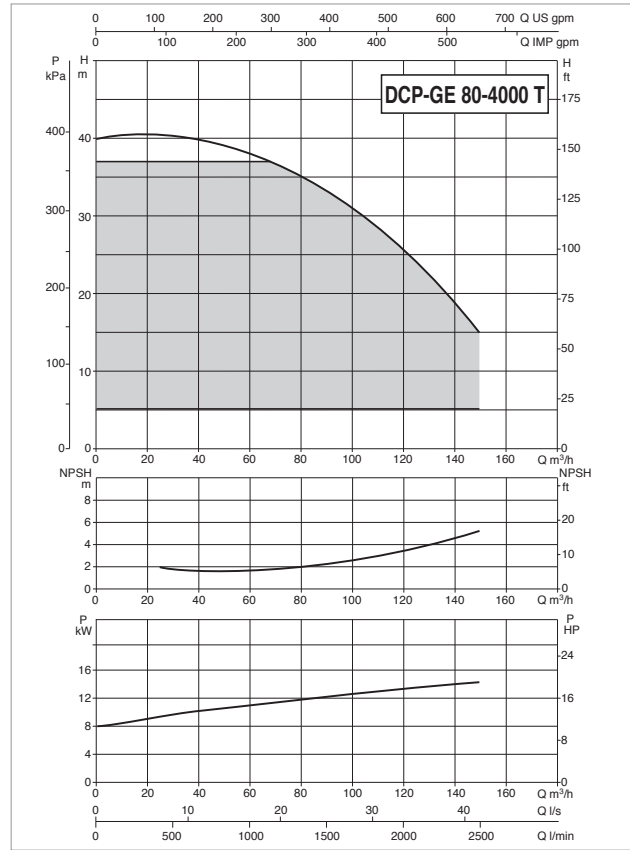
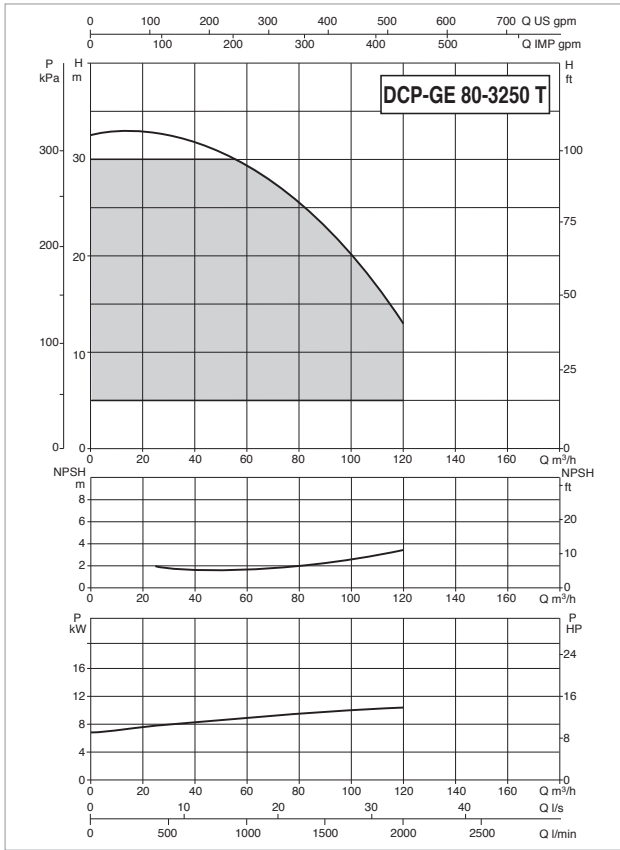
\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DN	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
DCP-GE 80-2400/A/BAQE/5,5 T MCE 55/C	330	580	327	332	659	650	-	137	200	160	8x18	943,5	115	100	360	165	195	M16	180	352	80	80	360	710	1044	0,27	264
DCP-GE 80-2770/A/BAQE/7,5 T MCE 55/C	330	620	355	365	750	690	-	137	200	160	8x18	992	115	100	440	165	195	M16	180	352	80	80	440	750	1092	0,36	186



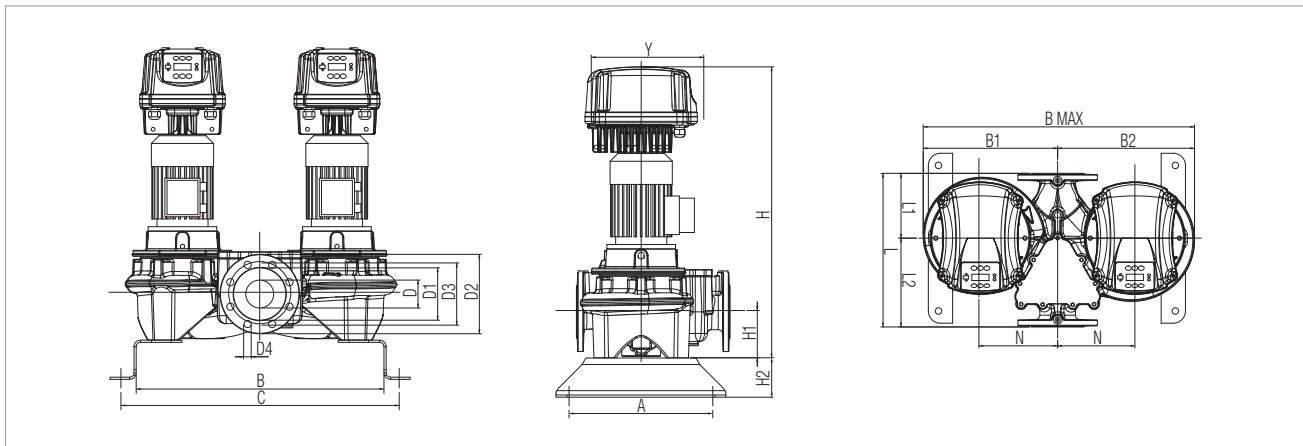
# DCP-GE 80 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



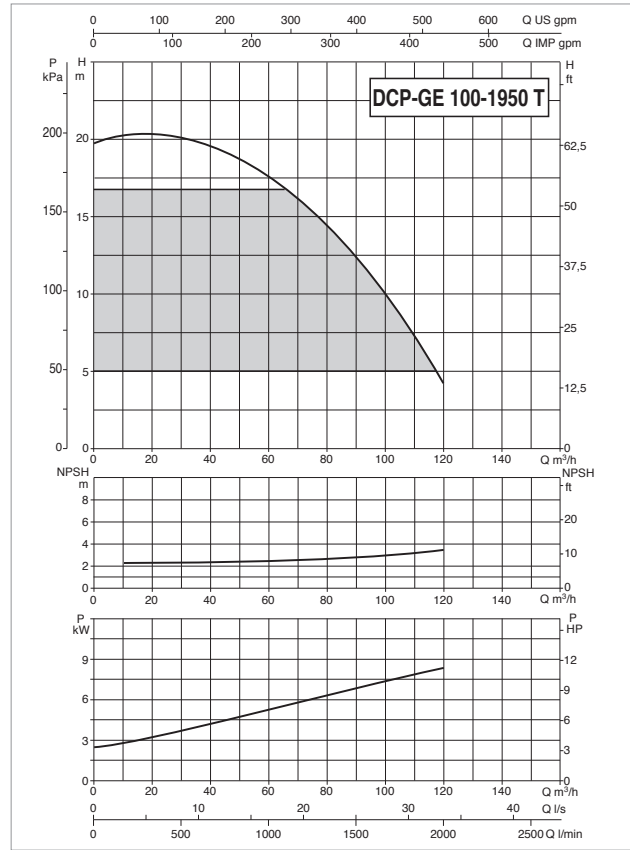
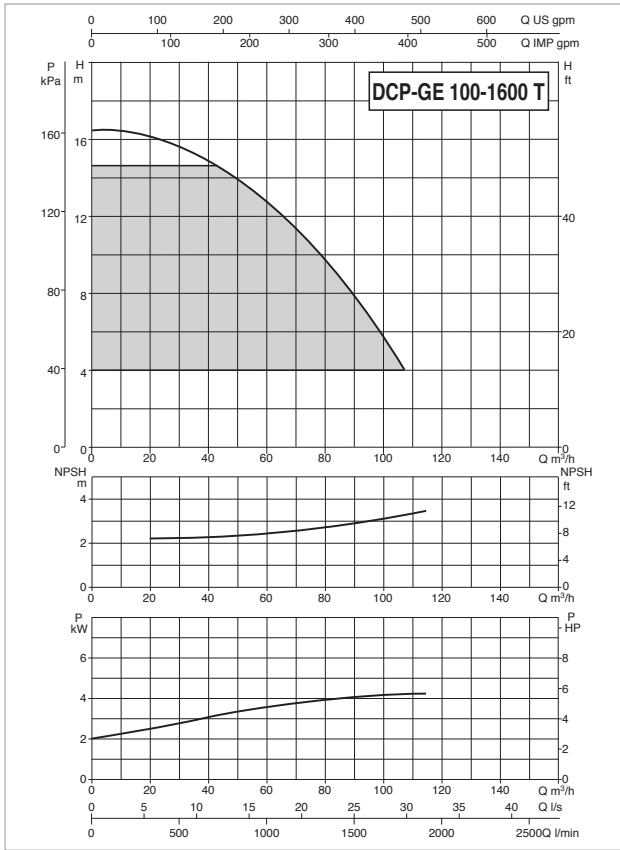
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
DCP-GE 80-3250/A/BAQE/11 T MCE 110/C*	3 x 400 V ~	2	2932	13,39	kW	HP	
DCP-GE 80-4000/A/BAQE/15 T MCE 150/C*	3 x 400 V ~	2	2945	18,42	11	15	19,9
					15	20	26,8

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	DIMENSIONS																			VOL. (m <sup>3</sup> )	WEIGHT Kg						
	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N			Y	DNA	DNM	L/A	L/B	H
DCP-GE 80-3250/A/BAQE/11 T MCE 110/C	330	620	364	374	768	690	-	137	200	160	8x18	1137	115	100	440	165	195	M16	180	425	80	80	440	768	1237	0,42	204
DCP-GE 80-4000/A/BAQE/15 T MCE 150/C	330	620	364	374	768	690	-	137	200	160	8x18	1137	115	100	440	165	195	M16	180	425	80	80	440	768	1237	0,42	214

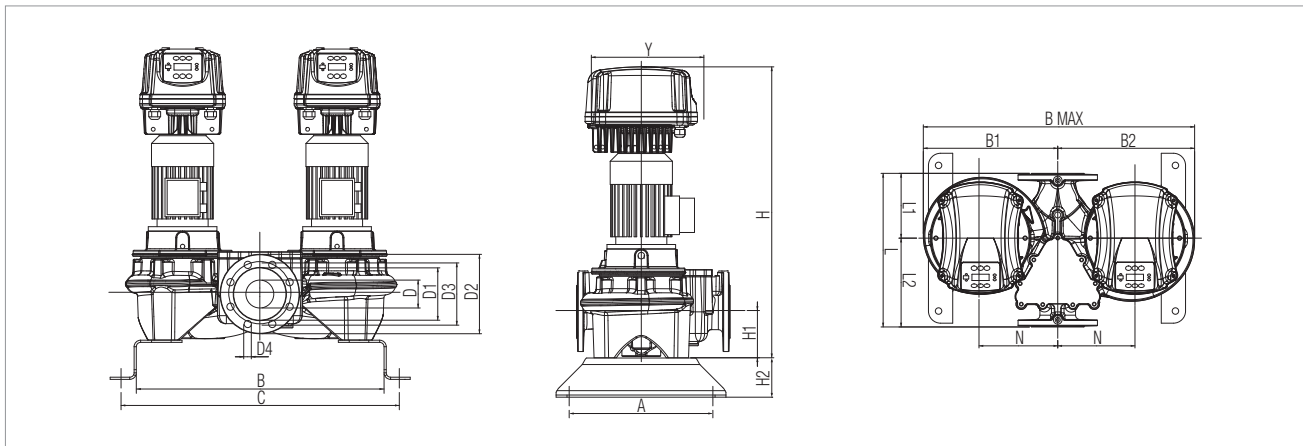
# DCP-GE 100 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.

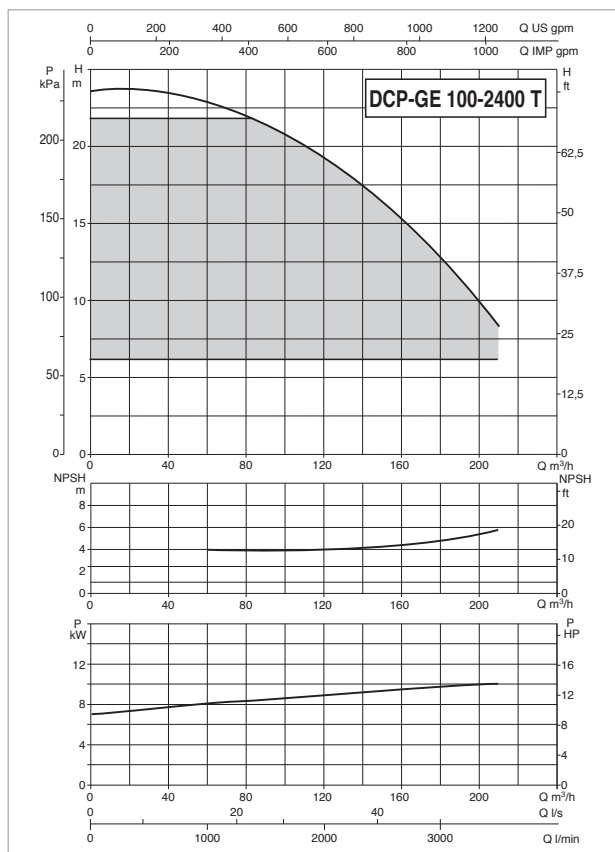
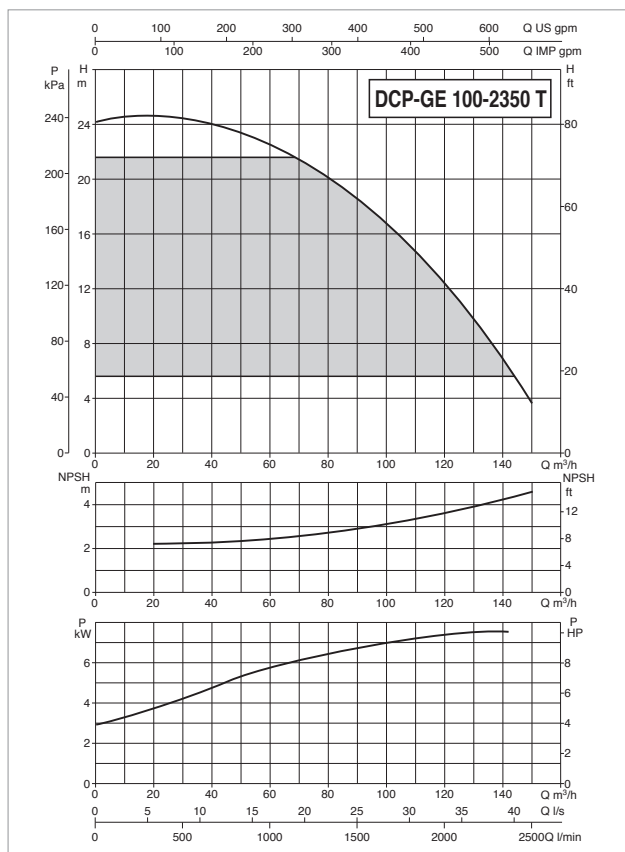


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	POLES	n r.p.m.	P1 MAX kW	P2 NOMINAL		In A
					kW	HP	
DCP-GE 100-1600/A/BAQE/4 T MCE 30/C	3 x 400V ~	2	2918	4,77	4	5,5	8,9
DCP-GE 100-1950/A/BAQE/5,5 T MCE 55/C	3 x 400V ~	2	2918	7,34	5,5	7,5	10,2

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DN	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
	L/A	L/B	H	L/A	L/B	H																					
DCP-GE 100-1600/A/BAQE/4 T MCE 30/C	362	637	330	345	675	717	-	137	200	160	8x18	882,5	140	100	500	280	340	M16	300	352	100	100	500	777	983	0,38	183
DCP-GE 100-1950/A/BAQE/5,5 T MCE 55/C	362	637	335	350	685	717	-	137	200	160	8x18	970,5	140	100	500	280	340	M16	300	352	100	100	500	777	1071	0,42	197

