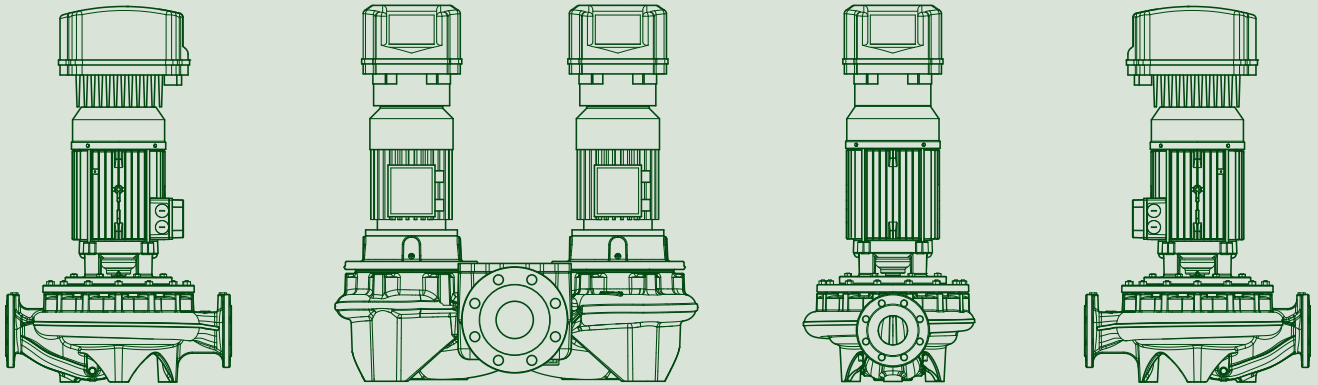


ELECTRONIC IN-LINE PUMPS



TECHNICAL CATALOGUE



* The list of IONet partners is valid at the time of issue of this certificate. Updated information is available under www.ionet-certification.com

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ALME / ALPE

ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS



TECHNICAL DATA

Operating range:

from 1 to 8,4 m³/h with head up to 21 metres.

Liquid temperature range: from -15 °C to +120 °C.

Pumped liquid: clean, free of solids and abrasives, non-viscous, non-aggressive, non-crystallised and chemically neutral, with properties similar to water. Maximum glycol content 30% (for other glycol percentages contact Technical Support).

Installation: fixed, horizontal position.

Maximum ambient temperature: +40 °C.

Maximum operating pressure: 10 bar (1000 kPa).

Protection class: IP 55.

Insulation class: F.

Standard voltage: single-phase 220-240 V, 50/60 Hz.

APPLICATIONS

Hot or cold water circulation pump with in-line ports, suitable for installation directly on the pipework of on civil and industrial heating, air conditioning, refrigeration, and sanitary water plants. Particularly versatile thanks to the use of the MCE/C inverter, offering performance features capable of automatically adapting to the different needs of the system, keeping a consistent differential pressure.

CONSTRUCTION FEATURES OF THE PUMP

Pump body and motor support in cast iron.

2" M-GAS suction and delivery ports. Technopolymer impeller. Carbon/ceramic mechanical seal.

Construction features of the motor

External ventilation cooling, closed, asynchronous type, with four poles for the ALM version, and two poles for the ALP version.

Rotor running on permanently lubricated ball bearings, oversized to ensure low noise and durability.

Construction according to CEI 2-3.

CONSTRUCTION FEATURES OF THE ELECTRONICS: MCE/C INVERTER

MCE/C inverters are the latest technological achievement of the DAB inverter range. They represent a new generation of inverters for use with circulation pumps, and set themselves apart due to ease of use, power, simplicity of installation and management. MCE/C inverters have been designed for managing circulation pumps. By allowing a simple adjustment of the differential pressure, they give the possibility of adjusting the performance of the circulation pump to the actual system requirements. They are fitted on the fan cover of the motor. This makes the installation of the pump with MCE/C particularly easy and quick. The protection class of the MCE/C is IP55. The ease of programming is guaranteed by the use of a simple and intuitive interface, similar to Dialogue electronic circulators, and a graphic display. MCE/C inverters have a double micro-processor construction that guarantees maximum efficiency and reliability.

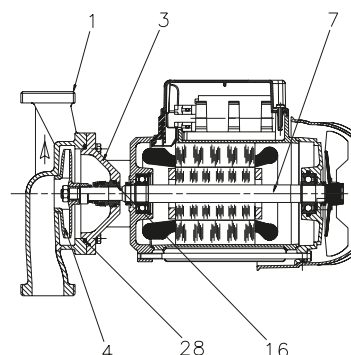
A reliable and sturdy construction, together with a modern and innovative design, complete the product, also in terms of aesthetic value. MCE/C inverters protect the motor and the pump, and increase their life, by eliminating hammering effects and making the pump rotate at the minimum number of rotations capable of meeting the requirements of the user. In addition, electric pumps controlled by the MCE/C inverter are environmentally friendly. In fact, by ensuring that the pump only uses the power that is strictly necessary for meeting the needs of the users, electricity consumption is strongly reduced when compared with fixed speed pumps. It is possible to create twin units by using the appropriate cable for the connection of MCE/C inverters.

ALME / ALPE

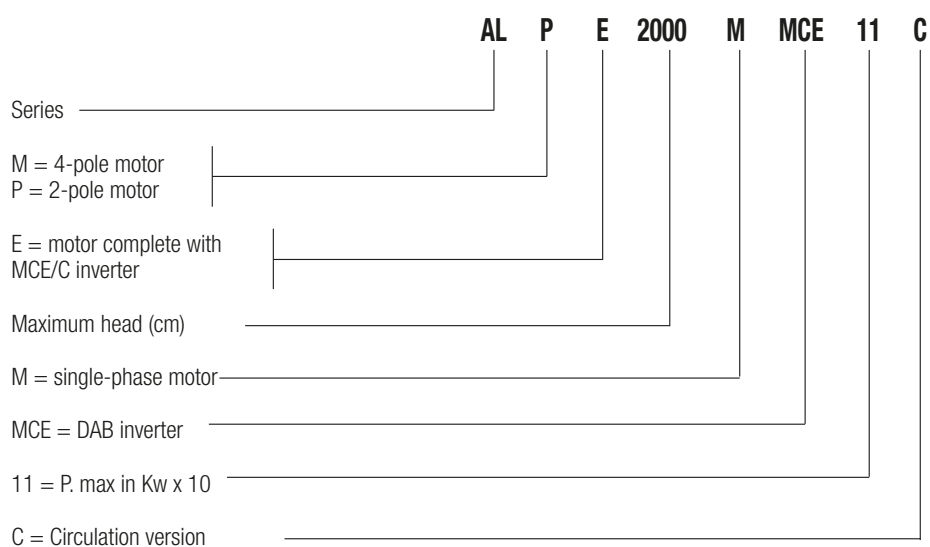
ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

MATERIALS

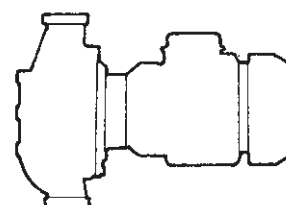
N.	PARTS	MATERIALS
1	PUMP BODY	CAST IRON 250 UNI ISO 185
3	SUPPORT	CAST IRON 250 UNI ISO 185
4	IMPELLER	TECHNOPOLYMER
7	SHAFT WITH ROTOR	AISI 303 STAINLESS STEEL X10 CrNiS 1809 UNI 6900/71
16	MECHANICAL SEAL	CARBON / CERAMIC
28	OR RING	EPDM RUBBER



– Legend: (example)



Installation: fixed, horizontal position.

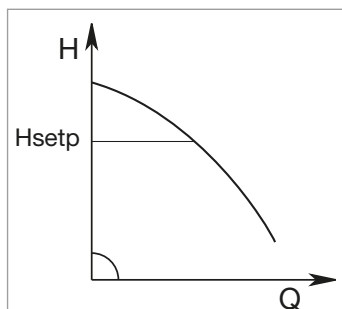


MCE/C INVERTER**MODES OF OPERATION**

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.

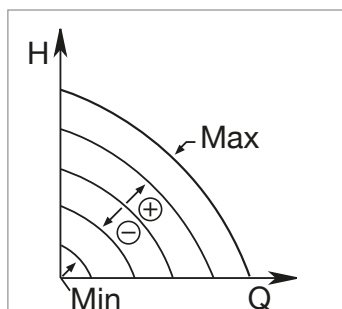
1 - ΔP -c constant differential pressure adjustment mode

The ΔP -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.

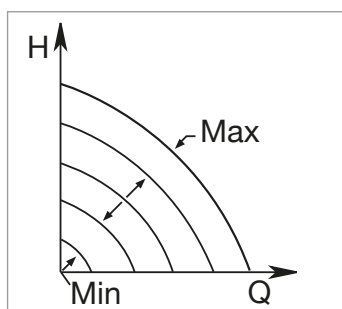


This adjustment is particularly indicated for the following systems:

- 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**

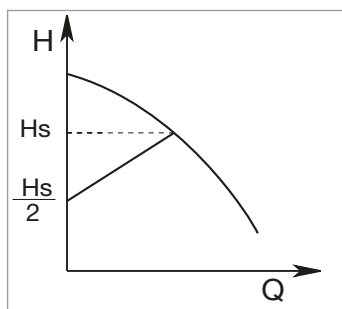
The rotation speed is kept at a constant number of revolutions. This rotation speed can be set between a minimum value and the nominal frequency of the circulation pump (e.g. between 15 Hz and 50 Hz). This mode can be set using the control panel on the MCE cover.

**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 - ΔP -v * proportional differential pressure adjustment mode**

With ΔP -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.