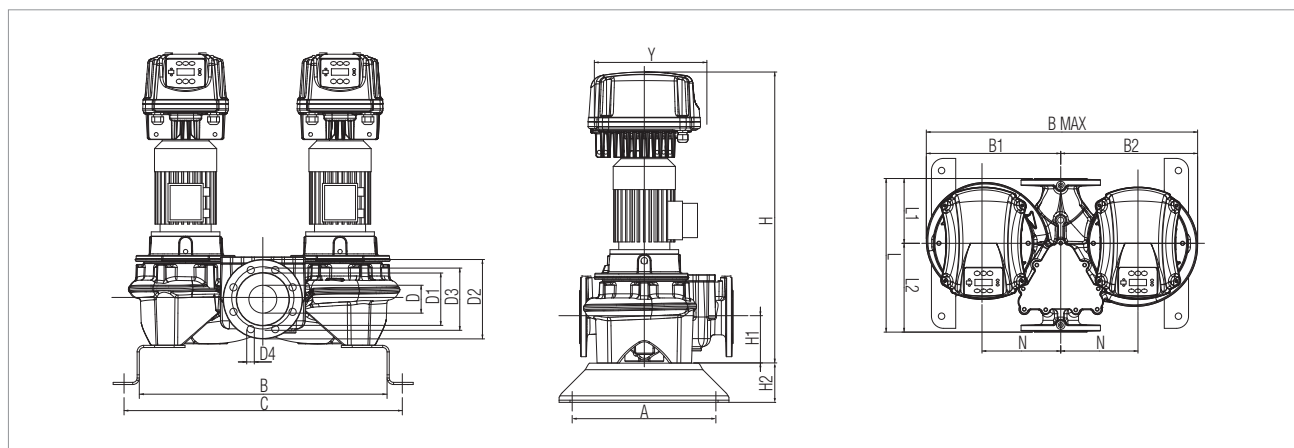
# DCP-GE 100 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



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The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



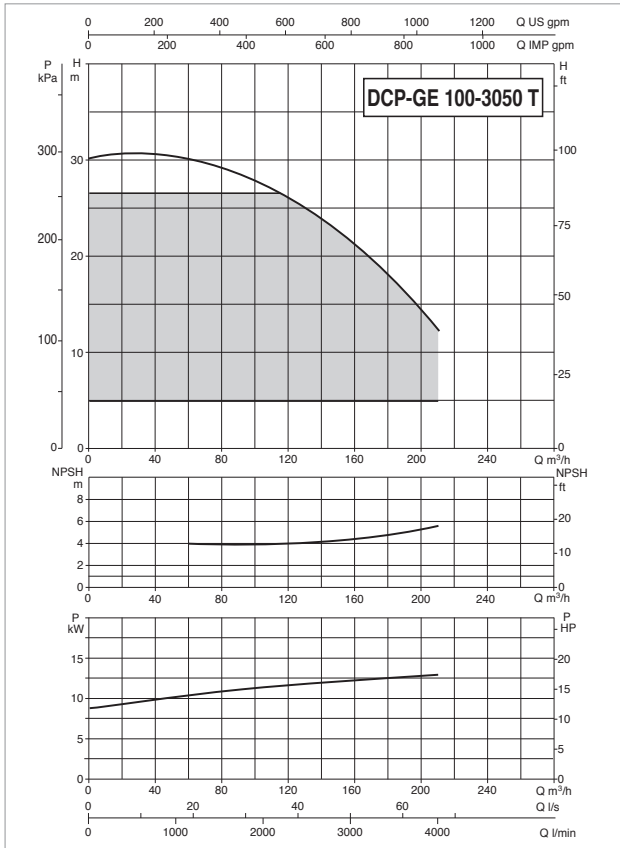
MODEL	POWER INPUT 50-60 Hz	POLES	n r.p.m.	ELECTRICAL DATA		In A	
				P1 MAX kW	P2 NOMINAL		
					kW	HP	
DCP-GE 100-2350/A/BAQE/7,5 T MCE 55/C*	3 x 400 V ~	2	2906	8,76	7,5	10	16,5
DCP-GE 100-2400/A/BAQE/11 T MCE 110/C	3 x 400 V ~	2	2940	14,59	11	15	19,9

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DNA	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
DCP-GE 100-2350/A/BAQE/7,5 T MCE 55/C	362	637	335	350	685	717	-	137	200	160	8x18	1018,5	140	100	500	280	340	M16	300	352	100	100	500	777	1119	0,43	230
DCP-GE 100-2400/A/BAQE/11 T MCE 110/C	362	733	395	410	805	813	-	156	220	180	8x18	1159	140	100	550	191	309	M16	200	425	100	100	550	873	1259	0,6	273

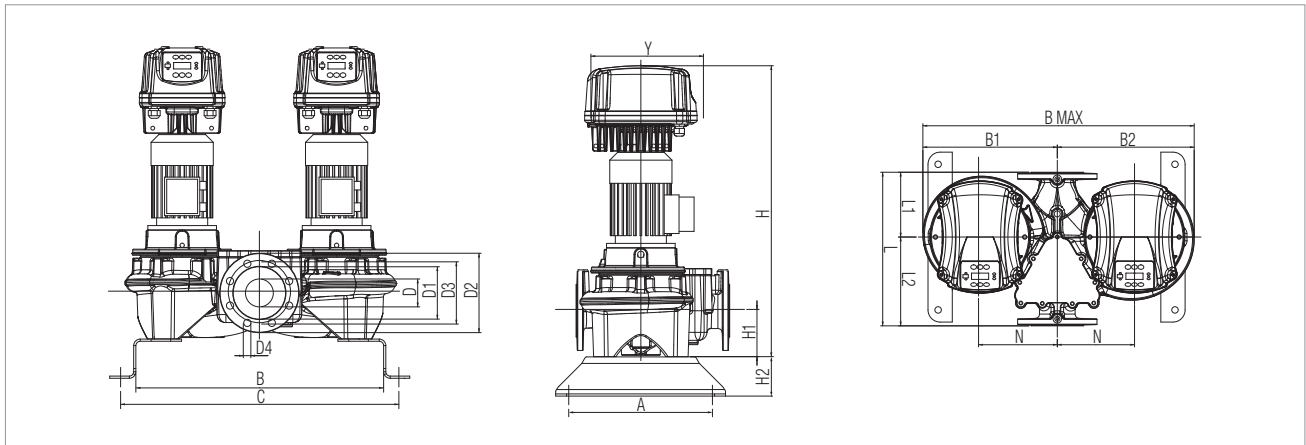
# DCP-GE 100 2 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

Pumped liquid temperature range: from -10 °C to +140°C - Maximum ambient temperature: +40°C



For the MEI index refer to the hydraulic data of the individual pump.

The performance curves are based on kinematic viscosity values = 1 mm<sup>2</sup>/s and density equal to 1000 kg/m<sup>3</sup>. Curve tolerance according to ISO 9906.



MODEL	POWER INPUT 50-60 Hz	POLES	n r.p.m.	ELECTRICAL DATA		In A	
				P1 MAX kW	P2 NOMINAL		
					kW	HP	
DCP-GE 100-3050/A/BAQE/15 T MCE 150/C*	3 x 400 V ~	2	2941	17,79	15	20	26,8

\* ΔP-v proportional differential pressure adjustment mode also available.

MODEL	A	B	B1	B2	B MAX	C	D	D1	D2	D3	D4	H	H1	H2	L	L1	L2	M	N	Y	DN	DNM	PACKING DIMENSIONS			VOL. (m <sup>3</sup> )	WEIGHT Kg
																							L/A	L/B	H		
DCP-GE 100-3050/A/BAQE/15 T MCE 150/C	362	733	395	410	805	813	-	156	220	180	8x18	1159	140	100	550	191	309	M16	200	425	100	100	550	873	1259	0,6	352

# HYDRAULIC EFFICIENCY

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EU 547/2012 REGULATION - MEI

### GENERAL INFORMATION

With the aim of defining a comparable performance threshold value among all water pumps present on the market, an index has been created which considers the size of the pump, its specific speed and rotation speed: the MEI (Minimum Efficiency Index). The regulation applies to centrifugal pumps for pumping clean water included in these product categories:

- Pumps with axial intake with support (ESOB - End Suction Own Bearings)
- Pumps with monobloc horizontal axial intake (ESCC - End Suction Close Coupled)
- Pumps with monobloc in-line axial intake (ESCCI End Suction Close Coupled Inline)
- Multistage vertical pumps (MS-V - Vertical multistage)
- Multistage submerged pumps (MSS - Submersible multistage)

MEI represents a dimensionless indicator for hydraulic performance and is a measurement of the sizing of the pump with respect to its performance. The higher the MEI value, the better the sizing of the pump with respect to its performance and the lower the yearly energy consumption due to use of the pump. The upper limit of the MEI values is theoretically open, and depends only on physical and technological limits.

**The minimum efficiency index (MEI) is based on the maximum diameter of the impeller. Multistage submerged water pumps must undergo tests in a version with 9 stages.**

The reference value for the most efficient water pumps is  $MEI \geq 0.70$ .

The efficiency of a pump with a trimmed impeller is usually lower than that of a pump with the full impeller diameter. The trimming of the impeller adapts the pump to a fixed work point, with a consequent lower energy consumption.

The operation of this water pump with variable operating points may be more efficient and economic if controlled, for example, by means of a variable speed motor which adapts pump operation to the system.

You can find information on reference efficiency at the address: [www.dabpumps.com](http://www.dabpumps.com) or contact our sales network.

The efficiency graphs for  $MEI=0.7$  and  $MEI=0.4$  for the different types of pumps are available on the site: [www.europump.org/efficiencycharts](http://www.europump.org/efficiencycharts)

		PUMP MODEL	IMPELLER	MEI	$\eta_{PL}$	$\eta_{BEP}$	$\eta_{OL}$
DN 40	2p	KLPE 40/1200	Full	$\geq 0,40$	56,6	59,5	58,5
		KLPE 40/600	Turned		48,2	51,2	50,6

		PUMP MODEL	IMPELLER	MEI	$\eta_{PL}$	$\eta_{BEP}$	$\eta_{OL}$
DN 50	2p	KLPE 50/1200	Full	$\geq 0,40$	62,8	65,4	64,8
	4p	KLME 50/600	Full	$\geq 0,40$	57,6	61,6	61,1

		PUMP MODEL	IMPELLER	MEI	$\eta_{PL}$	$\eta_{BEP}$	$\eta_{OL}$
DN 65	2p	KLPE 65/1200	Full	$\geq 0,40$	64,5	69,2	68,1
	4p	KLME 65/600	Full	$\geq 0,40$	65,9	68,6	67,9

		PUMP MODEL	IMPELLER	MEI	$\eta_{PL}$	$\eta_{BEP}$	$\eta_{OL}$
DN 80	2p	KLPE 80/1200	Full	$\geq 0,40$	66,6	70,6	69,2
	4p	KLME 80/600	Full	$\geq 0,40$	70,4	73,1	72,6

# HYDRAULIC EFFICIENCY

EU 547/2012 REGULATION - MEI

		PUMP MODEL	IMPELLER	MEI	$\eta_{PL}$	$\eta_{BEP}$	$\eta_{OL}$
DN 65	2p	CP-GE 65- 5500	Turned	$\geq 0,60$	62,9	66,2	65,4
		CP-GE 65- 4700	Turned		56,9	59,6	59,1
		CP-GE 65- 4100	Full	$\geq 0,60$	67,9	71,2	70,7
		CP-GE 65- 3400	Turned		66,6	71,0	70,0
		CP-GE 65- 2640	Turned		66,3	69,5	69,5
		CP-GE 65- 2280	Turned		65,6	68,5	68,5
	CP-GE 65- 1470	Turned	63,5	67,3	66,7		
	4p	CM-GE 65- 2380	Full	$\geq 0,60$	70,6	71,9	71,7
		CM-GE 65- 1680	Turned		68,5	70,6	70,2
		CM-GE 65- 1200	Turned	58,8	61,5	61,0	
CM-GE 65- 920		Full	$\geq 0,60$	68,8	72,2	71,5	
CM-GE 65- 660		Turned		64,0	67,0	66,0	

		PUMP MODEL	IMPELLER	MEI	$\eta_{PL}$	$\eta_{BEP}$	$\eta_{OL}$
DN 80	2p	CP-GE 80- 4000	Full	$\geq 0,60$	74,7	79,2	78,3
		CP-GE 80- 3250	Turned		72,3	76,7	75,8
		CP-GE 80- 2770	Turned		71,2	75,3	74,5
		CP-GE 80- 2400	Full	$\geq 0,60$	75,4	78,8	78,5
		CP-GE 80- 2050	Turned		73,6	78,2	76,9
		CP-GE 80- 1400	Turned		57,0	61,2	60,4
	4p	CM-GE 80- 3420	Full	$\geq 0,60$	68,5	71,6	71,0
		CM-GE 80- 2700	Turned		65,9	70,6	69,8
		CM-GE 80- 2410	Full	$\geq 0,40$	65,8	69,4	68,8
		CM-GE 80- 1700	Full	$\geq 0,60$	82,0	83,5	83,3
		CM-GE 80- 1530	Turned		75,8	78,6	77,9
		CM-GE 80- 890	Turned	$\geq 0,60$	73,0	76,8	76,1
		CM-GE 80- 650	Full	$\geq 0,60$	72,9	75,7	75,1

# HYDRAULIC EFFICIENCY

EU 547/2012 REGULATION - MEI

		PUMP MODEL	IMPELLER	MEI	$\eta_{PL}$	$\eta_{BEP}$	$\eta_{OL}$
DN 100	2p	CP-GE 100- 3050	Turned	$\geq 0,50$	71,7	76,9	76,1
		CP-GE 100- 2400	Turned		66,1	71,8	70,9
		CP-GE 100- 2350	Full	$\geq 0,40$	71,2	76,3	75,5
		CP-GE 100- 1950	Turned		68,7	73,2	72,4
		CP-GE 100- 1600	Turned		64,6	67,1	66,5
	4p	CM-GE 100- 3290	Turned	$\geq 0,40$	68,0	73,0	72,5
		CM-GE 100- 2550	Full	$\geq 0,40$	72,5	76,1	75,2
		CM-GE 100- 2050	Turned		70,7	75,0	74,1
		CM-GE 100- 1650	Full	$\geq 0,50$	71,7	76,3	75,5
		CM-GE 100- 1320	Turned		69,0	74,3	72,5
		CM-GE 100- 1020	Full	$\geq 0,60$	81,2	85,0	84,3
		CM-GE 100- 865	Turned		68,2	74,6	73,5
CM-GE 100- 510	Turned	65,1	70,9		69,9		

		PUMP MODEL	IMPELLER	MEI	$\eta_{PL}$	$\eta_{BEP}$	$\eta_{OL}$
DN 125	4p	CM-GE 125- 2550	Full	$\geq 0,40$	69,9	73,2	72,2
		CM-GE 125- 2100	Turned		66,8	69,4	69,1
		CM-GE 125- 1560	Full	$\geq 0,60$	78,5	85,0	84,0
		CM-GE 125- 1270	Turned		73,3	78,0	77,1
		CM-GE 125- 1075	Turned		72,3	77,0	76,2

		PUMP MODEL	IMPELLER	MEI	$\eta_{PL}$	$\eta_{BEP}$	$\eta_{OL}$
DN 150	4p	CM-GE 150- 1950	Turned	$\geq 0,60$	75,9	80,6	79,7
		CM-GE 150- 1600	Turned		72,2	77,1	76,3
		CM-GE 150- 1322	Turned		70,8	74,6	73,3
		CM-GE 150- 955	Turned		63,7	66,9	66,4




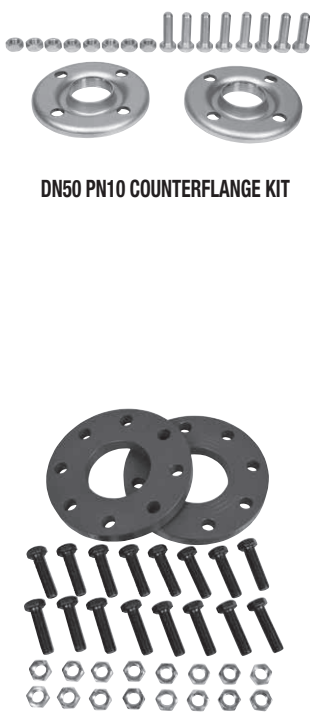
# ACCESSORIES

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# ACCESSORIES

## ELECTRONIC IN-LINE PUMPS

PORT KIT	DESCRIPTIONS	MODEL	WEIGHT kg	Q.TY X BOX
	1" 1/4 F PORT KIT	ALME - ALPE	0,7	24

COUNTER FLANGE KIT *	DESCRIPTION	MODEL	WEIGHT kg	Q.TY X PALLET
 <p>DN50 PN10 COUNTERFLANGE KIT</p> <p>DN80 - PN16 COUNTERFLANGE KIT</p>	<b>DN 40 - PN 10 COUNTERFLANGE KIT</b>	KLPE 40/600 - DKLPE 40/600 KLPE 40/1200 - DKLPE 40/1200	2,4	180
	<b>DN50 PN10 COUNTERFLANGE KIT</b>	KLME50/600 - DKLME 50/600 KLPE 50/1200 - DKLPE 50/1200	3,2	180
	<b>DN65 PN10 COUNTERFLANGE KIT</b>	KLME 65/600 - DKLME 65/600 KLPE 65/1200 - DKLPE 65/1200	4,0	180
	<b>DN80 PN10 COUNTERFLANGE KIT</b>	KLME 80/600 - DKLME 80/600 KLPE 80/1200 - DKLPE 80/1200	4,8	180
	<b>DN65 - PN16 COUNTERFLANGE KIT</b>	CM-E 65 - CM-GE 65 - CP-GE 65	7,5	90
	<b>DN 80 - PN 16 COUNTERFLANGE KIT</b>	CM-GE 80 - CP-GE 80	9,5	64
	<b>DN100 - PN16 COUNTERFLANGE KIT</b>	CM-GE 100 - CP-GE 100	10,9	64
	<b>DN125 - PN16 COUNTERFLANGE KIT</b>	CM-GE 125 - CP-GE 125	14,5	40
<b>DN150 - PN16 COUNTERFLANGE KIT</b>	CM-GE 150 - CP-GE 150	18,6	40	

\* The counter flange kit includes: two counter flanges, nuts and bolts.