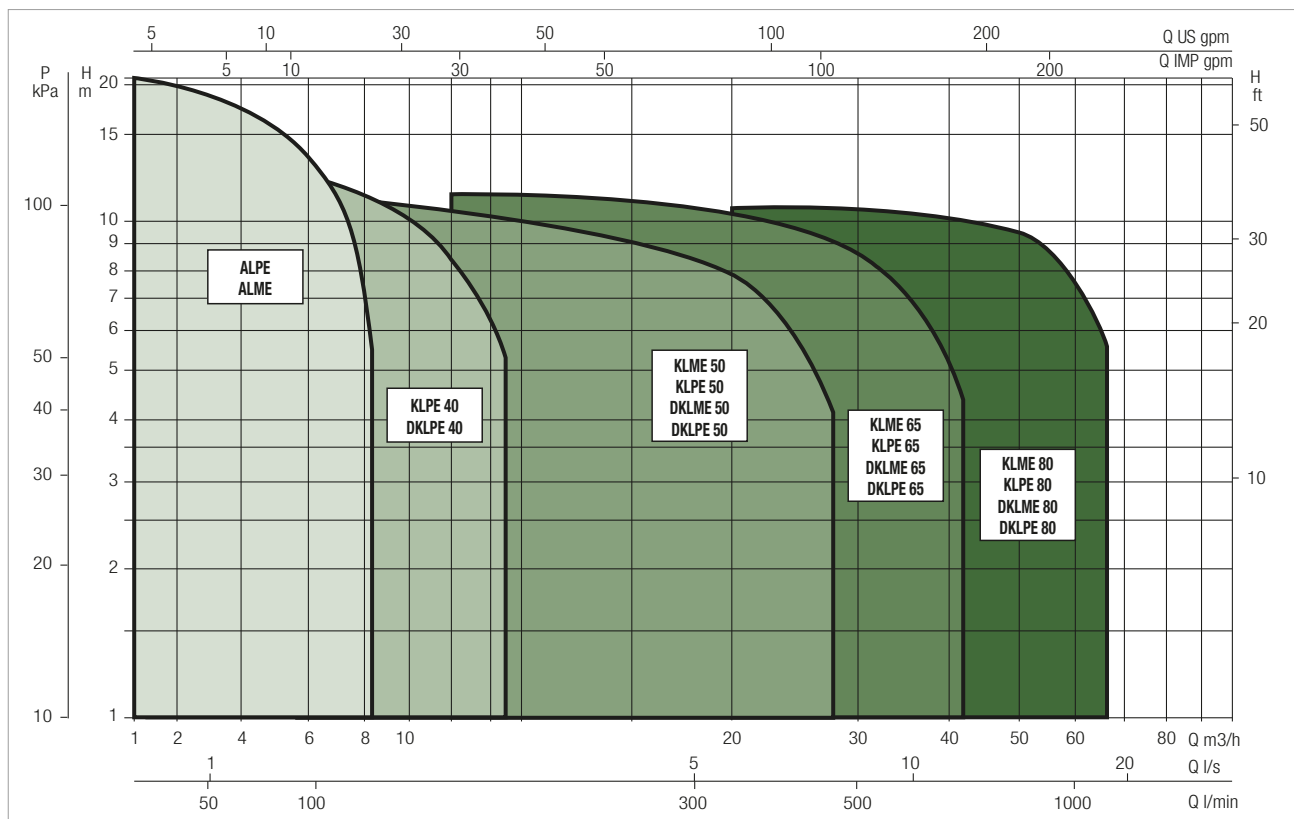
ELECTRIC IN-LINE PUMPS

ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

PERFORMANCE RANGE

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

GRAPHIC SELECTION TABLE

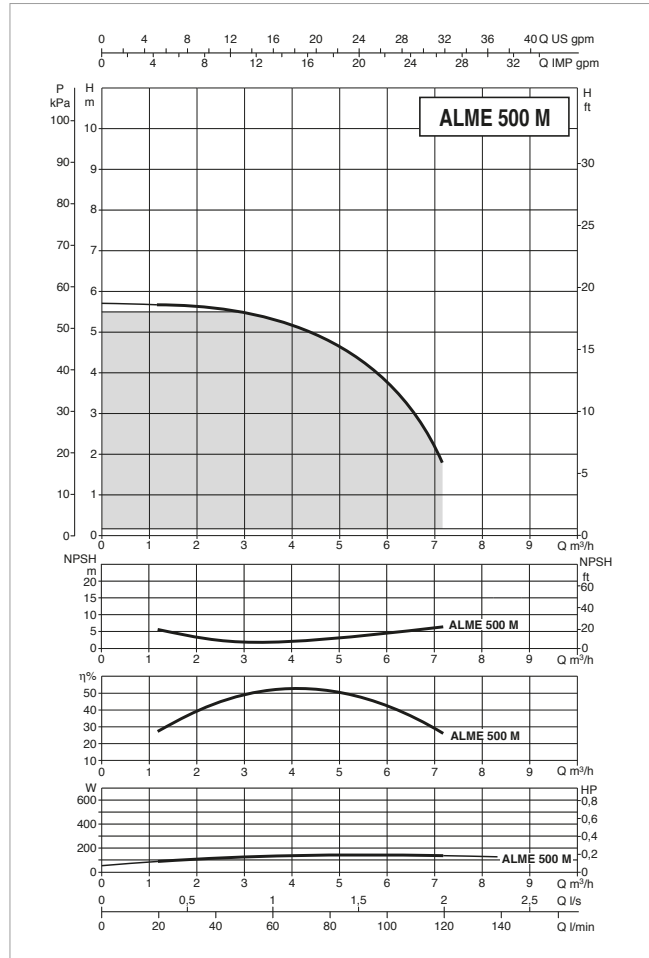
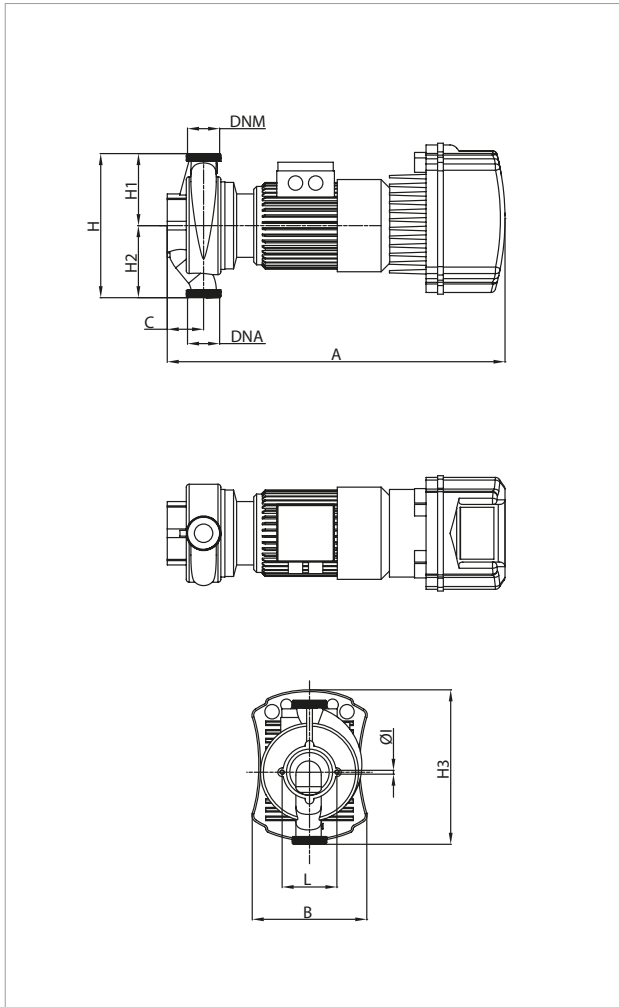


SELECTION TABLE - ALME / ALPE

MODEL	Q=m³/h	0	1,2	2,4	3,6	4,8	6	7,2	8,4
	Q=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 - IN-LINE ELECTRIC PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, THREADED, WITH MCE/C INVERTER

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.

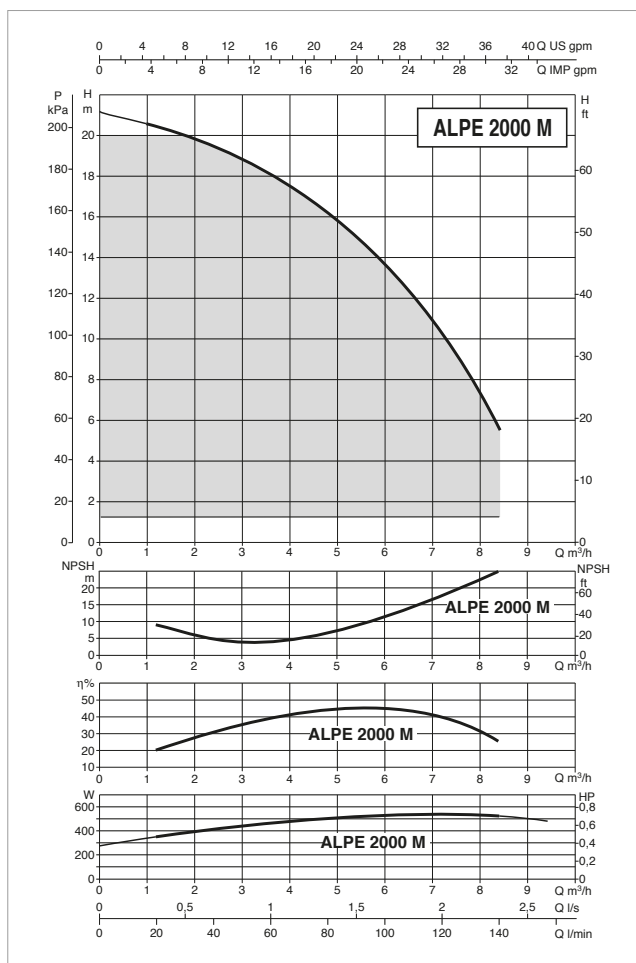
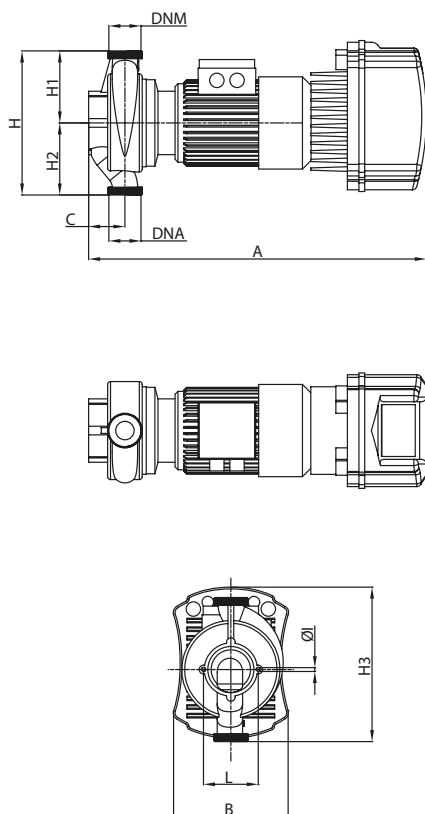
MODEL	ELECTRICAL DATA						
	POWER INPUT 50 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
ALME 500 M MCE11/C *	1x220-240 V ~	4 POLES	1425	0,20	0,25	0,33	3,20

* Three-phase version on request

MODEL	A	B	C	L	IØ	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 IN-LINE ELECTRIC PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, THREADED WITH MCE/C INVERTER

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 50 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
ALPE 2000 M MCE11/C *	1x220-240 V ~	2 POLES	2870	0,69	0,55	0,75	6,36

* Three-phase version on request

MODEL	A	B	C	L	IØ	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

KLME / KLPE / DKLME / DKLPE

ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS



TECHNICAL DATA

Operating range:

from 2 to 67 m³/h with head up to 13,7 metres.

Pumped liquid: clean, free of solids and abrasives, non-viscous, non-aggressive, non-crystallised and chemically neutral, with properties similar to water. Maximum glycol content 30% (for other glycol percentages contact Technical Support).

Pumped liquid temperature range: from -15 °C to +120°C.

Maximum ambient temperature: +40°C

Maximum operating pressure: 10 bar (1000 kPa).

Standard flanges:

DN 40, DN 50, DN 65, DN 80 - PN 6/PN 10 (4 holes)

Flanges on request: DN 80 - PN 16 (8 holes)

Counter flanges on request: threaded DN 40, DN 50, DN 65 - PN 6

with welded collar DN 40, DN 50, DN 65, DN 80 - PN 6

with welded collar DN 40, DN 50, DN 65 - PN 10/PN 16 (4 holes)

with welded collar DN 80 - PN 10/PN 16 (8 holes)

Protection class: IP 55

Insulation class: F

Standard single-phase voltage: 1x220-240 V / 50-60 Hz

Special version on request:

three-phase 3x400 V / 50 Hz or three-phase 3x460 V / 60 Hz

Standard three-phase voltage: 3x400 V / 50 Hz

Special version on request: 3x460 V / 60 Hz

APPLICATIONS

Hot or cold water circulation pump with in-line ports, suitable for installation directly on the pipework of on civil and industrial heating, air conditioning, refrigeration, and sanitary water plants. Particularly versatile thanks to the use of the MCE/C inverter, offering performance features capable of automatically adapting to the different needs of the system, keeping a consistent differential pressure.