# DCONNECT DIGITAL SERVICES

## REMOTE CONTROL FOR ELECTRONIC RESIDENTIAL AND COMMERCIAL SYSTEMS

The D.Connect service offers simple and intuitive remote control of your installation, without the need of a server or specialist personnel.

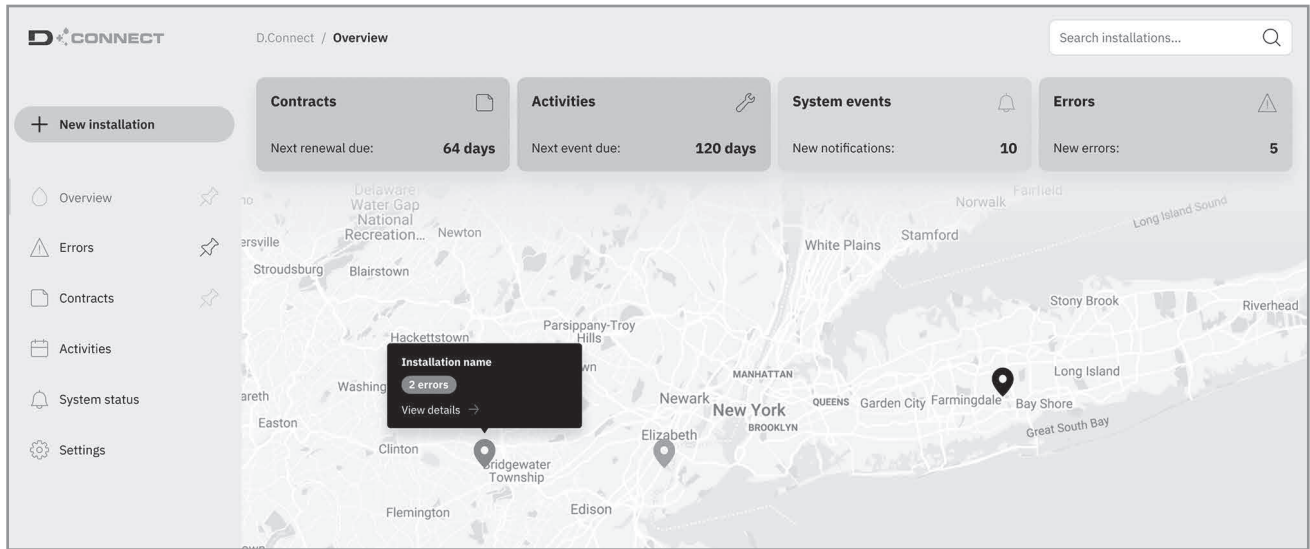
**With D.Connect, you can remotely manage your installations as if you were right in front of them.**

Thanks to the system operation charts, you will also be able to optimise operation. You will also receive prompt notifications of any system faults.

### THE SERVICE ALLOWS TO:

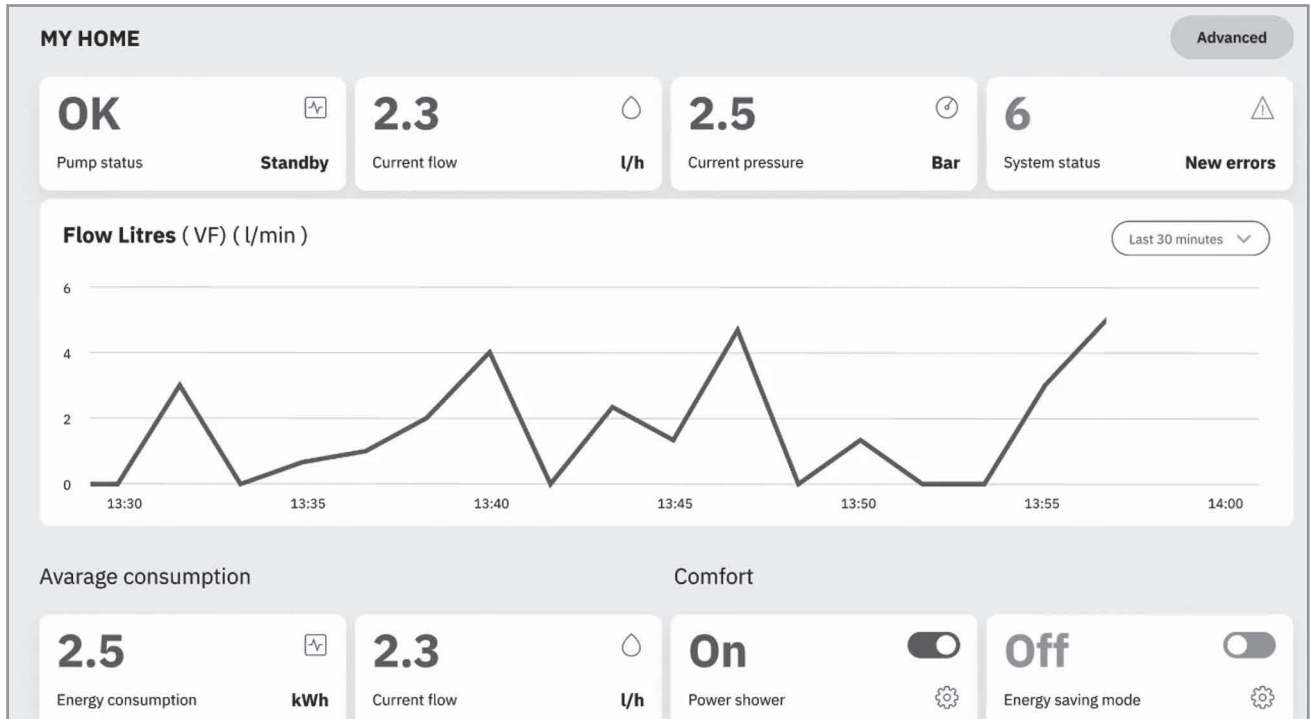
#### EASILY MONITOR YOUR SYSTEMS

The installations with green status are OK, while the orange ones need attention, and the red ones are experiencing problems.



### TAKE ANY NECESSARY ACTIONS AS IF YOU WERE RIGHT IN THE PUMP ROOM

Using the internet site or the APPs, you will be able to easily and quickly control your systems.



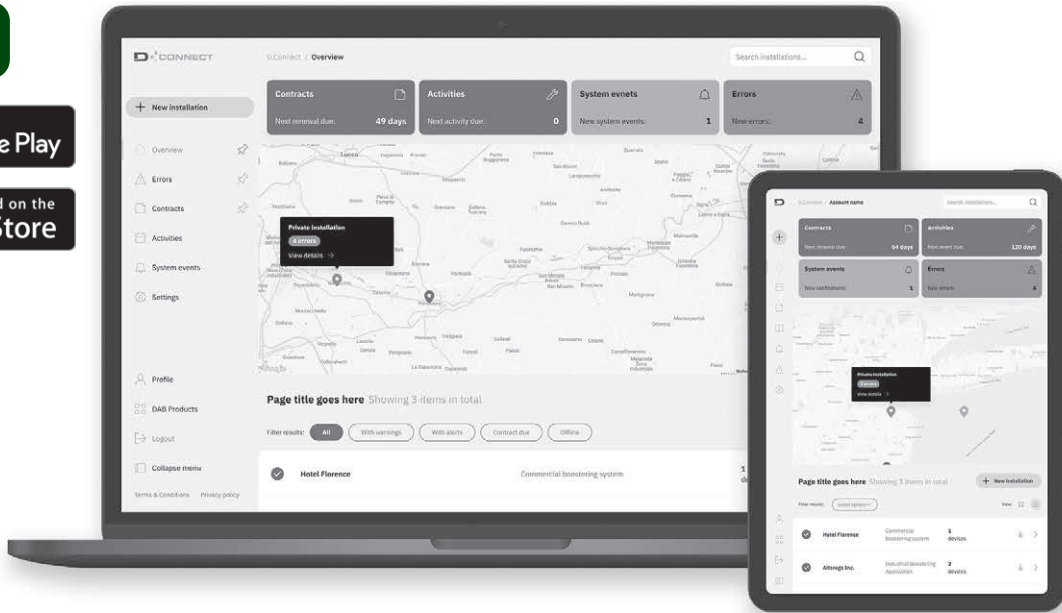
### REMOTE ALARMS

In case of alarm, the D.Connect service will promptly send you a notification, so that you can check what is happening and organise a visit to the system before the issue becomes an emergency for your customer.

# DCONNECT DIGITAL SERVICES

## REMOTE CONTROL FOR ELECTRONIC RESIDENTIAL AND COMMERCIAL SYSTEMS

In order to use the D.Connect service, registration and connected products are required.  
Connect to the website: <https://dconnect.dabpumps.com> using Internet Browsers such as Microsoft Edge or Google Chrome.  
The Android and iOS D.Connect APPs can be downloaded from the relevant Stores:



### WHAT PRODUCTS CAN YOU MANAGE USING THE D.CONNECT SERVICE?

NgDrive, NgPanel, MCE/P, MCE/C, ADAC, Active driver Plus, Ebox, Evoplus, Eskybox, Eskybox mini, Eskybox Diver, Dtron 3, Eskybox Max.

For more information visit: [www.internetofpumps.com](http://www.internetofpumps.com)



Simple and intuitive digital service for remote monitoring of DAB products: it allows you to find all the information you need, supervise the operation of the systems, or change the setting parameters.

### APP DAB LIVE!

Available for Eskybox mini <sup>3</sup>

It makes easier for end users to supervise domestic systems in order to optimize consumption and maximize comfort, also thanks to Power Shower and Sleep Mode functions.

## DCONNECT DIGITAL SERVICES

### DATA RETENTION 1 MONTH MONITORING AND CONTROL

BASIC PACKAGE

1 YEAR SERVICE

### DATA RETENTION 12 MONTH MONITORING AND CONTROL

PLUS 12 PACKAGE

1 YEAR SERVICE

PLUS 36 PACKAGE

3 YEARS SERVICE

2 trial months included Possibility to upgrade to a higher package at any time.

DATA PACKAGE

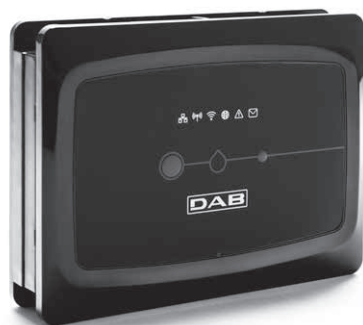
12 MONTHS SIM DATA TRAFFIC RENEWAL SERVICE

KIT MODEM WiFi + WALL CHARGER + SIM

12 MONTHS OF TRAFFIC INCLUDED

# DCONNECT BOX

## ELECTRONIC REMOTE CONTROL DEVICE



### TECHNICAL DATA

**DConnect Box power supply:** 12V DC, Current: 1.5A

**Power supply unit supplied:** input 100-240VAC, with interchangeable plugs for the European, UK Australian and USA markets.

**DConnect Box protection class:** IP20

**Connection to the Internet:**

- Wi-Fi: Supports 802.11 b/g/n, WPA-PSK/WPA2-PSK encryptions. 2.4 GHz Frequency
- Ethernet: compliant with IEEE802.3 10Base-T and 100Base-TX.

**Installation:** DIN rail using the accessory supplied, or wall-mounted installation using the wall plugs supplied.

**Maximum number of devices:** the maximum number of pumps that can be controlled with DConnect Box is 8.

**I/O external connections:**

- 4 no-opto isolated voltage-controlled inputs
- 2 relay outputs

### REQUIREMENTS:

DAB DConnect APP requirements:

Smartphone or Tablet:

- Android 7 or higher.
- iOS 11 or higher.
- Access to the Internet.

Network requirements:

- Direct internet connection (no login portals) and permanent on site.
- Wi-Fi and/or LAN modem/router; active DHCP service.
- In case of Wi-Fi connection, good quality Wi-Fi signal at the DConnect Box installation area. In case of weak signal, we recommended the use of a Wi-Fi signal repeater.

PC requirements:

- Web Browser supporting Java script (e.g. Microsoft Edge or Firefox version 7.0 or higher or Google Chrome).
- Access to the Internet.

### APPLICATIONS:

DConnect Box is a compact electronic device that allows to easily connect to the DConnect service a wide range of DAB products, including already installed one. All it requires is a permanent network connection at the place of installation.

Using the DAB DConnect APP, available from Apple Store or Google Play, or connecting to the [dconnect.dabpumps.com](http://dconnect.dabpumps.com) website, it is possible to go through the various connected installations, checking their individual setting parameters. All this, using an extremely clear and functional user interface that allows you to have a lot of information at your fingertips.

DConnect can be used in all the main fields of application: from pressurisation systems to circulation systems, from waste water recovery installations to swimming pool filtering systems.

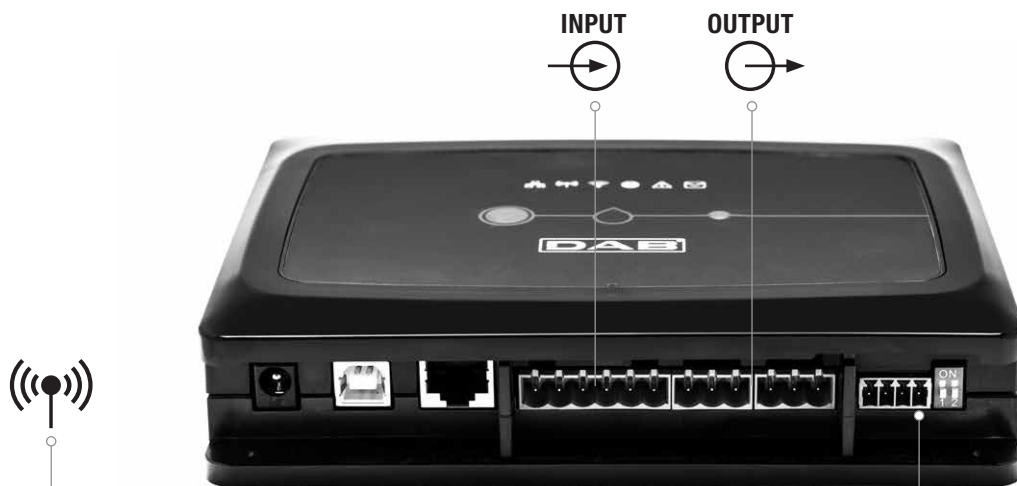
It is a multi-channel service of high added value that can be used with any system, irrespective of its nature and size and in the same environment and with the same instruments.

Being modular, DConnect can manage up to 8 different electronic pumps in a highly simple and integrated manner.

# DCONNECT BOX

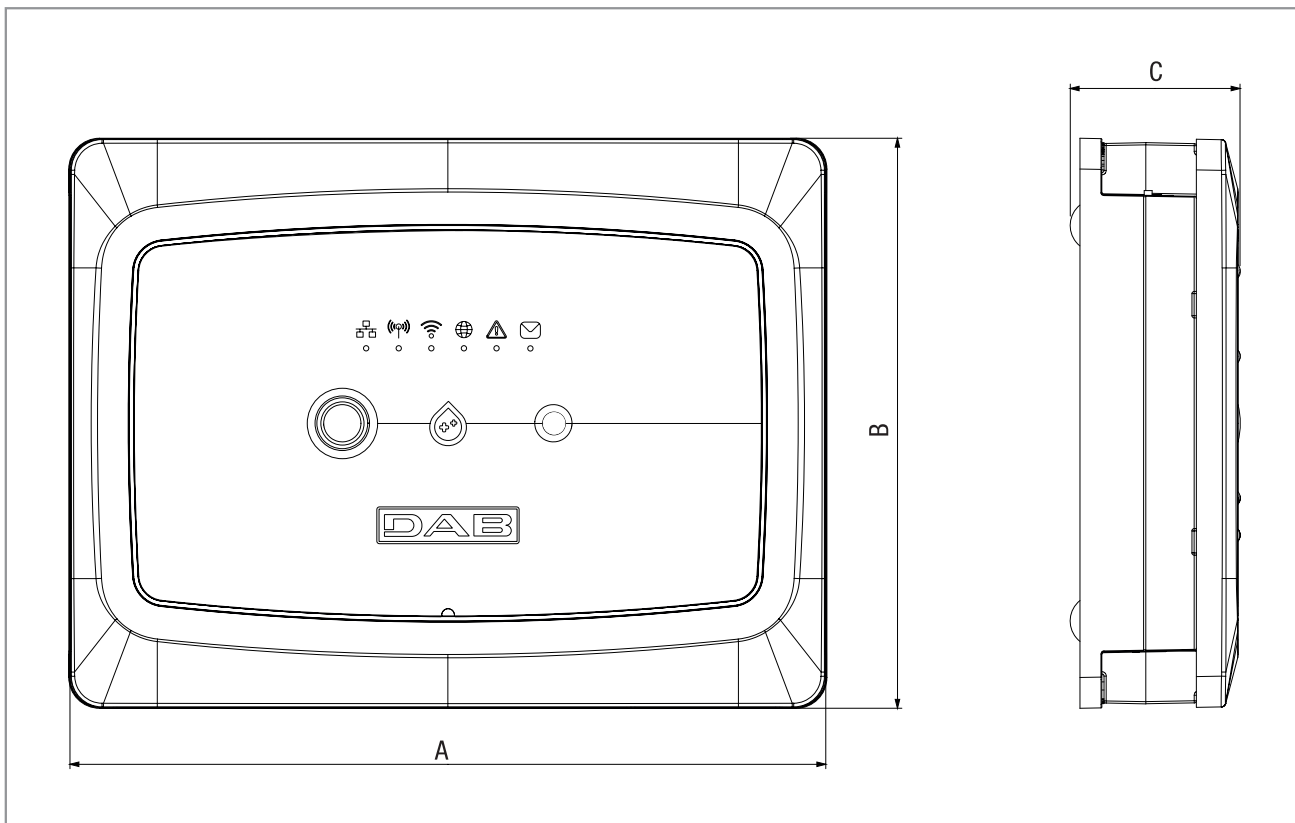
ELECTRONIC REMOTE CONTROL DEVICE

## COMPATIBLE PRODUCT CONNECTIONS:










# DCONNECT BOX

## ELECTRONIC REMOTE CONTROL DEVICE



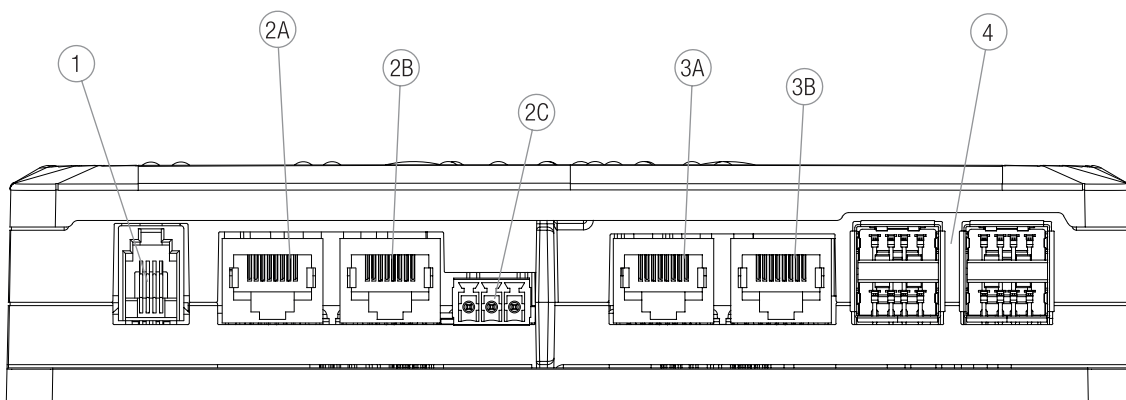
DIMENSIONS			PACKING DIMENSIONS			WEIGHT Kg
A	B	C	L	B	H	
172	129,7	38,6	220	255	145	1,4



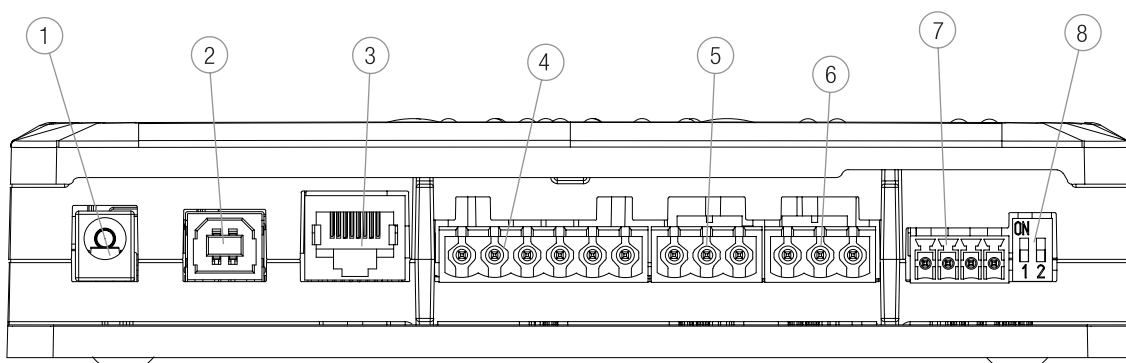
	LAN status LED
	Wireless status LED
	Wi-Fi status LED
	DAB Service Centre connection LED
	Generic Error LED
	Message LED
	DConnect drop LED

# DCONNECT BOX

## ELECTRONIC REMOTE CONTROL DEVICE



1	Serial Port
2A	ADAC/MCE CAN-BUS1 Port
2B	ADAC/MCE CAN-BUS1 Port
2C	ACTIVE DRIVER PLUS CAN-BUS1 Port
3A	ADAC/MCE CAN-BUS2 Port
3B	ADAC/MCE CAN-BUS2 Port
4	USB EBOX/Expansion Ports



1	Power input / Power Jack
2	Host USB (Power input only)
3	Ethernet Port: LAN cable connection
4	I/O - 4 no-opto isolated voltage-controlled inputs
5	I/O - Relay output OUT1
6	I/O - Relay output OUT2
7	Modbus: Evoplus
8	Dip Switch: Modbus configuration

### PACK CONTENT:

- DConnect Box.
- Wall-mounted power supply unit, plugin socket and ferrite core.
- Screws and plugs for wall-mounted installation.
- DIN rail installation bracket.
- Electric connectors for Modbus, Canbus, I/O, Relay connections.
- Instruction manual.

**LICENSES:** <http://dconnect.dabpumps.com/GPL>



# TECHNICAL APPENDIX

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### GENERAL INFORMATION

#### FUNDAMENTAL TERMS USED IN PUMPS

The following is a list of fundamental terms used in pumps and an explanation of their meanings. Their knowledge is necessary in order to discuss hydraulic pumps. All measurements are given in Technical units. Reference should be made to the chart for their international and Anglo-Saxon equivalents.

#### HEAD

Head means height, difference in level, gradient. For example if a pump has a flow of Q litres per second and a head of 30 metres, it means that it is capable of raising Q litres of liquid by 30 metres every second (therefore achieving a 30 metre gradient). For each given pump, the head is determined by its construction, such as the external diameter of the impeller and the speed of rotation, but it is not affected by the pumped liquid. This means that the pump as such can raise by 30 metres Q litres per second of water, petrol, mercury, etc.; the only difference in the three cases will be the power of the motor required.

#### SPECIFIC WEIGHT OF A LIQUID OR FLUID

The specific weight of a liquid or fluid is the weight per unit volume of the liquid/fluid. Specific weight is usually measured in kg/dm<sup>3</sup> or kg/l, remembering that 1 dm<sup>3</sup> equals 1 litre.

#### PRESSURE

Pressure means weight per unit of area (e.g. kg/cm<sup>2</sup>), and it should not be confused with head. In the case of liquids, the pressure that the liquid exerts on a surface is given by the product of the head (or height) of the liquid, multiplied by its specific weight. For this reason, the column of several km of air on the earth's surface produces at sea level a pressure of about 1kg/cm<sup>2</sup> (equal to approx. 1 atmosphere). If the same column were of water rather than air, the pressure would be some 700 to 800 times greater, due to the fact that water has a specific weight approximately 700-800 times greater than that of air.

Bearing in mind that a column of water 10 m high is equivalent to approx. 1 kg/cm<sup>2</sup>, if we placed a manometer on the delivery of the pump, the following pressure increases would be measured:

- |  |   |
|--|---|
| a) with petrol (specific weight 0,7 kg/dm <sup>3</sup> )   | = 00,7 x 0,001 x 30 x 100 = 2,1 kg/cm <sup>2</sup>  |
| b) with water (specific weight 1,0 kg/dm <sup>3</sup> )    | = 00,1 x 0,001 x 30 x 100 = 3,0 kg/cm <sup>2</sup>  |
| c) with mercury (specific weight 13,6 kg/dm <sup>3</sup> ) | = 13,6 x 0,001 x 30 x 100 = 40,8 kg/cm <sup>2</sup> |

#### FLOW

Flow means the quantity of liquid or fluid that passes through a point, such as the delivery outlet of a pump, or a cross section of a pipe, in the set unit of time.

This can be measured in litres per minute (l/min), litres per second (l/s), cubic metres per hour (m<sup>3</sup>/h) etc.

It should be noted that there is a perfect analogy between the flow of water through a pipe and the flow of electricity through a wire. It is sufficient to remember that hydraulic head is equivalent to electrical potential or voltage, and hydraulic flow is equivalent to electric current or amperes in electrotechnics. Even their behaviour is the same. Just as a thin wire restricts the flow of electricity more than one with a larger section, in the same way, a pipe of a smaller diameter offers a greater resistance to the flow of a liquid than one of a larger one. Just as the passage of electric current through the wire to a cable needs a voltage difference, in the same way, the flow of a liquid or fluid through a pipe needs a certain head.

There will never be a movement of liquid between two points of a perfectly horizontal pipe, and with the liquid at the same head in both points. This is due to the fact that, in the same way as the cable exerts a certain resistance to the passage of the electric current (electric resistance), the pipe also exerts a certain resistance to the passage of the fluid, the extent of which depends on the quality of the pipe (material, shape, presence of scale) and its section, and therefore the speed at which the fluid runs through the pipe. This resistance is called head loss.

#### HEAD LOSS

Head loss is that part of the head, possessed by the liquid, which is lost when passing through a pipe, a valve, a filter, etc. This loss cannot be recovered, as it is lost due to friction. Going back to the analogy between electrical and hydraulic phenomena, just as the losses in a cable increase in proportion with the current, so head losses are proportionally greater as the speed of the liquid increases. This means that the more the flow is restricted by scaled pipes, clogged filters, partially closed valves etc. the greater the head loss will be.

#### PUMP

A pump is a machine used to give a certain head to a liquid that passes through it. The head can be used to raise the liquid to a higher level, or to make it flow inside a pipe, or even in the open air, so that it covers a certain distance. The characteristics of a pump are:

- Flow** (the quantity of liquid that is moved through the pump in a unit of time)
- Head** (that is the height at which the pump is capable lifting the flow)

Based on the existing relationship between the flow and the head, it is possible to have:

- Pumps with small flow and large head (piston pumps, rotary pumps, small centrifugal pumps).
- Pumps with medium flow and medium head (centrifugal pumps in general).
- Pumps with large flow and small head (helico-centrifugal pumps, propeller pumps).

Centrifugal pumps, helico-centrifugal pumps and propeller pumps have a rotary motion and their speed is universally measured in revolutions per minute

(rpm). With these machines operating at a given speed, for each given value of flow, there is only one value of head. This means that in order to increase or decrease the performance of these types of pumps, the operating speed must be varied accordingly. Basically, the liquid passing through the pump is supplied with energy that is related to the head and the speed of the liquid itself. This energy supplied within the unit of time is known as delivered power.

### DELIVERED POWER

The delivered power is the power delivered by the pump to the liquid. The value of this delivered power depends on three factors: flow, head, and specific weight of the pumped liquid. The higher these three factors, the higher is the power delivered by the pump. For example, a pump delivering petrol does less work than when delivering sulphuric acid, because the specific weights of the two liquids are different.

In order to pump a liquid, a pump must be driven by a motor. In the vast majority of cases, this is either an electric, or an internal combustion motor. Electric motors use electric power, while internal combustion motors (engines) use oil or oil derivative fuels. The power that the pump needs in order to operate is called absorbed power.

### DELIVERED POWER CALCULATION

Delivered power is normally expressed in kW or HP, indicating with:

Q = the flow

H = the head in metres of the column of liquid (m.c.l.)

$\gamma$  = the specific weight of the liquid

The delivered power (P3) is calculated using one of the following equations:

$$P_3 = \frac{\gamma \text{ (kg/dm}^3\text{)} \times Q \text{ (l/s)} \times H \text{ (m.c.l.)}}{75} \text{ in HP}$$

$$P_3 = \frac{\gamma \text{ (kg/dm}^3\text{)} \times Q \text{ (m}^3\text{/h)} \times H \text{ (m.c.l.)}}{270} \text{ in HP}$$

$$P_3 = \frac{\gamma \text{ (kg/dm}^3\text{)} \times Q \text{ (l/s)} \times H \text{ (m.c.l.)}}{102} \text{ in kW}$$

$$P_3 = \frac{\gamma \text{ (kg/dm}^3\text{)} \times Q \text{ (l/min)} \times H \text{ (m.c.l.)}}{4500} \text{ in HP}$$

$$P_3 = \frac{\gamma \text{ (kg/dm}^3\text{)} \times Q \text{ (m}^3\text{/h)} \times H \text{ (m.c.l.)}}{367} \text{ in kW}$$

$$P_3 = \frac{\gamma \text{ (kg/dm}^3\text{)} \times Q \text{ (l/min)} \times H \text{ (m.c.l.)}}{6120} \text{ in kW}$$

### ABSORBED POWER

Absorbed power is the power that the pump absorbs from the motor, to give to the liquid the delivered power discussed above.

Not all the absorbed power becomes delivered power, as some power is lost through friction, and even more within the pump itself, due to hydraulic losses. It is therefore clear that the delivered power is always less than the absorbed power, and the relation between the two is a number always lower than 1. This number is known as the efficiency.