CONSTRUCTION FEATURES OF THE PUMP

Pump body and motor support in cast iron.

PN 10 flanged suction and delivery ports with threaded holes for control manometers. To make replacement in existing systems easier, the pump can accept PN 6 counter flanges.

Technopolymer impeller.

Carbon/ceramic mechanical seal.

The pumps are available both in the single (KLME-KLPE) and in the twin (DKLME-DKLPE) versions.

For the single version a built in clapet valve in the delivery port is also included, to avoid water recirculation when the unit is idle. A blind flange is also supplied as a standard, to be used during maintenance of one of the two motors.

The twin version gives the possibility of alternating the operation of the pumps when a backup unit is required, or to have the two pumps operating simultaneously.

CONSTRUCTION FEATURES OF THE MOTOR

External ventilation cooling, closed, asynchronous type, with four poles for the KLME and DKLME versions, and two poles for the KLPE and DKLPE versions.

Rotor running on permanently lubricated ball bearings, oversized to ensure low noise and durability.

Built-in thermo-amperometric protection.

Construction according to CEI 2-3.

CONSTRUCTION FEATURES OF THE ELECTRONICS: MCE/C INVERTER

MCE/C inverters are the latest technological achievement of the DAB inverter range. They represent a new generation of inverters for use with circulation pumps, and set themselves apart due to ease of use, power, simplicity of installation and management. MCE/C inverters have been designed for managing circulation pumps. By allowing a simple adjustment of the differential pressure, they give the possibility of adjusting the performance of the circulation pump to the actual system requirements. They are fitted on the fan cover of the motor. This makes the installation of the pump with MCE/C particularly easy and quick. The protection class of the MCE/C is IP55. The ease of programming is guaranteed by the use of a simple and intuitive interface, similar to Dialogue electronic circulators, and a graphic display. MCE/C inverters have a double micro-processor construction that guarantees maximum efficiency and reliability.

A reliable and sturdy construction, together with a modern and innovative design, complete the product, also in terms of aesthetic value. MCE/C inverters protect the motor and the pump, and increase their life, by eliminating hammering effects and making the pump rotate at the minimum number of rotations capable of meeting the requirements of the user. In addition, electric pumps controlled by the MCE/C inverter are environmentally friendly. In fact, by ensuring that the pump only uses the power that is strictly necessary for meeting the needs of the users, electricity consumption is strongly reduced when compared with fixed speed pumps. It is possible to create twin units by using the appropriate cable for the connection of MCE/C inverters.

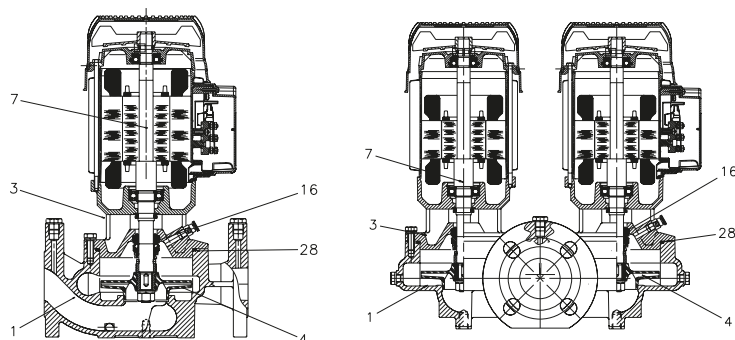
KLME / KLPE / DKLME / DKLPE

ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

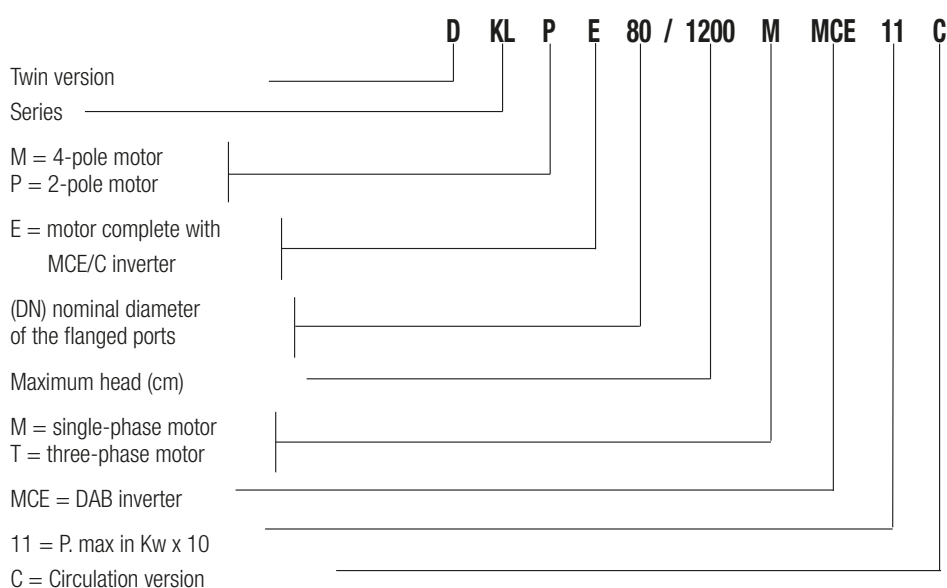
MATERIALS

N.	PARTS*	MATERIALS
1	PUMP BODY	CAST IRON 250 UNI ISO 185
3	SUPPORT	CAST IRON 250 UNI ISO 185
4	IMPELLER	TECHNOPOLYMER B
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

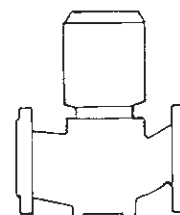
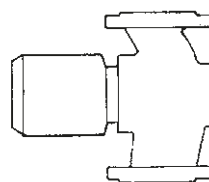


– Legend: (example)

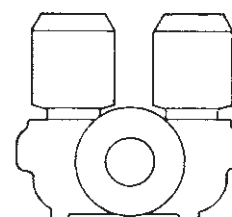
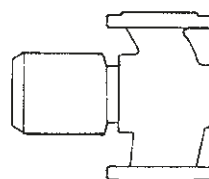
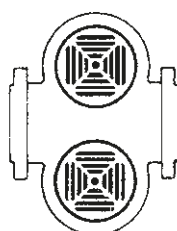
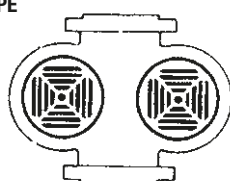


Installation: horizontal or vertical position, provided that the motor is always above the pump.

KLME / KLPE



DKLME / DKLPE



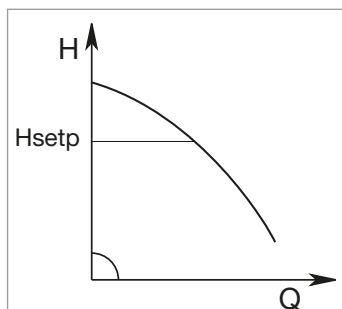
MCE/C INVERTER

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.

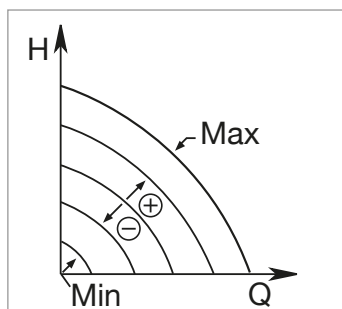
1 - ΔP -c constant differential pressure adjustment mode

The ΔP -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:

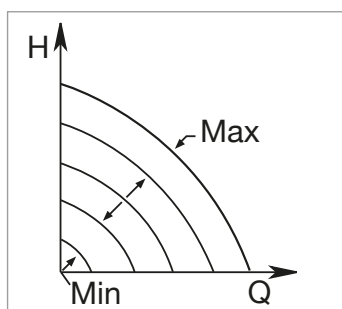
- a. two-pipe heating systems with thermostat valves
- b. underfloor heating systems with thermostat valves
- c. single-pipe heating systems with thermostat valves and calibration valves
- d. systems with primary circuit pumps



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.

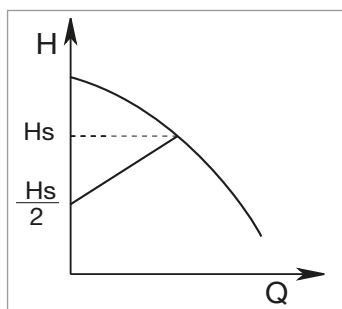


2.2 - Adjustment of the constant curve with external analogue signal

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 - ΔP -v * proportional differential pressure adjustment mode

With ΔP -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.