### YIELD

The efficiency is obtained by dividing the delivered power by the absorbed power, and is normally expressed as a percentage. For example, an efficiency of 75 % of a pump indicates that only 75 % of the absorbed power is converted into delivered power, with the remaining 25 % being lost due to friction. Therefore, the higher the efficiency of a pump, the smaller the portion of absorbed power being lost. If one then considers that the cost of energy relates to the absorbed power, it immediately becomes apparent just how important efficiency is. If we compare two pumps with the same 1 HP delivered power, but with an efficiency of 50 % for the first, and 60 % for the second, we can assume that the first one will need 2 HP to supply 1, while the second will only need 1,67 HP to achieve the same result. This means that the efficiency of a pump expresses, better than any other parameter, the quality of the pump and the related savings in terms of operating costs.

### CALCULATION OF POWER OUTPUTS

P1: is the power absorbed by the motor in kW (generally indicated by the wattmeter).

P2: the power delivered by the motor in kW. This is measured at the brake (it basically is the power absorbed by the pump).

P3: the power delivered by the pump in kW.

$$\text{Power output of the motor } \eta = \frac{P_2}{P_1}$$

$$\text{Power output of the motor } \eta = \frac{P_3}{P_2}$$

$$\text{Power output of the motor } \eta = \frac{P_3}{P_1}$$

### THE HEAD OF A PUMP AND ITS MEASUREMENT

The head of a pump is always the differential head, or that given by the pump itself. This is generally expressed in metres. In order to ascertain the head of a surface pump, during its operation it is necessary to measure the value of the head both at the suction and at the delivery of the pump itself, making sure that the readings are taken at the same level, which is called the reference plane. Two cases are possible, depending on installation:

- 1) the value of the head at the suction is negative (i.e. below zero shown on the manometer): in this case, the level of the liquid collected is lower than the level of the suction inlet.
- 2) the value of the head at the suction is positive (i.e. above zero shown on the manometer) in this case, the level of the liquid collected is higher than the level of the suction inlet (flooded suction).

In the first case the head of the pump is given by the sum of the two readings, while in the second it is given by subtracting the value of the head at the suction inlet from the value at the delivery outlet.

Finally, it is necessary to make sure that the readings at the suction and the delivery have been taken from apertures of the same diameter, so that they are not distorted by a difference in the speed of the liquid at the point of measurement. Any correction is made by calculating the dynamic head, or that part of the head linked with the speed of the liquid, which means that part of the head that the liquid possesses at the measuring section, due to the fact that it is moving. The dynamic head  $H_d$ , expressed in metres, is calculated using the following formula:

$$H_d = \frac{v^2}{2g}$$

where:  $v$  = speed of the fluid at the measuring point, given in m/s

$g$  = acceleration of gravity (9,81), expressed in m/s<sup>2</sup>

$2g = 2 \times 9,81 = 19,62 \text{ m/s}^2$

The correction of the head is given by the difference between the dynamic head at the delivery, and the dynamic head at the suction. It is therefore clear that if the readings upstream and downstream the pump have been taken on pipes of the same diameter, and therefore with the liquid flowing at the same speed, the correction is zero.

For submersible impeller pumps, it is sufficient, during operation, to measure the head at the delivery outlet. In this case, the head of the pump is then given by adding the value read to the dynamic head (at the delivery outlet), and to the difference in level between the free surface of the liquid collected and the manometer.

### VARIATION IN PUMP HEAD IN RELATION TO SPEED VARIATION

The performance of a pump is directly connected to its speed in rpm ( $n$ ). Providing that there is no cavitation, the law of similarity may be used, which is expressed as follows:

$$Q_x = Q \times \frac{n_x}{n}$$

$$H_x = H \times \left(\frac{n_x}{n}\right)^2$$

$$P_{2-x} = P_2 \times \left(\frac{n_x}{n}\right)^3$$

For example, when doubling the number of revolutions ( $n_x$ ) one obtains:

$Q_x$  = the value of the flow doubles

$H_x$  = the value of the head is 4 times higher

$P_{2-x}$  = the value of the absorbed power is 8 times higher

$Q - H - P_2$  are the values at speed  $n$

$Q_x - H_x - P_{2-x}$  are the values at speed  $n_x$ .

### NOTES ON THE MOTORS OF ELECTRIC PUMPS

INDEX OF SYMBOLS USED	
$P_1$	: POWER ABSORBED BY THE MOTOR IN kW.
$P_2$	: POWER DELIVERED BY THE MOTOR IN kW OR HP.
$V \sim$	= AC POWER INPUT VOLTAGE AT THE MAINS.
Hz	= FREQUENCY IN CYCLES PER SECOND OF THE POWER INPUT VOLTAGE.
I	= CURRENT ABSORBED BY THE MOTOR IN AMPERES.
$\cos\varphi$	= POWER FACTOR.
$n^{1/min}$	= SPEED OF ROTATION IN RPM.
$\eta$	= OUTPUT POWER (RELATION BETWEEN DEVELOPED POWER AND ABSORBED POWER $P_2/P_1$ ).
p	= NUMBER OF POLES OF THE MOTOR.
Cn	= NOMINAL TORQUE OF THE MOTOR.

#### NO-LOAD SPEED OF ROTATION

The no-load speed of single-phase and three-phase electric induction motors is given by the formula:

$$n^{1/min} = \frac{120 \times \text{Hz}}{p}$$

No-load speed of rotation  $n^{1/min}$

FREQUENCY Hz	2 POLES	4 POLES
50	3000	1500
60	3600	1800

The full-load speed is 2 to 7 % lower than the no-load speed (2 to 7 % sliding).

#### CURRENT ABSORBED

$$\text{Single-phase: } I = \frac{1000 \times P_2 \text{ (kW)}}{V \times \cos\varphi \times \eta} \quad \text{or: } I = \frac{736 \times P_2 \text{ (HP)}}{V \times \cos\varphi \times \eta}$$

$$\text{Three-phase: } I = \frac{1000 \times P_2 \text{ (kW)}}{1.73 \times V \times \cos\varphi \times \eta} \quad \text{or: } I = \frac{736 \times P_2 \text{ (HP)}}{1.73 \times V \times \cos\varphi \times \eta}$$

#### ABSORBED POWER

$$\text{Single-phase: } P_1 \text{ (kW)} = \frac{V \times I \times \cos\varphi}{1000}$$

$$\text{Three-phase: } P_1 \text{ (kW)} = \frac{1.73 \times V \times I \times \cos\varphi}{1000}$$

#### POWER DELIVERED AT THE MOTOR AXIS

$$\text{Single-phase: } P_2 \text{ (kW)} = \frac{V \times I \times \cos\varphi \times \eta}{1000} \quad \text{or: } P_2 \text{ (HP)} = \frac{V \times I \times \cos\varphi \times \eta}{736}$$

$$\text{Three-phase: } P_2 \text{ (kW)} = \frac{1.73 \times V \times I \times \cos\varphi \times \eta}{1000} \quad \text{or: } P_2 \text{ (HP)} = \frac{1.73 \times V \times I \times \cos\varphi \times \eta}{736}$$

#### YIELD

$$\eta = \frac{P_2 \text{ (kW)}}{P_1 \text{ (kW)}}$$

### POWER FACTOR

$$\text{Single-phase: } \cos\varphi = \frac{P_2 (\text{kW}) \times 1000}{V \times I \times \eta}$$

$$\text{or: } \cos\varphi = \frac{P_1 (\text{kW}) \times 1000}{V \times I}$$

$$\text{Three-phase: } \cos\varphi = \frac{P_2 (\text{kW}) \times 1000}{1,73 \times V \times I \times \eta}$$

$$\text{or: } \cos\varphi = \frac{P_1 (\text{kW}) \times 1000}{1,73 \times V \times I}$$

### TORQUE FACTOR

$$C_n = \frac{P_2 (\text{kW}) \times 1000}{1.027 \times n^{1/\text{min}}} \text{ in kgm}$$

$$C_n = \frac{P_2 (\text{HP}) \times 736}{1.027 \times n^{1/\text{min}}} \text{ in kgm}$$

$$C_n = \frac{702 \times \text{HP}}{n^{1/\text{min}}} \text{ in decaNewtonmetres}$$

### RELATIONSHIP BETWEEN KW AND HP

$$1 \text{ HP} = 0,736 \text{ kW}$$

$$1 \text{ kW} = 1,36 \text{ HP}$$

$$\frac{\text{HP}}{1.36} = \text{kW}$$

$$\text{kW} \times 1,36 = \text{HP}$$

### STARTING CURRENT (ISP)

The starting current ( at switch on) of a motor is 4 to 8 times greater than the nominal current, depending on the power of the motor.

$$I_{sp} = I_n \times 4 \div 8$$

### DETAILS ON CAPACITORS

The approximate current absorbed by a capacitor is:

$$I = \frac{6,28 \times F \times C \times V}{1.000.000}$$

Where:

I = current in Amps absorbed by the capacitor.

F = frequency in Hz of the applied voltage.

C = capacity of capacitor  $\mu\text{F}$ .

V = applied voltage.

Example:

The current absorbed by a 14  $\mu\text{F}$  capacitor connected to a 220 Volt - 50 Hz power input is:

$$I = \frac{6,28 \times 50 \times 14 \times 220}{1.000.000} = 0,96 \text{ Amperes}$$

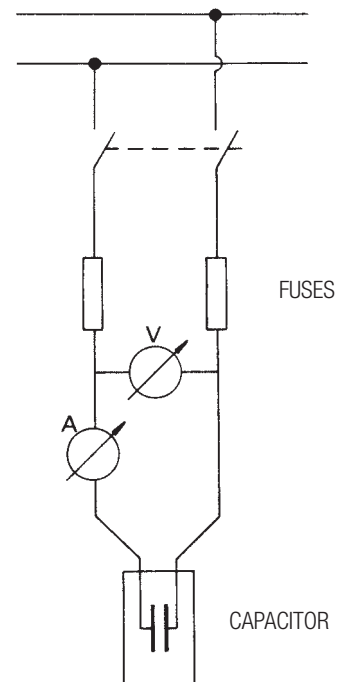
The approximate capacity of a capacitor is determined by:

$$C = \frac{I}{6,28 \times F \times V} \times 1.000.000$$

Example:

The capacity of a capacitor absorbing 1,4 Amps connected to a 220 Volt - 50 Hz power input is:

$$C = \frac{1,4}{6,28 \times 50 \times 220} \times 1.000.000 = 20,2 \mu\text{F}$$



### STAR-DELTA START-UP

The normally delta  $\Delta$  connected motor is connected to the network using a star type connection. The current and the starting torque are both reduced to 1/3 of the value they would be if delta  $\Delta$  connected.

### PROTECTION

It is recommended that motors are connected to the power input network using appropriate three-fuse thermal magnetic circuit breakers, or in any case circuit breakers complying with current local regulations.

### LOAD LOSS AND SPEED TABLE

In order to accurately calculate **load losses and speed**, the following table is used:

FLOW			NEW GALVANISED PIPING									
			NOMINAL DIAMETERS: INCHES AND MM									
l/s	l/min	m <sup>3</sup> /h	1/2"	3/4"	1"	1"1/4	1"1/2	2"	2"1/2	3"	3"1/2	4"
			15,75	21,25	27	35,75	41,25	52,5	68	80,25	92,5	105
0,17	10	0,6	0,856	0,47	0,291							
			9,01	20,9	0,65							
0,25	15	0,9	1,284	0,705	0,4387	0,249						
			19,07	4,43	1,38	0,35						
0,33	20	1,2	1,712	0,94	0,582	0,332	0,25					
			32,47	7,55	2,35	0,6	0,3					
0,42	25	1,5	2,14	1,175	0,728	0,415	0,31					
			49,06	11,41	3,55	0,91	0,45					
0,5	30	1,8	2,568	1,411	0,874	0,498	0,37	0,23				
			68,74	15,98	4,98	1,27	0,63	0,2				
0,58	35	2,1	2,996	1,646	1,019	0,581	0,44	0,27				
			91,42	21,26	6,62	1,69	0,84	0,26				
0,67	40	2,4		1,881	1,165	0,664	0,5	0,31				
				27,22	8,48	2,16	1,08	0,33				
0,83	50	3		2,351	1,456	0,831	0,62	0,39	0,23			
				41,13	12,81	3,27	1,63	0,5	0,14			
1	60	3,6		2,821	1,747	0,997	0,75	0,46	0,28			
				57,63	17,95	4,58	2,28	0,7	0,2			
1,17	70	4,2		3,291	2,039	1,163	0,87	0,54	0,32	0,23		
				76,64	23,88	6,08	3,03	0,94	0,27	0,12		
1,33	80	4,8			2,33	1,329	1	0,62	0,37	0,26		
					30,57	7,79	3,88	1,2	34	0,15		
1,5	90	5,4			2,621	1,495	1,12	0,69	0,41	0,3		
					38,01	9,69	4,83	1,49	0,42	0,19		
1,67	100	6			2,912	1,661	1,25	0,77	0,46	0,33	0,25	
					46,19	11,77	5,86	1,81	0,51	0,23	0,11	
2,08	125	7,5			3,641	2,077	1,56	0,96	0,57	0,41	0,31	0,24
					69,79	17,79	8,86	2,74	0,78	0,35	0,17	0,09
2,5	150	9				2,492	1,87	1,16	0,69	0,49	0,37	0,29
						24,92	12,41	3,84	1,09	0,49	0,24	0,13
2,92	175	10,5				2,907	2,18	1,35	0,8	0,58	0,43	0,34
						33,15	16,51	5,1	1,45	0,65	0,32	0,17

White numbers: Load losses in m. for every 100 m of pipework

Green numbers: Water speed in m/sec

The table refers to galvanised pipework.

For other materials multiply as follows:

- 0,6 PVC pipes.
- 0,7 aluminium pipes.
- 0,8 laminated steel and stainless steel.

### LOAD LOSS AND SPEED TABLE

In order to accurately calculate **load losses and speed**, the following table is used:

FLOW			NEW GALVANISED PIPING									
			NOMINAL DIAMETERS: INCHES AND MM									
l/s	l/min	m³/h	1"1/4	1"1/2	2"	2"1/2	3"	3"1/2	4"	5"	6"	8"
			35,75	41,25	52,5	68	80,25	92,5	105	130	155	206
3,33	200	12	3,322	2,5	1,54	0,92	0,66	0,5	0,39	0,25		
			42,43	21,14	6,53	1,85	0,83	0,41	0,22	0,08		
4,17	250	15	4,156	3,12	1,93	1,15	0,82	0,62	0,48	0,31		
			64,12	31,94	9,87	2,8	1,25	1,63	0,34	0,12		
5	300	18		3,74	2,31	1,38	0,99	0,74	0,58	0,38	0,27	
				44,75	13,83	3,92	1,75	0,88	0,47	0,17	0,07	
6,67	400	24		4,99	3,08	1,84	1,32	0,99	0,77	0,5	0,35	
				76,2	23,55	6,68	2,98	1,49	0,8	0,28	0,12	
8,33	500	30			3,85	2,3	1,65	1,24	0,96	0,63	0,44	
					35,58	10,09	4,51	2,26	1,22	0,43	0,18	
10	600	36			4,62	2,75	1,98	1,49	1,16	0,75	0,53	0,3
					49,85	14,14	6,31	3,16	1,7	0,6	0,26	0,06
11,67	700	42				3,21	2,31	1,74	1,35	0,88	0,62	0,35
						18,81	8,4	4,2	2,27	0,8	0,34	0,09
13,33	800	48				3,67	2,64	1,99	1,54	1,01	0,71	0,4
						24,08	10,75	5,38	2,9	1,03	0,44	0,11
15	900	54				4,13	2,97	2,23	1,73	1,13	0,8	0,45
						29,94	13,37	6,69	3,61	1,28	0,54	0,14
16,67	1000	60				4,59	3,3	2,48	1,93	1,26	0,88	0,5
						36,39	16,24	8,13	4,39	1,55	0,66	0,16
20,83	1250	75					4,12	3,1	2,41	1,57	1,1	0,63
							24,54	12,29	6,63	2,34	0,99	0,25
25	1500	90					4,95	3,72	2,89	1,88	1,33	0,75
							34,39	17,22	9,29	3,28	1,39	0,35
29,17	1750	105						4,34	3,37	2,2	1,55	0,88
								22,9	12,35	4,37	1,85	0,46
33,33	2000	120						4,96	3,85	2,5	1,77	1
								29,31	15,81	5,59	2,37	0,59
41,67	2500	150							4,81	3,14	2,21	1,25
									23,89	8,44	3,59	0,9
50	3000	180								3,77	2,65	1,5
											11,83	5,02
66,67	4000	240								5,03	3,53	2
											20,15	8,55
83,33	5000	300									4,42	2,5
												12,93

White numbers: Load losses in m. for every 100 m of pipework

Green numbers: Water speed in m/sec

The table refers to galvanised pipework.

For other materials multiply as follows:

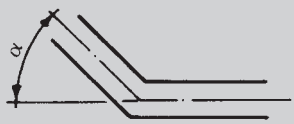
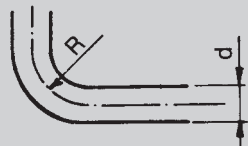
- 0,6 PVC pipes.
- 0,7 aluminium pipes.
- 0,8 laminated steel and stainless steel.

HAZEN WILLIAMS CALCULATION  
FORMULA (UNI 9489 13.3.3.6)



### HEAD LOSS

in cm of column of water in bends, gate valves, and foot valves

VELOCITY OF WATER IN m/s	SHARP EDGED BENDS					NORMAL BENDS					GATE VALVE	FOOT VALVE	NON-RETURN VALVE	HEAD LOSS ON EXIT FROM PIPES $V^2/2g$
														
	$\alpha = 30^\circ$	$\alpha = 40^\circ$	$\alpha = 60^\circ$	$\alpha = 80^\circ$	$\alpha = 90^\circ$	$\frac{d}{R} = 0,4$	$\frac{d}{R} = 0,6$	$\frac{d}{R} = 0,8$	$\frac{d}{R} = 1$	$\frac{d}{R} = 1,5$				
0,10	0,03	0,04	0,05	0,07	0,08	0,07	0,08	0,01	0,0155	0,027	0,03	30	30	0,05
0,15	0,06	0,73	0,1	0,14	0,17	0,016	0,019	0,024	0,033	0,06	0,033	31	31	0,12
0,2	0,11	0,13	0,18	0,26	0,31	0,028	0,033	0,04	0,059	0,11	0,058	31	31	0,21
0,25	0,17	0,21	0,28	0,4	0,48	0,044	0,052	0,063	0,091	0,17	0,09	31	31	0,32
0,3	0,25	0,3	0,41	0,6	0,7	0,063	0,074	0,09	0,13	0,25	0,13	31	31	0,46
0,35	0,33	0,4	0,54	0,8	0,93	0,085	0,10	0,12	0,18	0,33	0,18	31	31	0,62
0,4	0,43	0,52	0,71	1,0	1,2	0,11	0,13	0,16	0,23	0,43	0,23	32	31	0,82
0,5	0,67	0,81	1,1	1,6	1,9	0,18	0,21	0,26	0,37	0,67	0,37	33	32	1,27
0,6	0,97	1,2	1,6	2,3	2,8	0,25	0,29	0,36	0,52	0,97	0,52	34	32	1,84
0,7	1,35	1,65	2,2	3,2	3,9	0,34	0,40	0,48	0,70	1,35	0,7	35	32	2,5
0,8	1,7	2,1	2,8	4,0	4,8	0,45	0,53	0,64	0,93	1,7	0,95	36	33	3,3
0,9	2,2	2,7	6	5,2	6,2	0,57	0,67	0,82	1,18	2,2	1,2	37	34	4,2
1,0	2,7	3,3	4,5	6,4	7,6	0,7	0,82	1,0	1,45	2,7	1,45	38	35	5,1
1,5	6,0	7,3	10,0	14,0	17,0	1,6	1,9	2,3	3,3	6,0	3,3	47	40	11,5
2,0	11,0	14,0	18,0	26,0	31,0	2,8	3,3	4,0	5,8	11,0	5,8	61	48	20,4
2,5	17,0	21,0	28,0	40,0	48,0	4,4	5,2	6,3	9,1	17,0	9,1	78	58	32,0
3,0	25,0	30,0	41,0	60,0	70,0	6,3	7,4	9,0	13,0	25,0	13,0	100	71	46,0
3,5	33,0	40,0	55,0	78,0	93,0	8,5	10,0	12,0	18,0	33,0	18,0	123	85	62,0
4,0	43,0	52,0	70,0	100,0	120,0	11,0	13,0	16,0	23,0	42,0	23,0	150	100	82,0
4,5	55,0	67,0	90,0	130,0	160,0	14,0	21,0	26,0	37,0	55,0	37,0	190	120	103,0
5,0	67,0	82,0	110,0	160,0	190,0	18,0	29,0	36,0	52,0	67,0	52,0	220	140	127,0

v = velocity of water in metres per second

d = diameter of pipes in m metres

h = head loss in cm of water column for each metre of pipework, calculated according to the Lang formula:

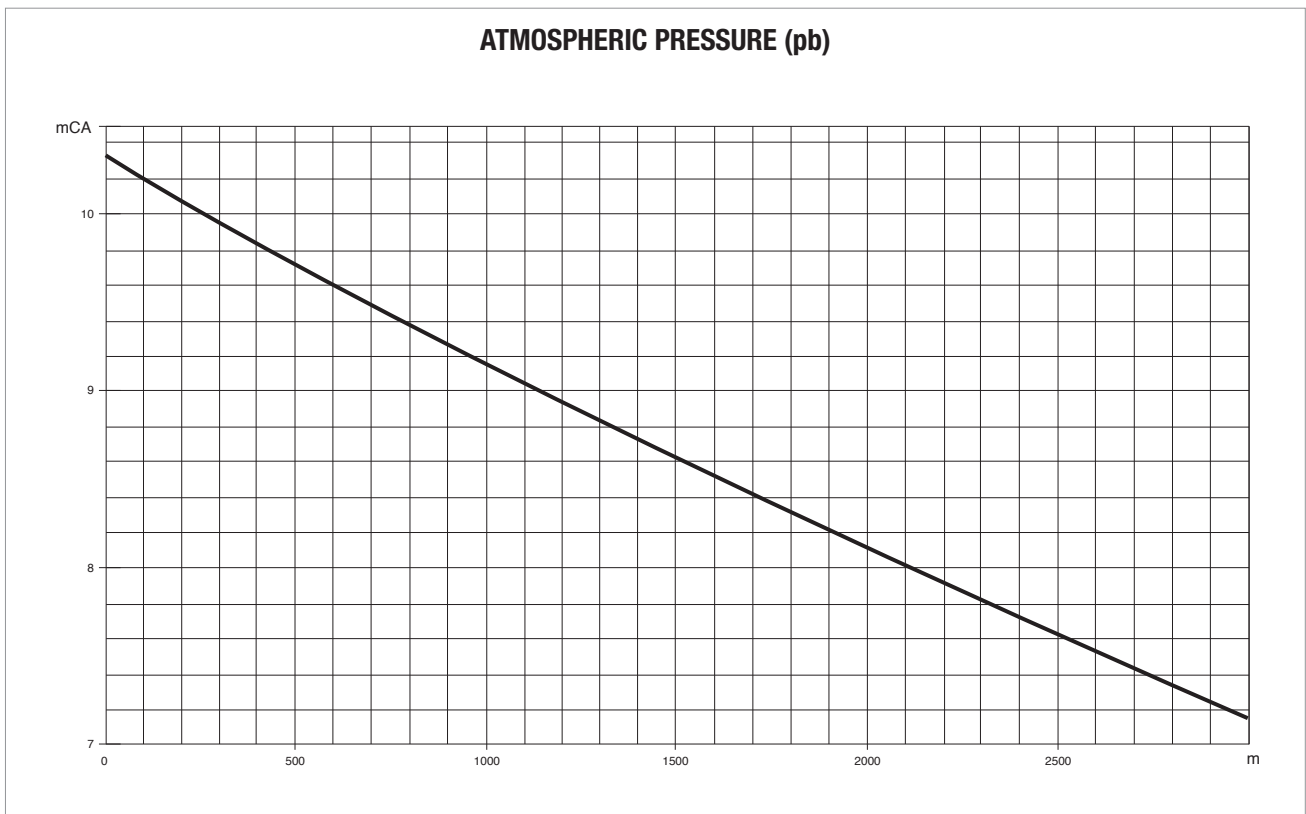
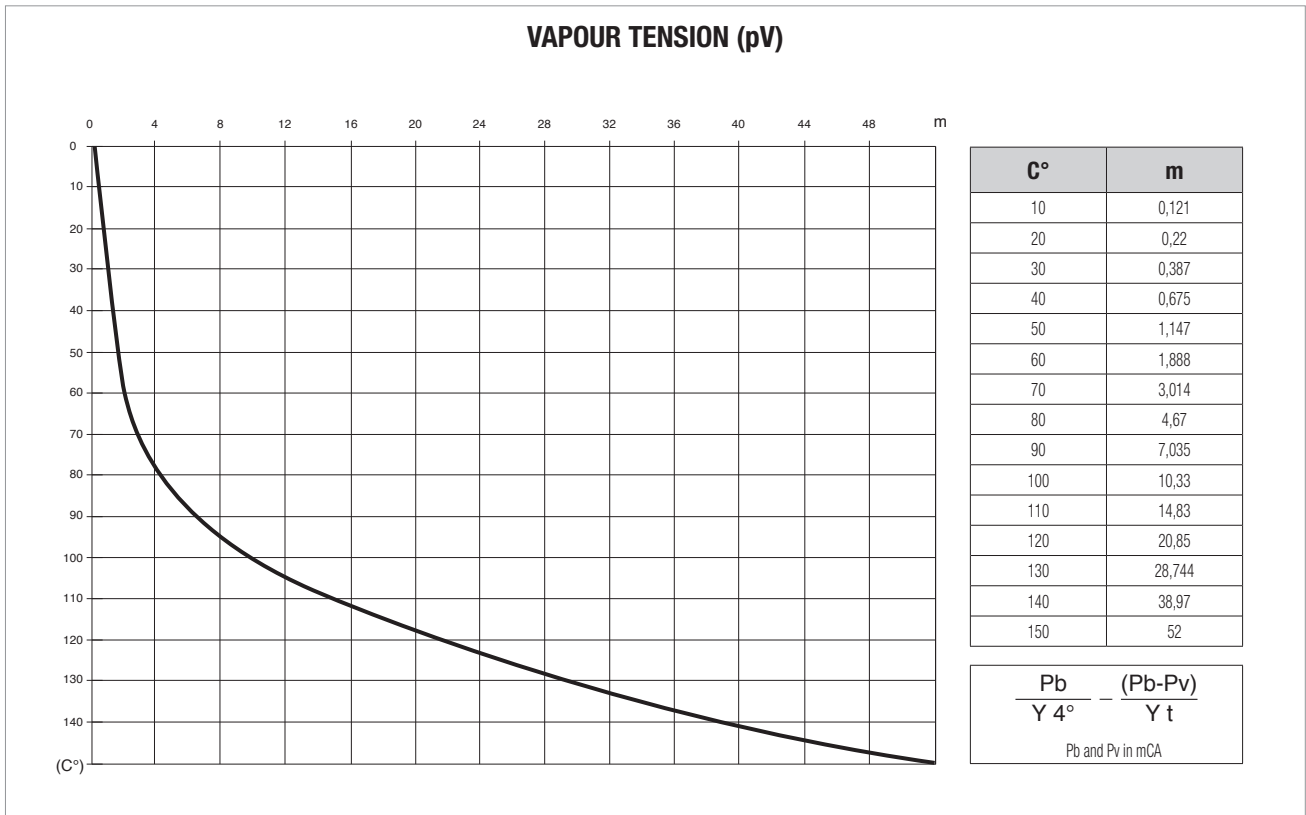
$$h = \lambda \times \frac{100}{d} \times \frac{v^2}{2g} \quad \lambda = 0,02 + \frac{0,0018}{\sqrt{v \times d}}$$

The only loss in bends is that due to the contraction of the liquid stream when changing direction (the development of the curves must therefore be included in the length of the pipework); the head loss for gate valves has been determined through technical tests.

The head loss for gate valves and normal bends is equal to that of 5 m of straight pipework, while that of non-return valves is equal to 15 m.

The values given are for pipes with a completely smooth internal surface. In case of rough or scaled pipes, allowances must be made accordingly.