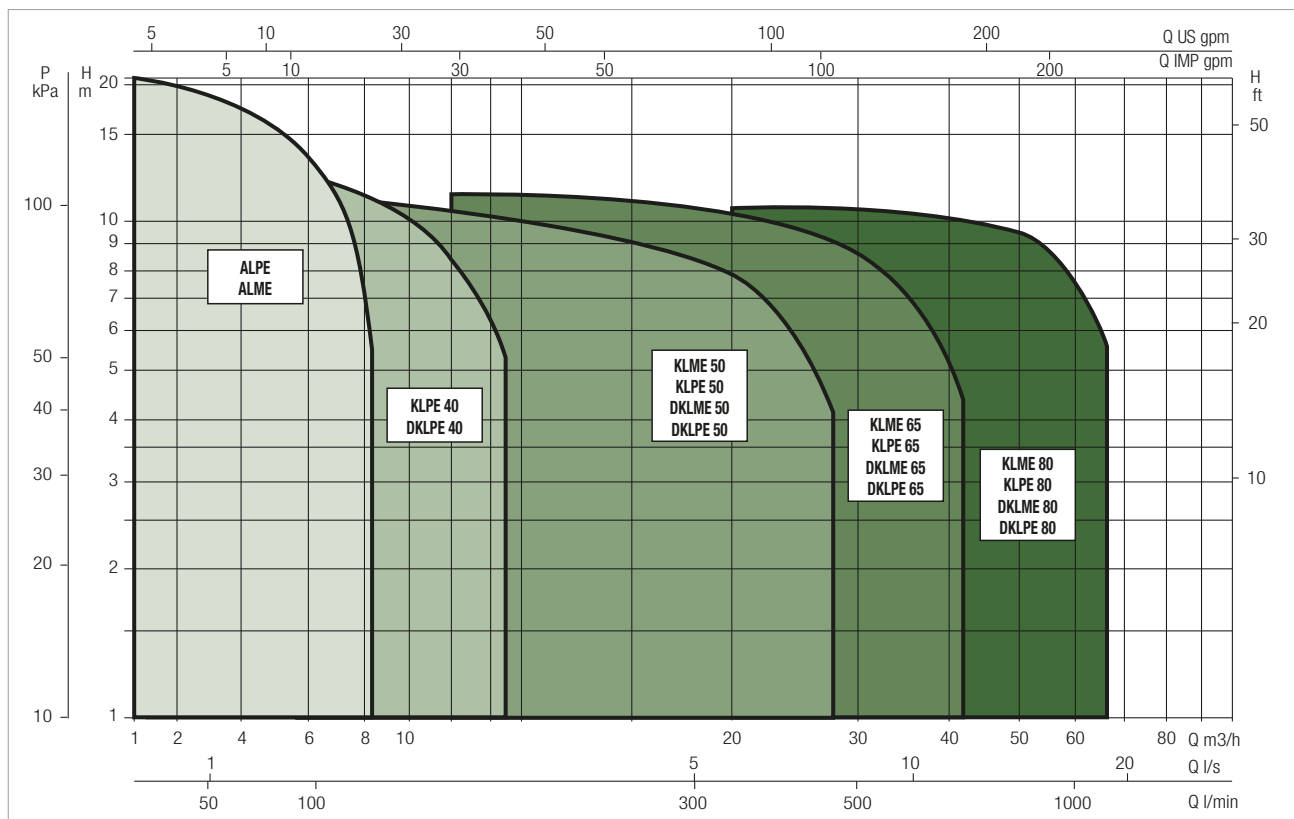
ELECTRIC IN-LINE PUMPS

ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

PERFORMANCE RANGE

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

GRAPHIC SELECTION TABLE

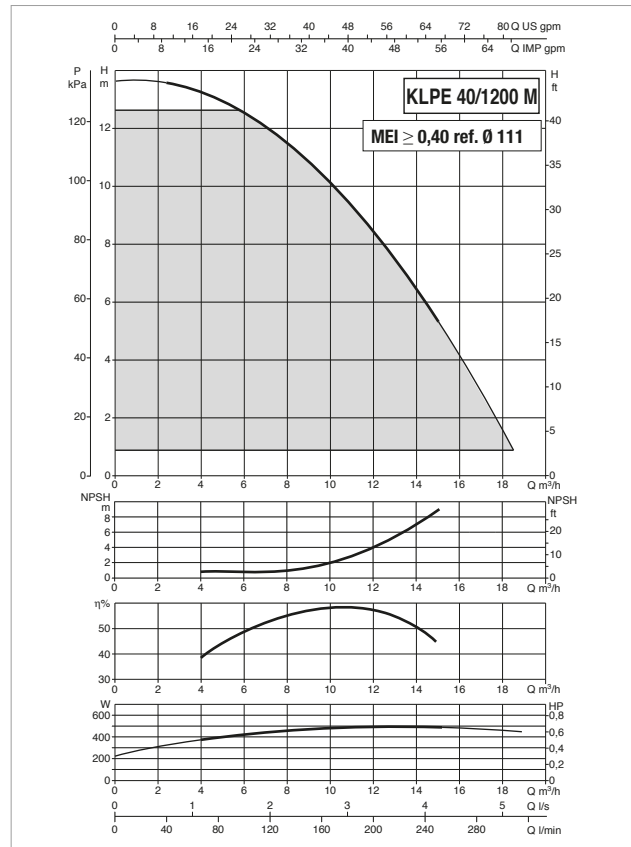
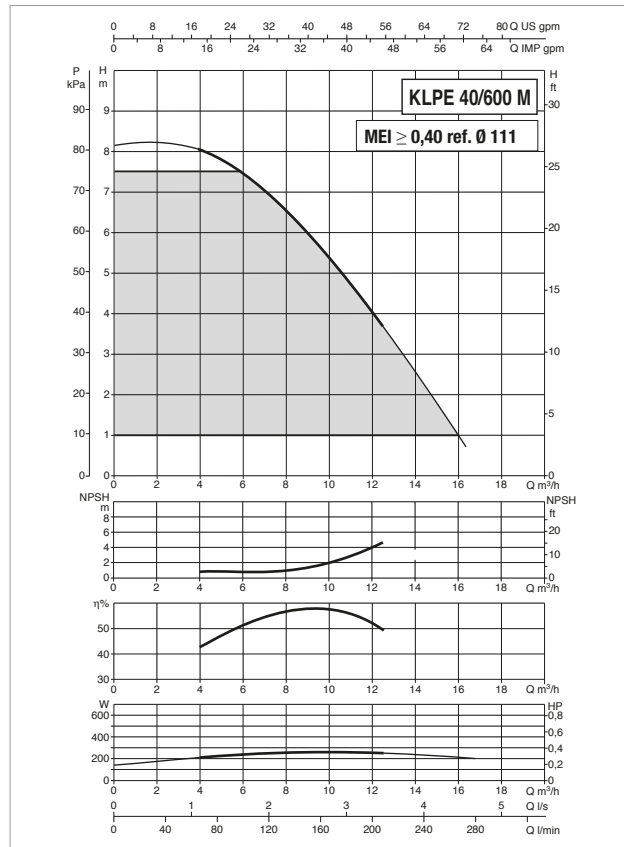


SELECTION TABLE - KLME / KLPE - DKLME / DKLPE

MODEL	Q=m³/h	0	4,8	6	7,2	8,4	9,6	12	18	30	36	48
	Q=l/min	0	80	100	120	140	160	200	300	500	600	800
KLPE - DKLPE 40- 600 M MCE11/C	H (m)	8,2	7,8	7,4	6,9	6,3	5,7	4				
KLPE - DKLPE 40-1200 M MCE11/C		13,7	13,2	12,6	11,9	11,2	10,4	8,4				
KLME - DKLPE 50-600 M MCE11/C		5,4	5,2	4,9	4,7	4,5	4,3	3,8	2			
KLPE - DKLPE 50-1200 M MCE11/C		12			11,8	11,6	11	10,5	8,6			
KLME - DKLPE 65-600 M MCE11/C		5,5				5,3	5	4,7	3,8			
KLPE - DKLPE 65-1200 M MCE11/C		12						11,6	11	8,8	6,7	
KLPE - DKLPE 65-1200 T MCE30/C		12						11,6	11	8,8	6,7	
KLME - DKLPE 80-600 M MCE11/C		5,7							5,7	5	4,3	2,5
KLPE - DKLPE 80-1200 M MCE15/C		11,8								11,5	11	9,7
KLPE - DKLPE 80-1200 T MCE30/C		11,8								11,5	11	9,7

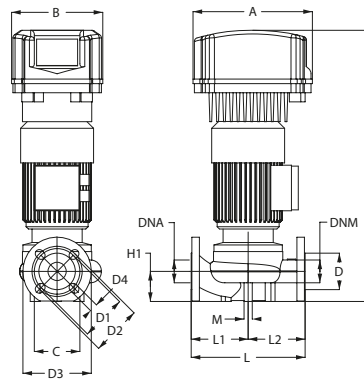
KLPE 40 - IN-LINE ELECTRIC PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -15 °C to +120 °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.



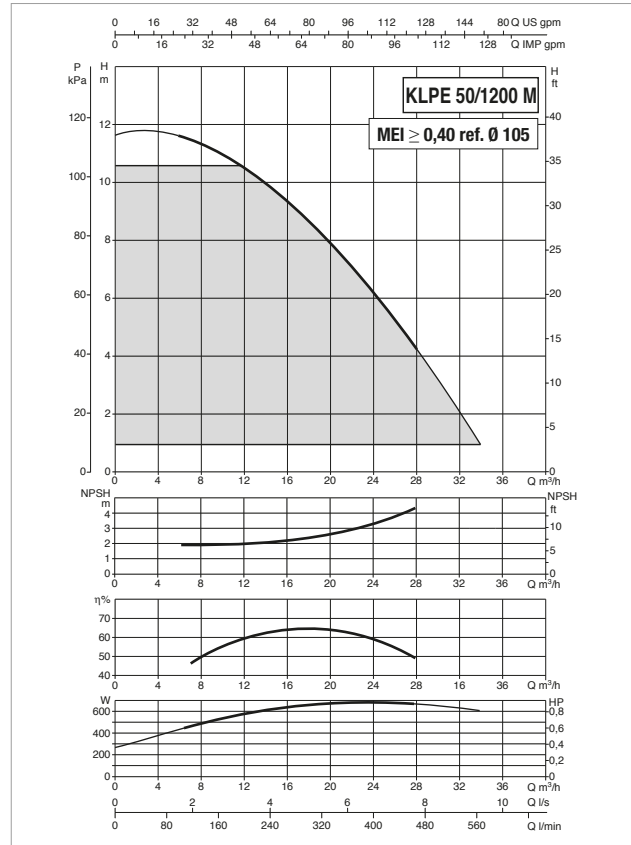
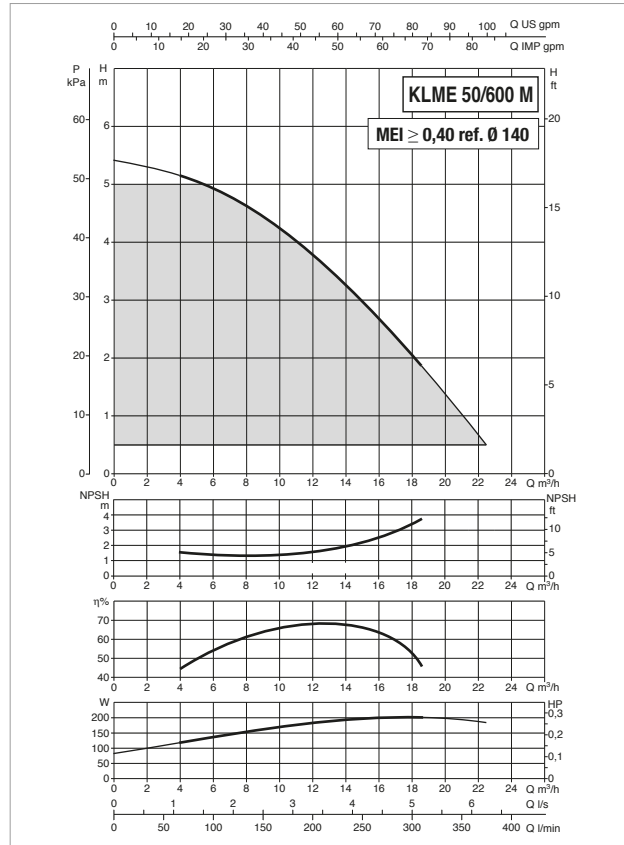
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n.r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
KLPE 40- 600 M MCE11/C *	1x220-240 V ~	2 poles	2950	0,37	0,37	0,50	4,3
KLPE 40-1200 M MCE11/C *		2 poles	2890	0,63	0,55	0,75	6,0

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

MODEL	A	B	B1	B2	C	D	D1	D2	D3	D4	H	H1	I	L	L1	L2	M	DNA GAS	DNM GAS	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																				L/A	L/B	H		
KLPE 40- 600 M MCE11/C	262	200	-	-	100	80	100	110	150	4 HOLES 18x23	603	66	-	250	125	125	2 HOLES M10	40	40	500	270	660	0,09	26
KLPE 40-1200 M MCE11/C	262	200	-	-	100	80	100	110	150	4 HOLES 18x23	603	66	-	250	125	125	2 HOLES M10	40	40	500	270	660	0,09	26

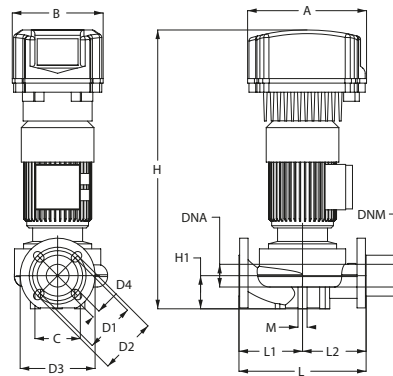
KLME / KLPE 50 - IN-LINE ELECTRIC PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -15 °C to +120 °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.



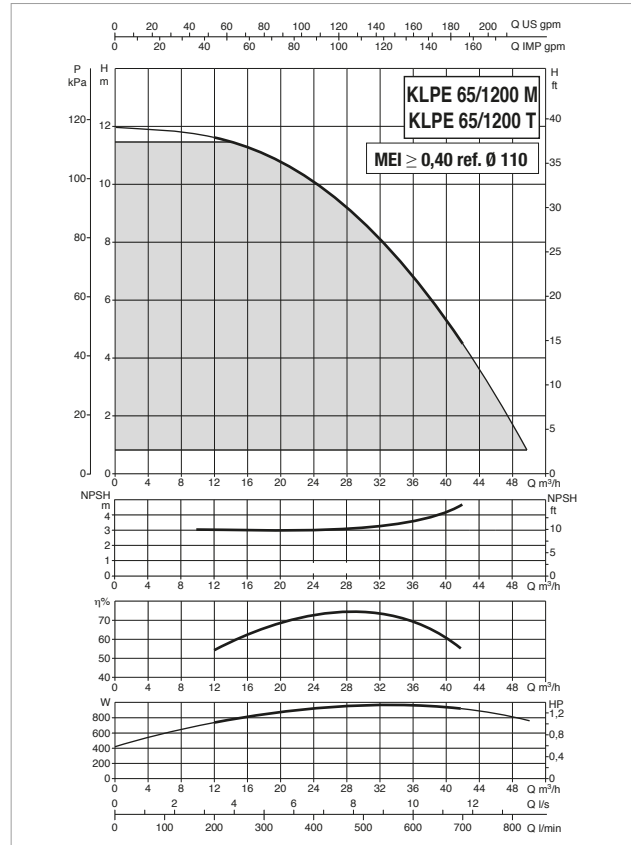
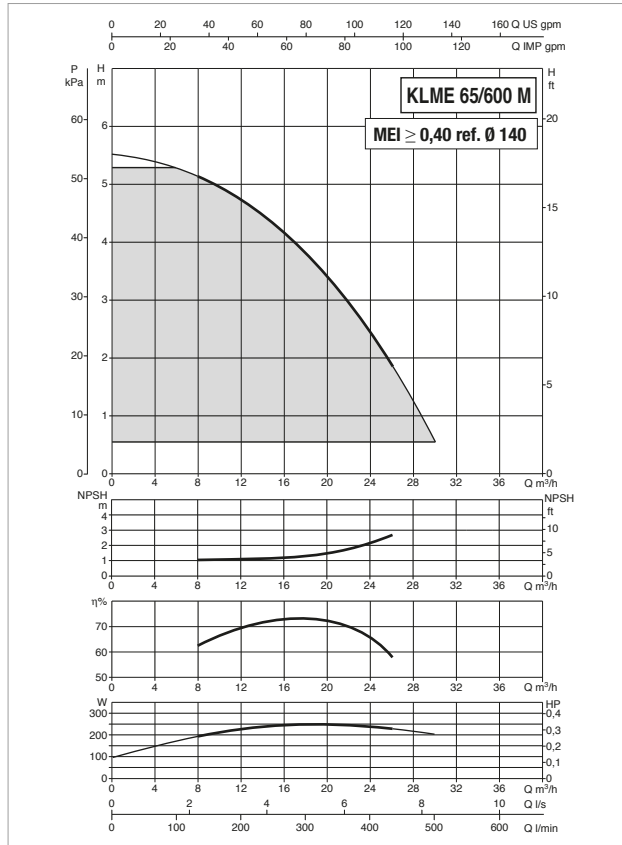
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n.r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
KLME 50-600 M MCE11/C *	1x220-240 V ~	4 poles	1340	0,34	0,25	0,33	4,1
KLPE 50-1200 M MCE11/C *		2 poles	2890	0,90	0,75	1,00	7,7

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

MODEL	A	B	B1	B2	C	D	D1	D2	D3	D4	H	H1	I	L	L1	L2	M	DNA GAS	DNM GAS	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																				L/A	L/B	H		
KLME 50-600 M MCE11/C	262	200	-	-	100	90	110	125	165	4 HOLES 18x23	622	73	-	280	140	140	2 HOLES M10	50	50	500	270	660	0,09	31
KLPE 50-1200 M MCE11/C	262	200	-	-	100	90	110	125	165		622	73	-	280	140	140		M10	50	50	500	270	660	0,09

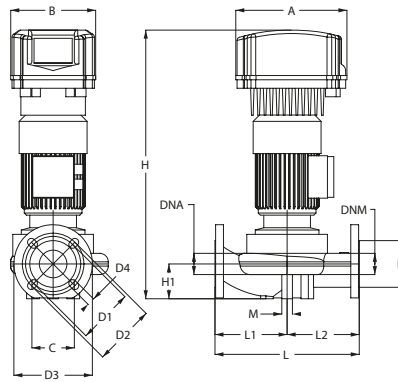
KLME / KLPE 65 - IN-LINE ELECTRIC PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -15 °C to +120 °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.



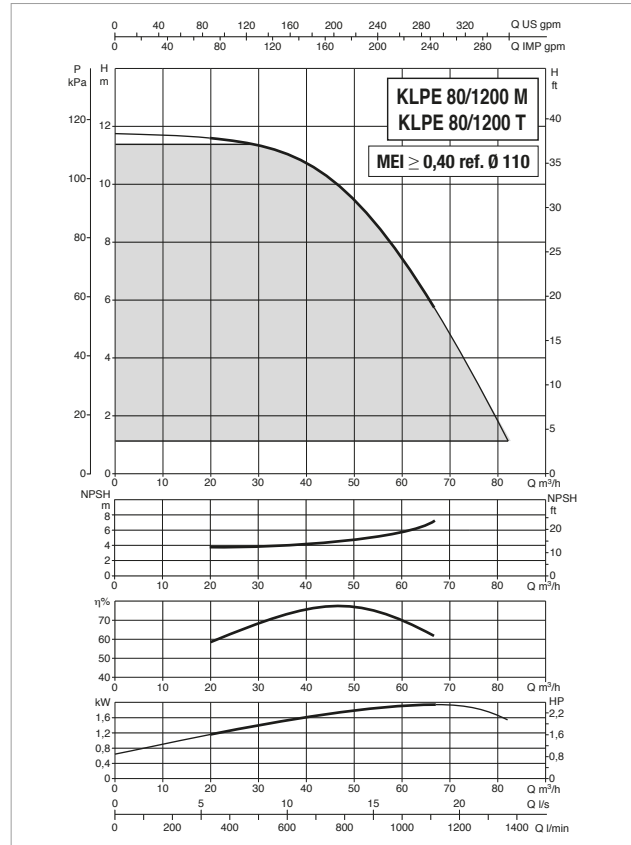
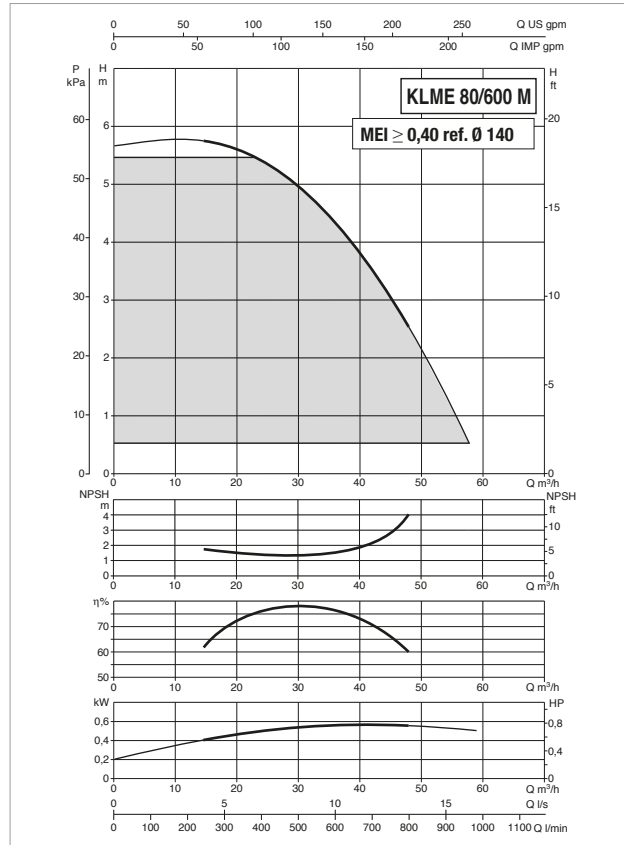
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n.r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
KLME 65-600 M MCE11/C *	1x220-240 V ~	4 poles	1400	0,38	0,37	0,50	4,3
KLPE 65-1200 M MCE11/C *		2 poles	2880	1,37	1,10	1,50	10,7
KLPE 65-1200 T MCE30/C *	3x400 V ~	2 poles	2880	1,37	1,10	1,50	3,9

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

MODEL	A	B	B1	B2	C	D	D1	D2	D3	D4	H	H1	I	L	L1	L2	M	DNA GAS	DNM GAS	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																				L/A	L/B	H		
KLME 65-600 M MCE11/C	262	200	-	-	100	110	130	145	185	4 HOLES 18x23	641	82	-	340	170	170	2 HOLES M12	65	65	500	270	660	0,09	37
KLPE 65-1200 M MCE11/C	262	200	-	-	100	110	130	145	185		641	82	-	340	170	170		65	65	500	270	660	0,09	43
KLPE 65-1200 T MCE30/C	353	286	-	-	100	110	130	145	185		639	82	-	340	170	170		65	65	680	430	825	0,24	58,9

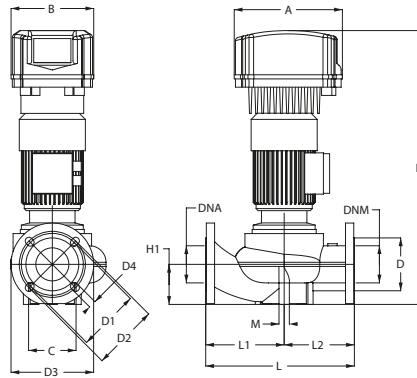
KLME / KLPE 80 - IN-LINE ELECTRIC PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -15 °C to +120 °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.