### VAPOUR TENSION AND SPECIFIC WEIGHT OF WATER AS A FUNCTION OF TEMPERATURE



### CONVERSION TABLE FOR UNITS OF MEASURE

CHARACTERISTIC	SYSTEM UNIT OF MEASURE	UNIT OF MEASURE	SYMBOL	CONVERSIONS		
				SYSTEM	INTERNATIONAL SYSTEM (SI)	IMPERIAL SYSTEM
LENGTH	Technical and International	metre decimetre centimetre millimetre	m dm cm mm	1 dm = 0,1 m 1 cm = 0,01 m 1 mm = 0,001 m		1 m = 3,28 ft 1 dm = 3,937 in 1 cm = 0,3937 in
	Imperial	inch foot yard	1", in 1", ft yd	1" = 25,4 mm 1" ft = 0,3048 m 1 yd = 0,9144 m		1 ft = 12" 1 yd = 3 ft = 26"
AREA	Technical and International	metres squared centimetres squared millimetres squared	m <sup>2</sup> cm <sup>2</sup> mm <sup>2</sup>	1 cm <sup>2</sup> = 0,0001 m <sup>2</sup> 1 mm <sup>2</sup> = 0,01 cm <sup>2</sup>		1 m <sup>2</sup> = 1,196 sq.yd 1 m <sup>2</sup> = 10,764 sq.ft 1 cm <sup>2</sup> = 0,155 sq.in
	Imperial	square inch square foot square yard	sq.in sq.ft sq.yd	1 sq.in = 6,45 cm <sup>2</sup> 1 sq.ft = 0,0929 m <sup>2</sup> 1 sq.yd = 0,836 m <sup>2</sup>		1 sq.ft = 144 sq.in 1 sq.yd = 1,296 sq.in 1 sq.yd = 9 sq.ft
VOLUME	Technical and International	metre cubed decimetre cubed centimetre cubed litre cubed	m <sup>3</sup> cm <sup>3</sup> mm <sup>3</sup> l	1 m <sup>3</sup> = 1.000 dm <sup>3</sup> 1 cm <sup>3</sup> = 0,001 m <sup>3</sup> = 1.000 cm <sup>3</sup> 1 mm <sup>3</sup> = 0,001 dm <sup>3</sup> 1 l = dm <sup>3</sup>		1 dm <sup>3</sup> = 0,22 Imp.gal 1 dm <sup>3</sup> = 0,264 US.gal 1 dm <sup>3</sup> = 61,0 cu.in
	Imperial	cubic inch cubic feet Imperial gallons U.S. gallons	cu.in cu.ft Imp.gal USA.gal	1 cu.in = 16,39 cm <sup>3</sup> 1 cu.ft = 28,34 m <sup>3</sup> 1 Imp.gal = 4,546 m <sup>3</sup> 1 US.gal = 3,785 dm <sup>3</sup>		1 Imp.gal = 1,201 US.gal 1 US.gal = 0,833 Imp.gal
TEMPERATURE	Technical and International	degrees Centigrade degrees Kelvin	°C °K	°C = °K - 273 °K = °C + 273		°C = 5/9 x (°F - 32) °K = 5/9 x (°F - 32) + 273
	Imperial	degrees Fahrenheit	°F	°F = 9/5 x °C + 32		-
		freezing point of water at atmospheric pressure: boiling point of water at atmospheric pressure:		000°C = 273 °K = 032 °F 100°C = 373 °K = 212 °F		
WEIGHT and FORCE	Technical	kilogram	kg	-	1 kg = 9,81 N	1 kg = 2,203 lb
	International	Newton	N	1 N = 0,102 kg	-	1 N = 0,22546 lb
	Imperial	pound	lb	1 lb = 0,454 kg	1 lb = 4,452 N	-
SPECIFIC WEIGHT	Technical	kilogram per decimetre cubed	kg/dm <sup>3</sup>	-	1 kg/dm <sup>3</sup> = 9,807 N/dm <sup>3</sup>	1 kg/dm <sup>3</sup> = 62,46 lb/cu.ft
	International	Newton per decimetre cubed	N/dm <sup>3</sup>	1 N/dm <sup>3</sup> = 0,102 kg/dm <sup>3</sup>	-	1 N/dm <sup>3</sup> = 6,36 lb/cu.ft
	Imperial	pound per cubic foot	lb/dm <sup>3</sup>	1 lb/cu.ft = 0,01600 kg/dm <sup>3</sup>	1 lb/cu.ft = 0,160 N/dm <sup>3</sup>	-
PRESSURE	Technical	atmospheres	kg/cm <sup>2</sup>	-	1 kg/cm <sup>2</sup> = 98,067 kPa 1 kg/cm <sup>2</sup> = 0,9807 bar	1 kg/cm <sup>2</sup> = 14,22 psi
	International	Pascal kiloPascal bar	Pa kPa bar	1 kPa = 0,0102 kg/cm <sup>2</sup> 1 bar = 1,02 kg/cm <sup>2</sup>	1 kPa = 1.000 Pa 1 bar = 100.000 Pa	1 kPa = 0,145 psi 1 bar = 14,50 psi
	Imperial	pounds per square inch	psi	1 psi = 0,0703 kg/cm <sup>2</sup>	1 psi = 0,06895 bar 1 psi = 6,894 kPa	-
FLOW	Technical	litres per minute litres per second metres cubed per hour	l/min l/s m <sup>3</sup> /h	1 l/min = 0,0167 l/s 1 l/s = 3,6 m <sup>3</sup> /h 1 m <sup>3</sup> /h = 16,667 l/min	1 l/s = 0,001 m <sup>3</sup> /s	1 l/min = 0,22 imp.g.p.m. 1 l/min = 0,264 US.g.p.m. 1 m <sup>3</sup> /h = 3,666 imp.g.p.m. 1 m <sup>3</sup> /h = 4,403 US.g.p.m.
	International	metres cubed per second	m <sup>3</sup> /s	1 m <sup>3</sup> /s = 1.000 l/s 1 m <sup>3</sup> /s = 3.600 m <sup>3</sup> /h	-	1 m <sup>3</sup> /s = 13,198 imp.g.p.m. 1 m <sup>3</sup> /s = 15,852 US.g.p.m.
	Imperial	imperial gallons per minute U.S. gallons per minute	Imp.g.p.m. US.g.p.m.	1 Imp.g.p.m. = 4,546 l/min 1 Imp.g.p.m. = 0,273 m <sup>3</sup> /h 1 US.g.p.m. = 3,785 l/min 1 US.g.p.m. = 0,227 m <sup>3</sup> /h	-	1 Imp.g.p.m. = 1,201 US.g.p.m. 1 US.g.p.m. = 0,833 Imp.g.p.m.
TORQUE	Technical	kilogram metre	kgm	-	1 kgm = 9,807 Nm	1 kgm = 7,233 ft.lb
	International	Newton metre	Nm	1 Nm = 0,102 kgm	-	1 Nm = 0,7376 ft.lb
	Imperial	foot pound	ft.lb	1 ft.lb = 0,138 kgm	1 ft.lb = 1,358 Nm	-
WORK and ENERGY	Technical	kilogram metre vapour-horsepower hour	kgm CVh		1 kgm = 9,807 J 1 CVh = 0,736 kWh	1 kgm = 7,233 ft.lb 1 Nm = 0,986 HP.hr.
	International	Joule kiloWatt hour	J kWhq	1 J = 0,102 kgm kWh = 1,36 CVh	-	1 Nm = 0,7376 ft.lb 1 Nm = 0,7376 ft.lb
	Imperial	foot pound Horsepower hour	ft.lb HP.hr.	1 ft.lb = 0,138 kgm 1 HP.hr. = 1,014 CVh	1 ft.lb = 0,358 Nm 1 HP.hr. = 0,746 kWh	-
POWER	Technical	Horse power	HP	1 HP = 0,736 kW	1 HP = 736 W	-
	International	Watt kiloWatt	W kW	1 W = 0,00136 Hp 1 kW = 1,36 Hp	1 kW = 1.000 W	-
KINETIC VISCOSITY	Technical	stokes centistokes	1 St 1 cSt	1 St = 1 cm <sup>2</sup> /s 1 cSt = 0,01 St	1 St = 0,0001 m <sup>2</sup> /s	1 St = 0,00107 ft <sup>2</sup> /s
	International	m <sup>2</sup> /s	m <sup>2</sup> /s	1 m <sup>2</sup> /s = 10.000 St	1 m <sup>2</sup> /s = 10.000 cm <sup>2</sup> /s	1 m <sup>2</sup> /s = 10,764 ft <sup>2</sup> /s
	Imperial	square foot per second	ft <sup>2</sup> /s	1 ft <sup>2</sup> /s = 929 St	1 ft <sup>2</sup> /s = 0,0929 m <sup>2</sup> /s	-

### 4 - Electric connections for inputs and outputs

The MCE/C has 2 digital inputs, one analogue input and 2 digital outputs, in order to make it possible to obtain some interface solutions with more complex systems.

#### 4.1 - Digital Inputs

On the base of the 18-pole terminal board is the indication of the digital inputs:

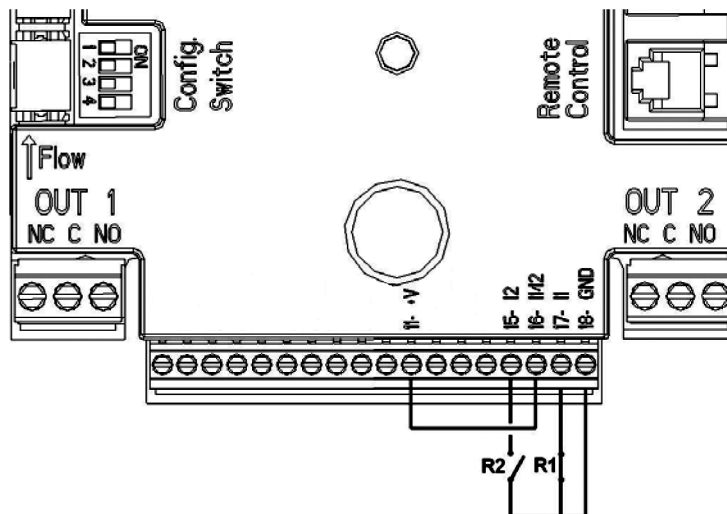
- 11 - V+
- 15 - I2
- 16 - I1/I2
- 17 - I1
- 18 - GND

The switching on of the inputs is possible both in direct and in alternate current. Below are the electric characteristics of the inputs.

Electrical characteristics of the inputs		
	DC inputs [V]	AC inputs [Vrms]
Minimum switch-on voltage [V]	8	6
Maximum switch-off voltage [V]	2	1,5
Maximum permitted voltage [V]	36	36
Current absorbed at 12 V [mA]	3,3	3,3
Max cable section accepted [mm <sup>2</sup> ]	2,13	
Note: the inputs can be driven with any polarity (positive or negative in relation to their own mass return)		

\* to check the availability of the function on specific models contact our customer service.

The example proposed refers to a connection with clean contact, using the internal voltage for driving the input.



#### Digital Input Connection Example

If a voltage is available, rather than a contact, this can also be used to drive the inputs: simply do not use the +V and GND terminals, and connect the voltage source to the desired input, complying with the characteristics described above.

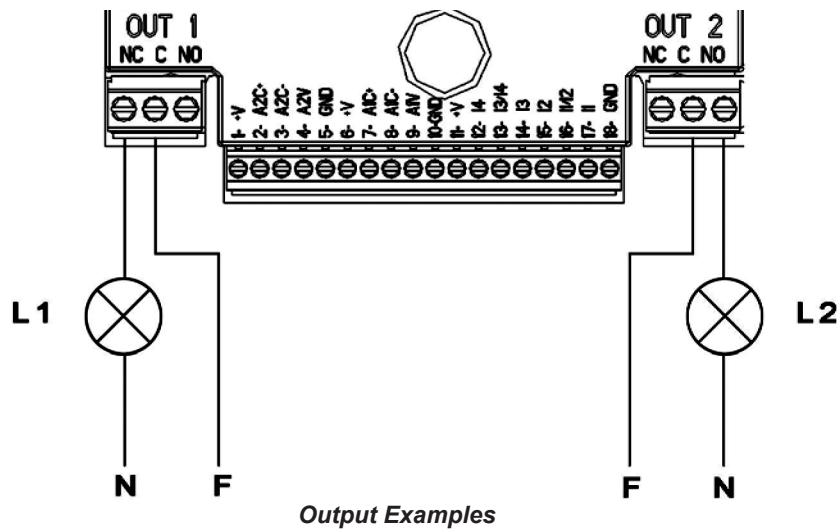
Functions associated to the digital inputs	
<b>I1</b>	<b>Start/Stop:</b> If input 1 is activated from the control panel, it will be possible to remotely control the switching on and off of the pump.
<b>I2</b>	<b>Economy:</b> If input 2 is activated from the control panel, it will be possible to remotely activate the set-point reduction function.

R1	R2	System Status
Open	Open	Pump stopped OFF
Open	Close	Pump stopped OFF
Open	Open	Pump in operation with AUTO set-point set by the user
Open	Close	Pump in operation with reduced ECONOMY set-point

### 4.2 - Outputs:

The connections of the outputs listed below are for the two 3-pole terminal boards indicated with **OUT1** and **OUT2**, under which the type of contact relating to the connection terminal is also indicated (**NC** = Normally Closed, **C** = Common, **NO** = Normally Open).

Characteristics of the output contacts	
Type of contact	NO, NC, COM
Max sustainable voltage [V]	250
Max sustainable current [A]	5 If resistive load 2,5 If inductive load
Max cable section accepted [mm <sup>2</sup> ]	3,80



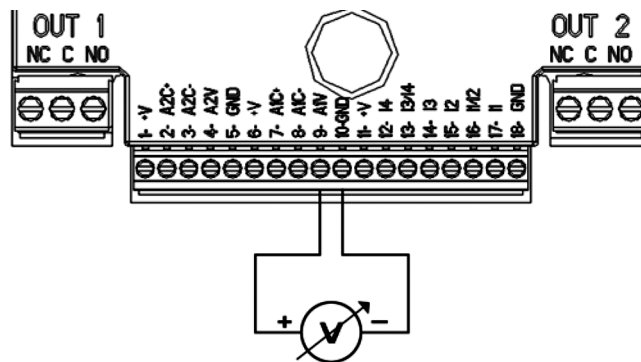
In the example shown, light L1 comes on when the system includes an alarm, and goes off when no faults are detected, while light L2 comes on when the pump is in operation, and goes off when the pump is stopped.

Functions associated to the outputs	
<b>OUT1</b>	Presence/absence of system alarms
<b>OUT2</b>	Pump in operation/Pump stopped

### 4.3 - Analogue input for driving the Constant Curve Mode with External Analogue Signal

On the base of the 18-pole terminal board is the indication of the 0-10 V analogue input:

- A1V (terminal 9): Positive pole
- GND (terminal 10): Negative pole



*Analogue Input Connection Example*

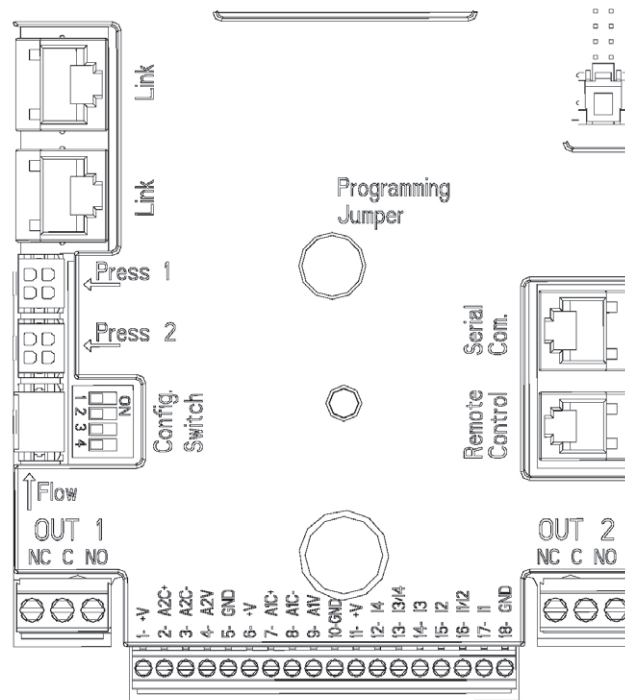
The function associated to the 0-10 V analogue input is the **adjustment of the rotation speed of the pump in proportion to the 0-10 V power input voltage itself.**

### 5 - Twin function

It is possible to create pumping groups with a maximum of 2 pumps. In order to do this, it is necessary to hydraulically connect the pumps on the same delivery and suction manifolds. For twin circulators, this operation is of course not necessary.

It is also necessary to connect the 2 MCE/C inverters using the appropriate interconnection cable, connected to both inverters, using one of the 2 connectors marked with **Link**.

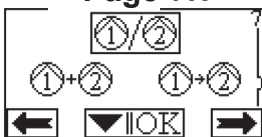
For correct operation of the twin system, it is necessary that all the input terminal board external connections are in parallel between the 2 MCE/C, complying with the numerations of the individual terminals (e.g. terminal 17 of the MCE-22/C-1 with terminal 17 of MCE-22/C-2, and so on).



### 5.1 - Software set-up

When using a twin system, using page 7.0 of the menu it is possible to set one of the 3 available twin operating modes:

#### Page 7.0



**2/1** **Alternate every 24 hours:** The 2 inverters alternate in performing the adjustment functions at intervals of 24 hours of operation. If one becomes faulty, the other one takes over the adjustment operations.

**2+1** **Simultaneous:** The 2 inverters both work at the same time, and at the same speed. This mode is useful when a flow rate that cannot be delivered by one single pump is required.

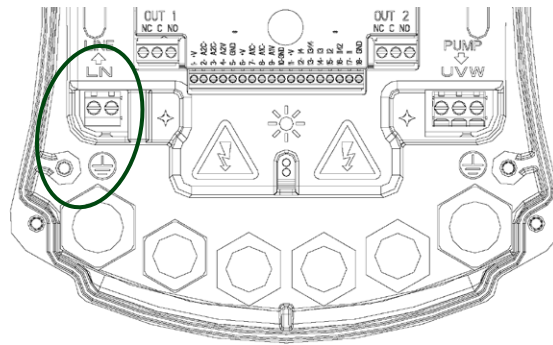
**2-1** **Main/Backup:** The adjustment is always performed by the same inverter (Main); the other one (Backup) only intervenes when the Main one becomes faulty.

If the twin communication cable is connected, the systems are automatically configured as individual, working in a full independent way from each other.

### 6 - Single-phase electric connection diagram (up to MCE-22/C)

#### 6.1 - Connection to the power input line

The connection between the single-phase power input line and the MCE-22/C must be completed using a 3-wire cable (phase + neutral + ground). The input terminals are marked with LINE LN and an arrow entering the terminals; see Figure 1



**Figure 1: Electric Connections**

The minimum section of the input and output cables must be such to ensure correct tightening of the cable glands, while the maximum section accepted by the terminals is 4 mm<sup>2</sup>

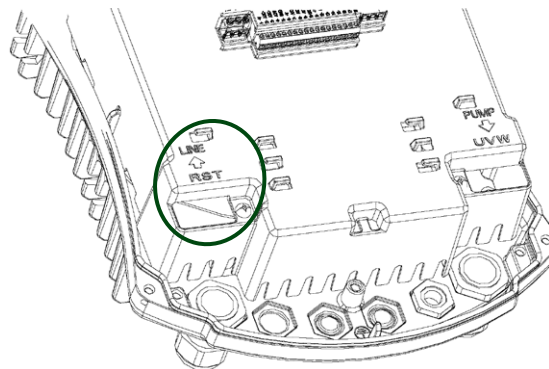
The current at the electric pump is generally specified in the motor data plates.

The maximum power input current at the MCE-22/C can be estimated in general as double in relation to the maximum current absorbed by the pump. Although the MCE-22/C is already fitted with internal protections, it is recommended that a protection thermal magnetic circuit breaker of appropriate size is also installed.