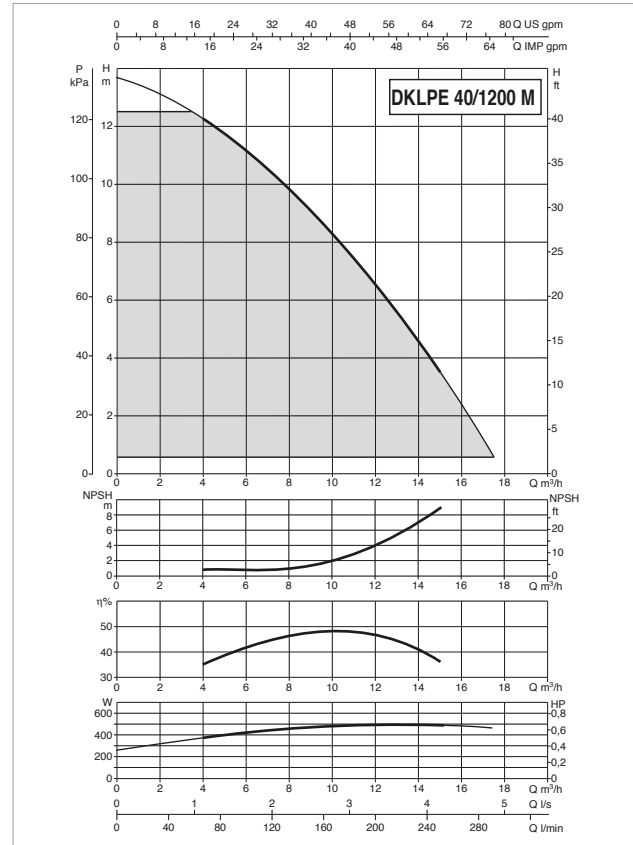
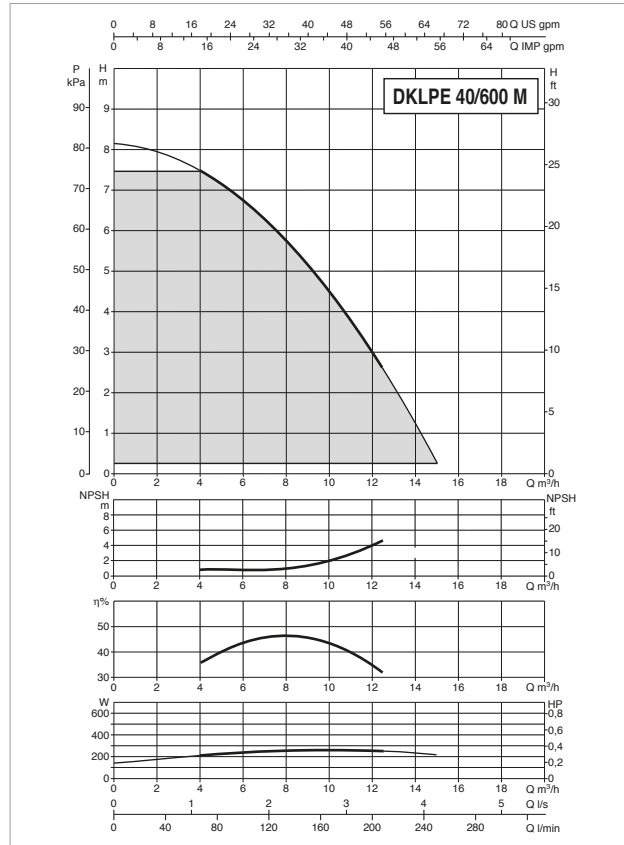
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n.r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
KLME 80-600 M MCE11/C *	1x220-240 V ~	4 poles	1440	0,79	0,75	1,00	7,0
KLPE 80-1200 M MCE15/C *		2 poles	2840	2,21	1,84	2,50	16,0
KLPE 80-1200 T MCE30/C *	3x400 V ~	2 poles	2840	2,21	1,84	2,50	4,8

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

MODEL	A	B	B1	B2	C	D	D1	D2	D3	D4	H	H1	I	L	L1	L2	M	DNA GAS	DNM GAS	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
											L/A	L/B	H											
KLME 80-600 M MCE11/C	262	200	-	-	115	128	150	160	200	4 HOLES 18x23	671	97	-	360	190	170	2 HOLES M12	80	80	520	400	710	0,15	47
KLPE 80-1200 M MCE15/C	262	200	-	-	115	128	150	160	200		746	97	-	360	190	170		80	80	520	400	710	0,15	47
KLPE 80-1200 T MCE30/C	353	286	-	-	115	128	150	160	200		743	97	-	360	190	170		80	80	520	290	450	0,07	52,1

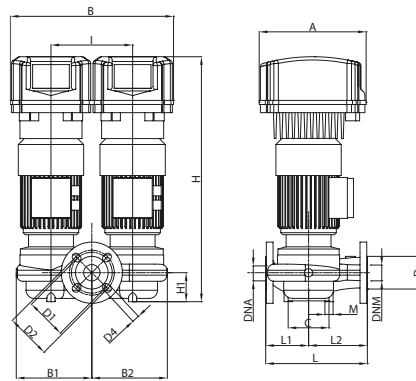
DKLPE 40 - IN-LINE ELECTRIC PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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.



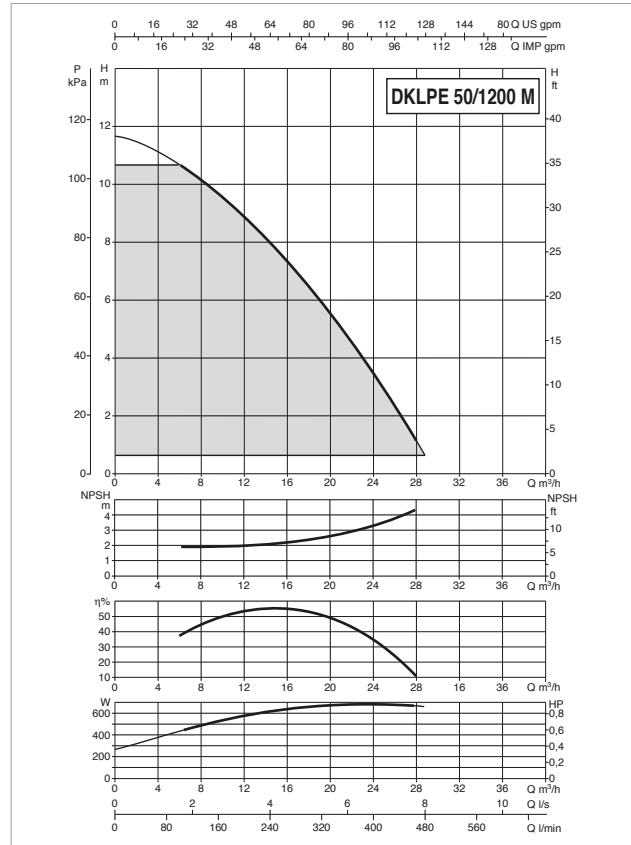
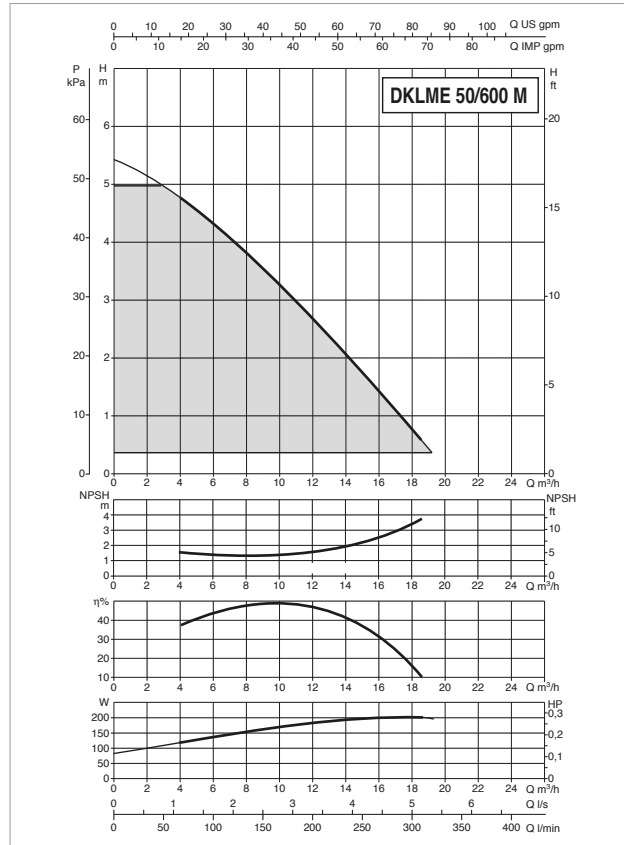
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n.r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DKLPE 40- 600 M MCE11/C	1x220-240 V ~	2 poles	2950	0,37	0,37	0,50	4,3
DKLPE 40-1200 M MCE11/C *		2 poles	2890	0,63	0,55	0,75	6,0

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

MODEL	A	B	B1	B2	C	D	D1	D2	D3	D4	H	H1	I	L	L1	L2	M	DNA GAS	DNM GAS	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																				L/A	L/B	H		
DKLPE 40- 600 M MCE11/C	262	400	185	187	100	80	100	110	150	4 HOLES	608	66	200	250	105	145	2 HOLES M14	40	40	500	270	660	0,09	56
DKLPE 40-1200 M CE11/C	262	400	185	187	100	80	100	110	150	18x23	608	66	200	250	105	145		40	40	500	270	660	0,09	61

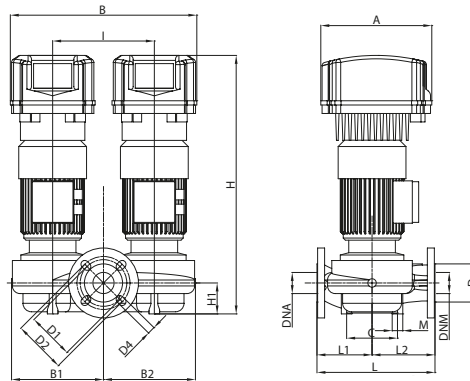
DKLME / DKLPE 50 - IN-LINE ELECTRIC PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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.



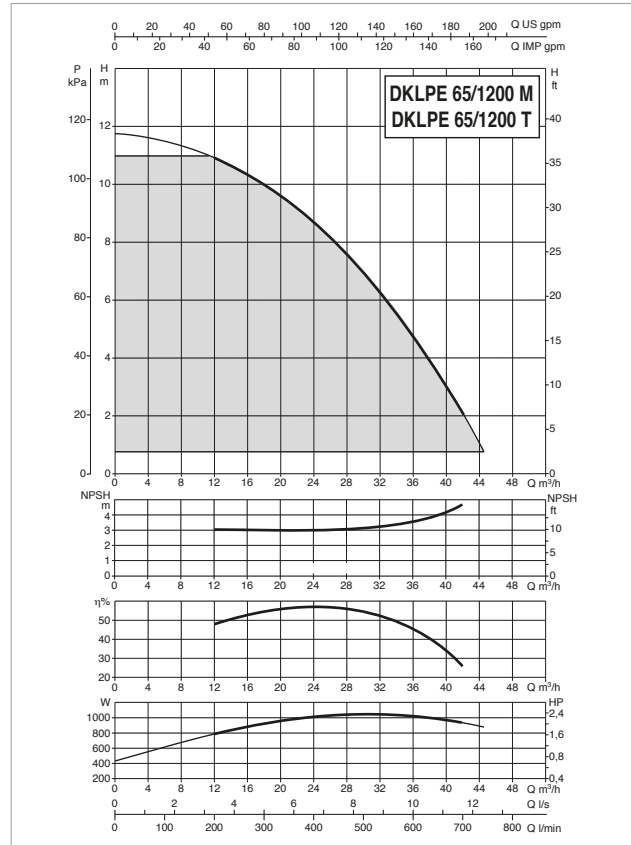
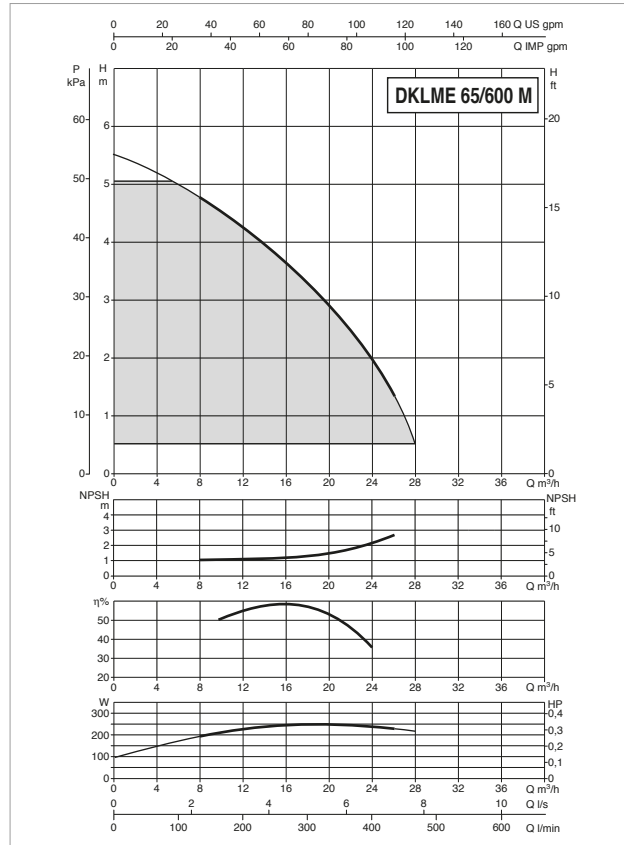
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n.r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DKLME 50-600 M MCE11/C	1x220-240 V ~	4 poles	1340	0,34	0,25	0,33	4,1
DKLPE 50-1200 M MCE11/C *		2 poles	2890	0,90	0,75	1,00	7,7

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

MODEL	A	B	B1	B2	C	D	D1	D2	D3	D4	H	H1	I	L	L1	L2	M	DNA GAS	DNM GAS	PACKING DIMENSIONS			VOLUME (m ³)	WEIGHT kg
																				L/A	L/B	H		
DKLME 50-600 M MCE11/C	262	400	217	217	120	90	110	125	165	4 HOLES	622	73	200	280	130	150	2 HOLES	50	50	520	400	710	0,15	76
DKLPE 50-1200 M CE11/C	262	400	217	217	120	90	110	125	165	18x23	622	73	200	280	130	150	M14	50	50	520	400	710	0,15	88

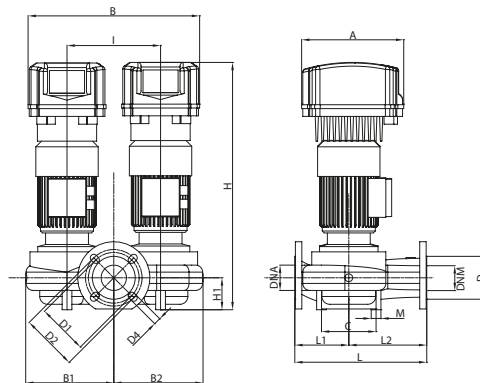
DKLME / DKLPE 65 - IN-LINE ELECTRIC PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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.



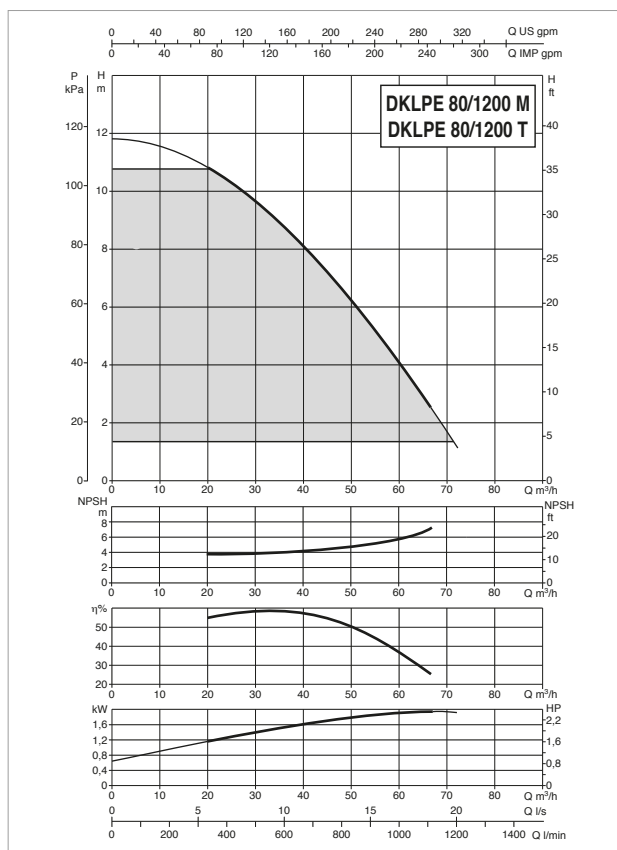
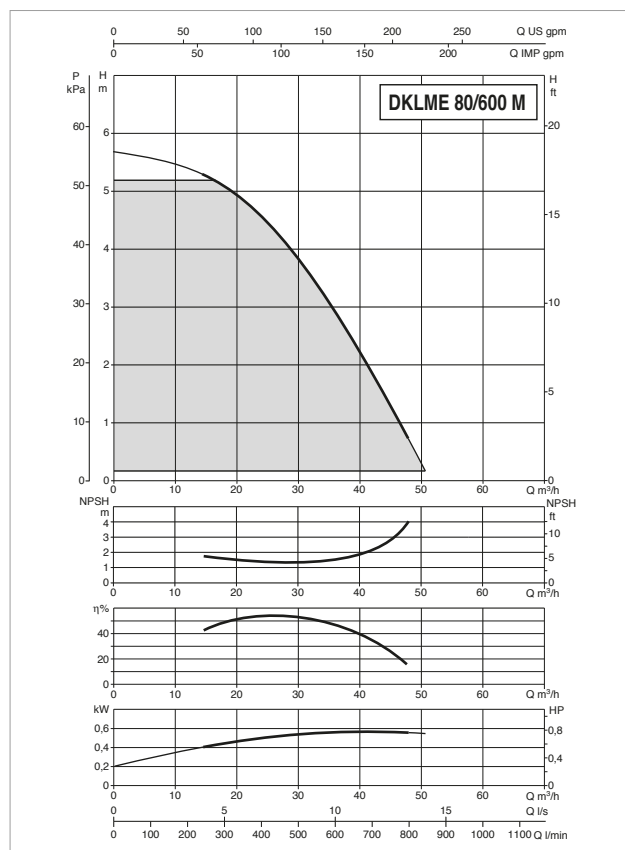
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n.r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DKLME 65-600 M MCE11/C	1x220-240 V ~	4 poles	1400	0,38	0,37	0,50	4,3
DKLPE 65-1200 M MCE11/C *		2 poles	2880	1,37	1,10	1,50	10,7
DKLPE 65-1200 T MCE30/C *		2 poles	2880	1,37	1,10	1,50	3,9

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

MODEL	A	B	B1	B2	C	D	D1	D2	D3	D4	H	H1	I	L	L1	L2	M	DNA GAS	DNM GAS	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																				L/A	L/B	H		
DKLME 65-600 M MCE11/C	262	440	226	229	140	110	130	145	185	4 HOLES 18x23	641	82	240	340	140	200	2 HOLES M14	65	65	520	400	710	0,15	80
DKLPE 65-1200 M CE11/C	262	440	226	229	140	110	130	145	185		641	82	240	340	140	200		65	65	520	400	710	0,15	99
DKLPE 65-1200 T MCE30/C	353	537	226	229	140	110	130	145	185		639	82	240	340	140	200		65	65	726	626	844	0,38	92,3

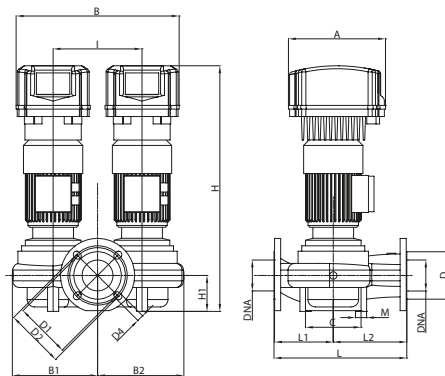
DKLME / DKLPE 80 - IN-LINE ELECTRIC PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n.r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DKLME 80-600 M MCE11/C *	1x220-240 V ~	4 poles	1440	0,79	0,75	1,00	7,0
DKLPE 80-1200 M MCE15/C *		2 poles	2840	2,21	1,84	2,50	16,0
DKLPE 80-1200 T MCE30/C *		2 poles	2840	2,21	1,84	2,50	4,8

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

MODEL	A	B	B1	B2	C	D	D1	D2	D3	D4	H	H1	I	L	L1	L2	M	DNA GAS	DNM GAS	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																				L/A	L/B	H		
DKLME 80-600 M MCE11/C	262	440	230	233	150	128	150	160	200	4 HOLES 18x23	671	97	240	360	160	200	2 HOLES M14	80	80	520	400	710	0,15	96
DKLPE 80-1200 M MCE15/C	262	440	230	233	150	128	150	160	200		746	97	240	360	160	200		80	80	520	400	710	0,15	98
DKLPE 80-1200 T MCE30/C	353	537	230	233	150	128	150	160	200		743	97	240	360	160	200		80	80	726	626	844	0,28	108,1

CME /CM-GE / DCME / DCM-GE

ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS



TECHNICAL DATA

Operating range:

from 1,2 to 360 m³/h with head up to 34 metres

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

Maximum operating pressure:

PN10 : DN 40 - DN 50

PN16 : Remainder of the range

Flanging: PN 16.

Counter flanges on request:

DN 40 - DN 50 - DN 65 - DN 80 - DN 100 - DN 125 - DN 150; PN 16.

Protection: IP 55

Insulation: class F

Liquid temperature range:

-10 °C to +130 °C for DN 40 - 50

-10 °C to +140 °C for the remainder of the range

Maximum ambient temperature: +40°C

Maximum working pressure: 16 bar

Standard single-phase voltage: 1x220-240 V / 50-60 Hz

Special version on request:

three-phase 3x400 V / 50 Hz or three-phase 3x460 V / 60 Hz

Standard three-phase voltage: 3x400 V / 50 Hz

Special version on request: 3x460 V / 60 Hz

Pumped liquid: clean, free of solids and abrasives, non-viscous, non-aggressive, non-crystallised and chemically neutral.

APPLICATIONS

In-line port circulation pumps, suitable for heating, air conditioning, refrigeration and sanitary water systems. Particularly versatile thanks to the use of the MCE/C inverter, offering performance features capable of automatically adapting to the different needs of the system, keeping a consistent differential pressure. Available in the single and twin versions.

CONSTRUCTION FEATURES OF THE PUMP

PN 16 flanged suction and delivery ports with threaded holes for control manometers. Cast iron pump body and motor support, cast iron or technopolymer impeller depending on mode (bronze impeller available on request for DN 65 to DN 150 models only). Stainless steel motor shaft. Seal device: standardised mechanical seal according to DIN 24960 in carbon/silicon carbide with EPDM OR rings.