### 6.2 - Three-phase electric connection diagram (MCE-30/C and MCE-55/C)

#### 6.3 - Connection to the power input line

The connection between the three-phase power input line and the MCE-30/C and MCE-55/C must be completed using a 4-wire cable (3 phases + ground). The input terminals are marked with LINE RST and an arrow entering the terminals; see Figure 2



**Figure 2: Electric Connections**

The maximum section accepted by the input and output terminals is 6 mm<sup>2</sup>.

The external diameter of the input and output cables accepted by the cable glands for appropriate tightening goes from 11 mm<sup>2</sup> minimum, to 17 mm<sup>2</sup> maximum.

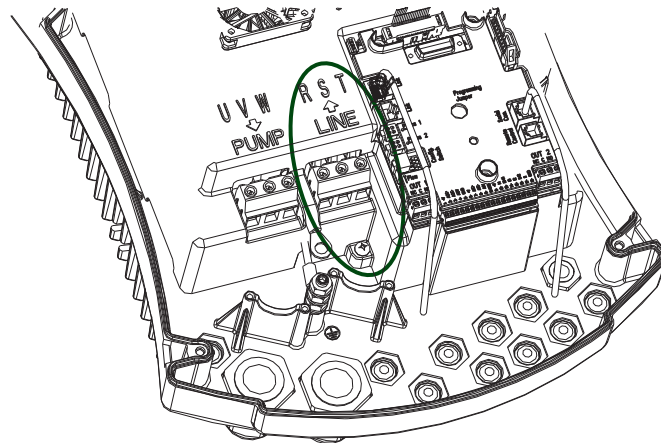
The current at the electric pump is generally specified in the motor data plates.

The MCE-55/C power input current can be generally assessed (with a safety margin) as 1/8 more than the current absorbed by the pump. Although the MCE-55/C is already fitted with internal protections, it is recommended that a protection thermal magnetic circuit breaker of appropriate size is also installed.

### 6.4 - Three-phase electric connection diagram (MCE-110/C and MCE150/C)

#### 6.5 - Connection to the power input line

The connection between the three-phase power input line and the MCE-110/C and MCE-150/C must be completed using a 4-wire cable (3 phases + ground). The input terminals are marked with LINE RST and an arrow entering the terminals; see Figure 3

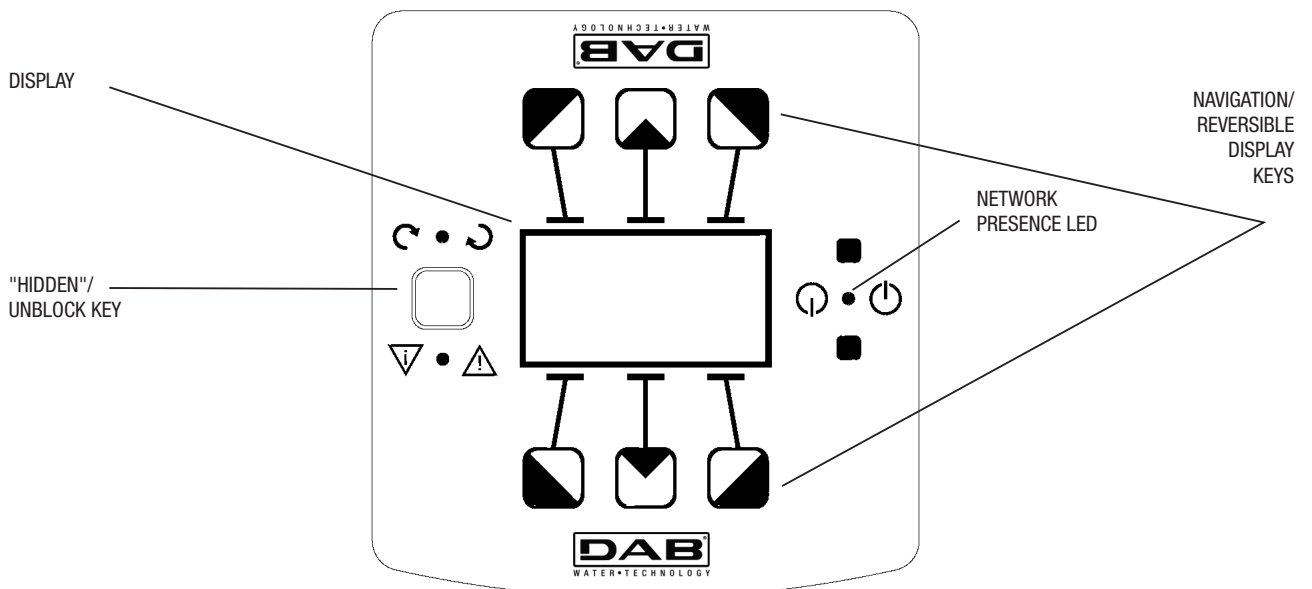


**Figure 3: Electric Connections**

The minimum section of the input and output cables is 6 mm<sup>2</sup> to ensure correct tightening of the cable glands, while the maximum section accepted by the terminals is 16 mm<sup>2</sup>.

The MCE-110/C and MCE-150/C power input current can be generally assessed (with a safety margin) as 1/8 more than the current absorbed by the pump. Although the MCE-110/C and MCE-150/C are already fitted with internal protections, it is recommended that a protection thermal magnetic circuit breaker of appropriate size is also installed.

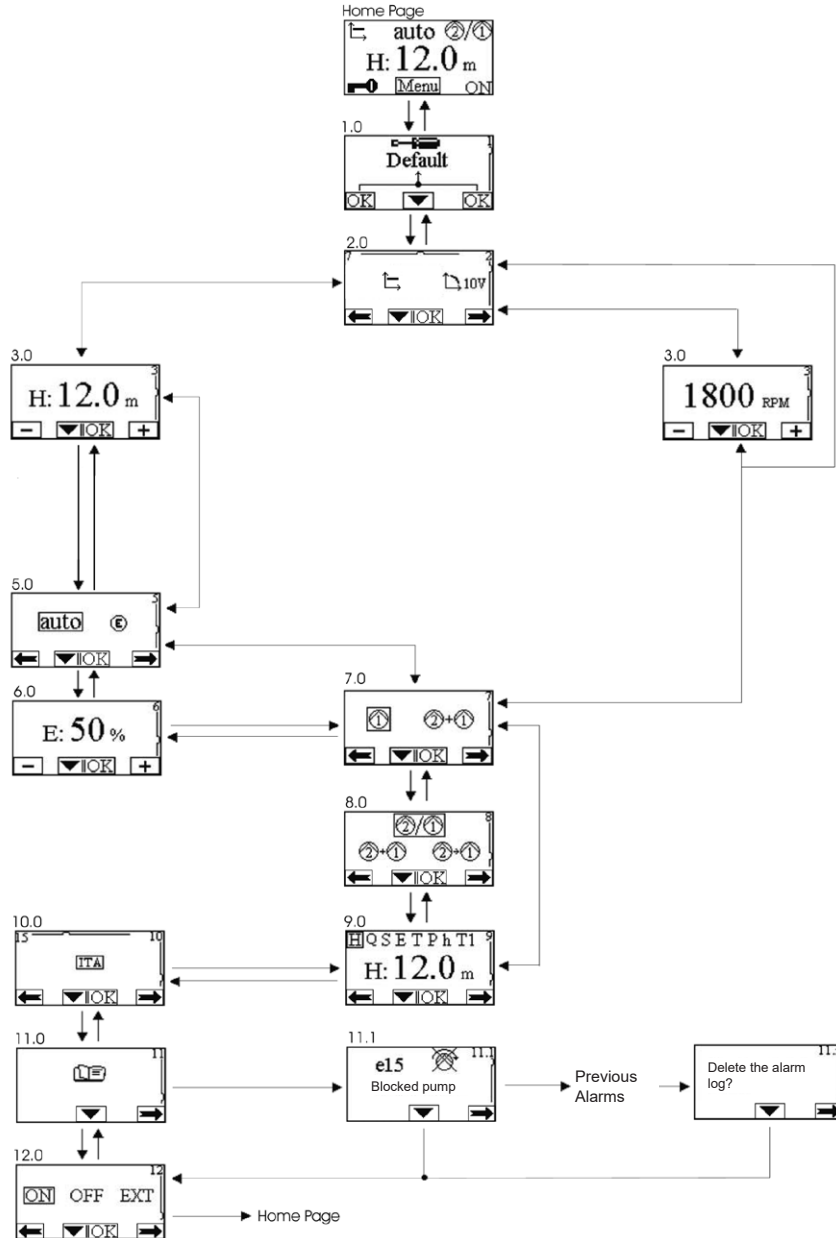
### 7 - Description of the control panel





### 8 - MCE/C MENU CONFIGURATIONS




The settings are completed by passing from one page to the next in the configuration menu of the circulator.








### DESCRIPTION OF DISPLAYED MEASUREMENTS

Symbol	Description
H S E P h	Parameter display
H	Head in metres
S	Speed in revolutions/minute (rpm)
E	0-10 V analogue input
P	Power in kW
h	Hours of operation


### TYPES OF REGULATIONS

Symbol	Description
	$\Delta p$ -c regulation (constant pressure)
	Servomotor regulation with speed set on the display.
	Servomotor regulation with speed set by remote 0-10 V signal


### CIRCULATOR STATUS

Symbol	Description
	Single circulator or circulator no. 1
	Circulator no. 2
	Alternate twin circulators
	Main/backup twin circulators (switch every 24 hours)
	Simultaneous twin circulators
ON	Circulator on
OFF	Circulator off
EXT	Circulator controlled by remote signal (ref. terminals 1-2)












### OPERATING MODE

Symbol	Description
auto	Auto mode
	Economy mode

### 9 - Factory settings

Parameter	Value
Mode of regulation	Parameter display
Hs (Differential Pressure Set-point)	50 % of the maximum pump head (see the sensitive inverter parameters set by the factory)
Fs (Frequency Set-point)	90 % of the nominal frequency of the pump
Operating modes	auto
Set-point reduction percentage	50 %
Twin operating modes	 = Alternate every 24 hours
Pump start command	EXT (from remote signal on input I1)

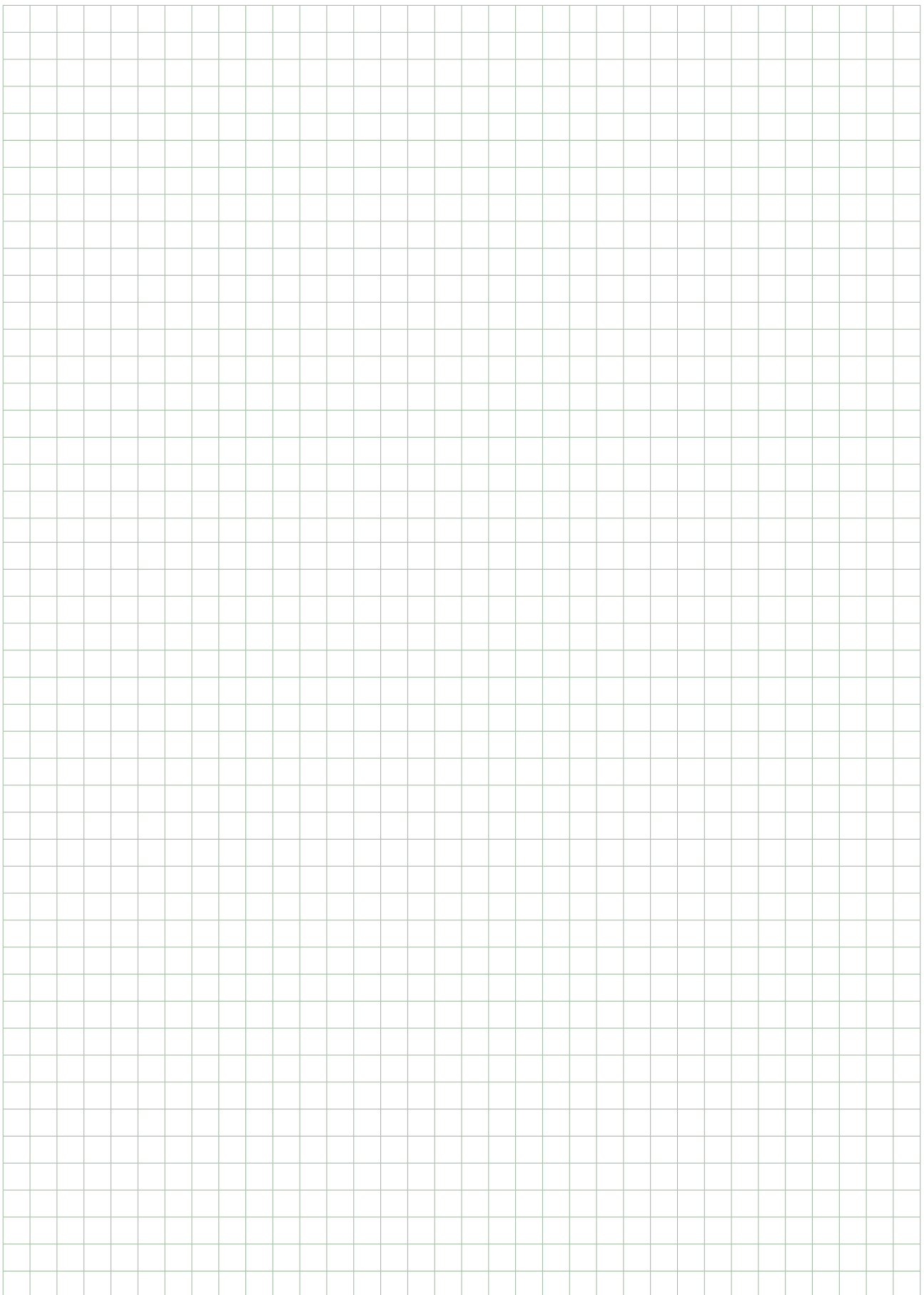
### 10 - Types of alarms and resolution)

Alarm Code	Alarm Symbol	Alarm Description
e0 - e16; e21		Internal Error
e17 - e19		Short Circuit
e20		Voltage Error
e22 - e30		Voltage Error
e31		Protocol Error
e32 - e35		Overtemperature
e37		Low voltage
e38		High voltage
e39 - e40		Current overload
e43; e44; e45; e54		Pressure Sensor
e46		Pump Disconnected

### ERROR AND RESET CONDITIONS

ERROR CONDITION		
Display indication	Description	Reset
E0 - E16	Internal error	<ul style="list-style-type: none"> <li>- Remove voltage to the MCE</li> <li>- Wait 5 minutes and then reconnect the MCE.</li> <li>- If the error persists, replace the MCE.</li> </ul>
E37	Low network voltage (LP)	<p>Remove voltage to the MCE</p> <ul style="list-style-type: none"> <li>- Wait 5 minutes and then reconnect the MCE.</li> <li>- Check that the network voltage is correct. If necessary reset it to the plate details.</li> </ul>
E38	High network voltage (HP)	<ul style="list-style-type: none"> <li>- Remove voltage to the MCE</li> <li>- Wait 5 minutes and then reconnect the MCE.</li> <li>- Check that the network voltage is correct. If necessary reset it to the plate details.</li> </ul>
E32-E35	Critical overheating of electronic parts	<ul style="list-style-type: none"> <li>- Remove voltage to the MCE</li> <li>- After waiting 5 minutes, remove the MCE from the pump and clean the cover of the motor.</li> <li>- Clean the dissipator.</li> </ul>
E43-E45; E54	No sensor signal	<ul style="list-style-type: none"> <li>- Check the connection of the sensor.</li> <li>- Replace the sensor, if faulty.</li> </ul>
E39-E40	Current overload protection	<ul style="list-style-type: none"> <li>- Check that the circulator is turning freely.</li> <li>- Check that the antifreeze added does not exceed the maximum amount of 30 %.</li> </ul>
E21-E30	Voltage Error	<ul style="list-style-type: none"> <li>- Remove voltage to the MCE.</li> <li>- Wait 5 minutes and then reconnect the MCE.</li> <li>- Check that the network voltage is correct. If necessary reset it to the plate details.</li> </ul>
E31	Twin communication not found	<ul style="list-style-type: none"> <li>- Check that the communication cable is not damaged.</li> <li>- Check that both circulators can be powered.</li> </ul>

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# NOTES

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A large grid of graph paper, consisting of approximately 28 columns and 42 rows of small squares, intended for taking notes.





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