CONSTRUCTION FEATURES OF THE MOTOR

External ventilation asynchronous type motor. Rotor running on ball bearings, oversized to ensure low noise and durability. Construction according to CEI 2-3.

CONSTRUCTION FEATURES OF THE ELECTRONICS: MCE/C INVERTER

MCE/C inverters are the latest technological achievement of the DAB inverter range. They represent a new generation of inverters for use with circulation pumps, and set themselves apart due to ease of use, power, simplicity of installation and management. MCE/C inverters have been designed for managing circulation pumps. By allowing a simple adjustment of the differential pressure, they give the possibility of adjusting the performance of the circulation pump to the actual system requirements. They are fitted on the fan cover of the motor. This makes the installation of the pump with MCE/C particularly easy and quick. The protection class of the MCE/C is IP55. The easy of programming is guaranteed by the use of a simple and intuitive interface, similar to Dialogue electronic circulators, and a graphic display. MCE/C inverters have a double micro-processor construction that guarantees maximum efficiency and reliability.

A reliable and sturdy construction, together with a modern and innovative design, complete the product, also in terms of aesthetic value. MCE/C inverters protect the motor and the pump, and increase their life, by eliminating hammering effects and making the pump rotate at the minimum number of rotations capable of meeting the requirements of the user. In addition, electric pumps controlled by the MCE/C inverter are environmentally friendly. In fact, by ensuring that the pump only uses the power that is strictly necessary for meeting the needs of the users, electricity consumption is strongly reduced when compared with fixed speed pumps. It is possible to create twin units by using the appropriate cable for the connection of MCE/C inverters.

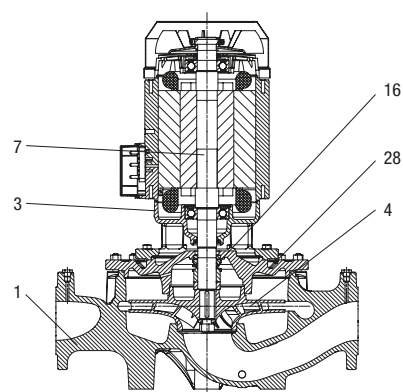
CME /CM-GE / DCME / DCM-GE

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 DN 65-80-100-125-150 / DCME Dn 40 - 50 / CME 40-1450T, CME 50-1420T TECHNOPOLYMER B CME 40-870T, CME 50-1000T
7	SHAFT WITH ROTOR	AISI 303 STAINLESS STEEL X10 CrNiS 1809 UNI 6900/71
16	MECHANICAL SEAL	CARBON/GRAPHITE
28	OR RING	EPDM RUBBER

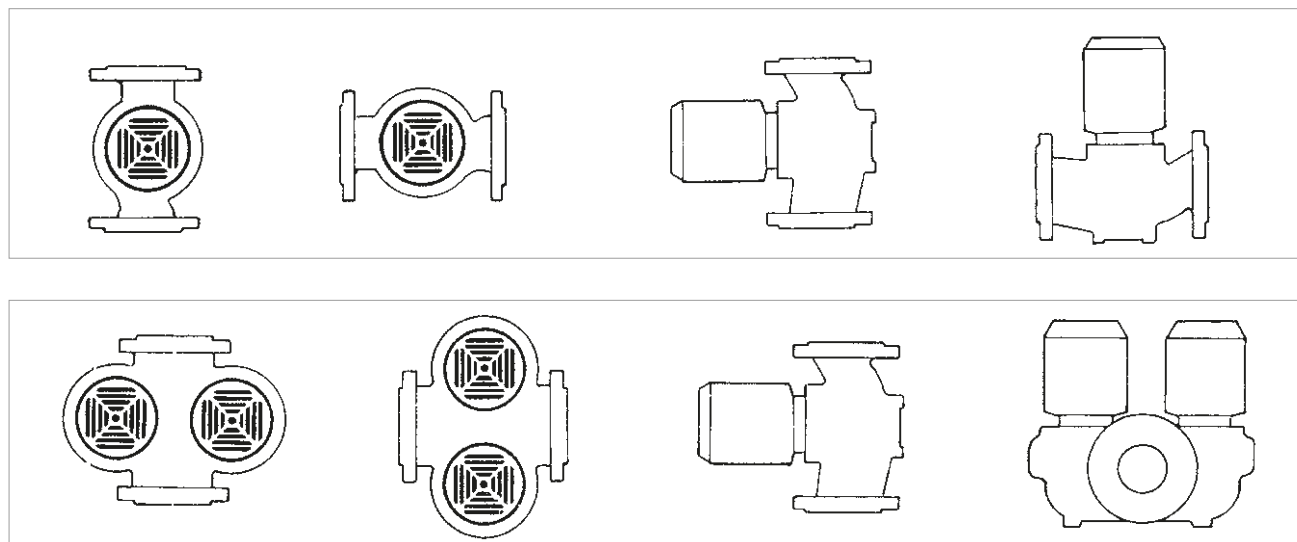
* In contact with the liquid



– Legend: (example)

	D	C	M - G	E	65	420	A	BAQE	0,25	MCE	11	C
- Single pump												
D - Twin pump												
Circulator												
M = 4-pole motor												
M = 2-pole motor												
G = version with coupling												
E = motor complete with MCE/C inverter												
(DN) nominal diameter of threaded ports												
Maximum head (cm)												
A - Cast iron impeller												
B - Bronze impeller												
Mechanical seal type												
Motor P2 in kW												
MCE = DAB inverter												
11 = P. max in Kw x 10												
C = Circulation version												

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



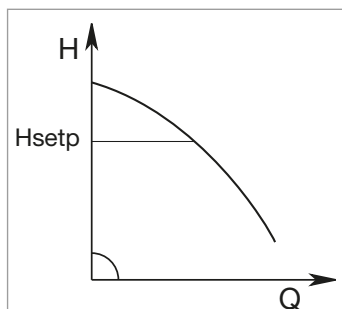
MCE/C INVERTER

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.

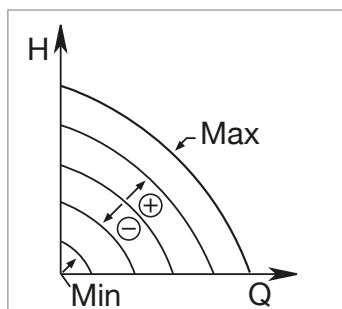
1 - ΔP -c constant differential pressure adjustment mode

The ΔP -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:

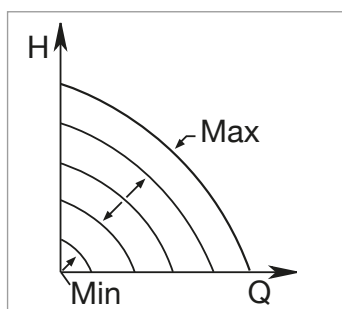
- a. two-pipe heating systems with thermostat valves
- b. underfloor heating systems with thermostat valves
- c. single-pipe heating systems with thermostat valves and calibration valves
- d. systems with primary circuit pumps



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.

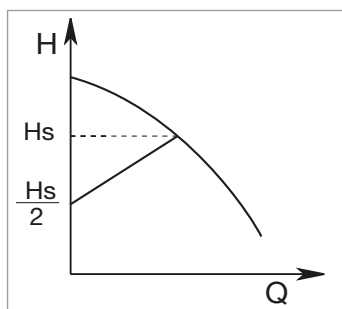


2.2 - Adjustment of the constant curve with external analogue signal

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 - ΔP -v * proportional differential pressure adjustment mode

With ΔP -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.

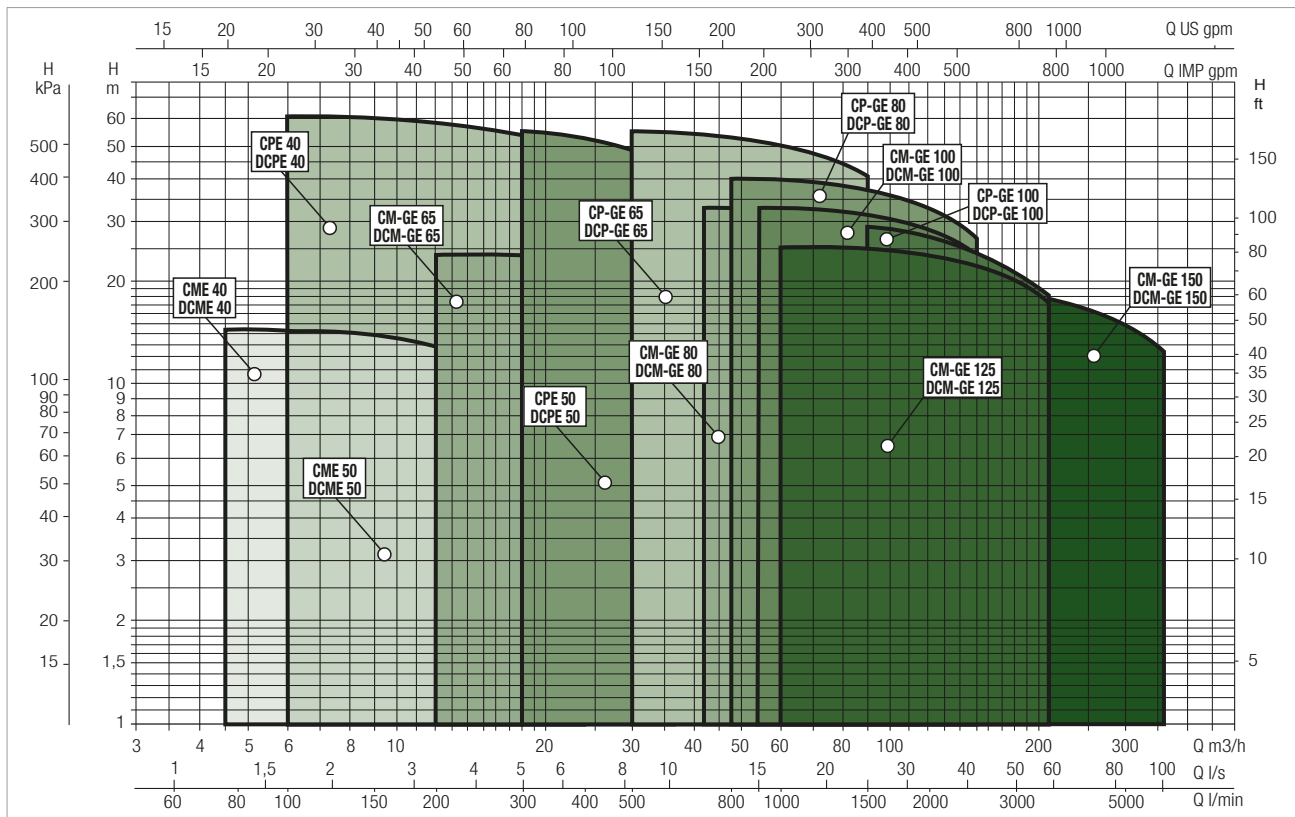
ELECTRIC IN-LINE PUMPS

ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

PERFORMANCE RANGE

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

GRAPHIC SELECTION TABLE



SELECTION TABLE - CME / CM-GE - 4 POLES

MODEL	Q=	Q=																H	
		m ³ /h	0	1,2	2,4	3	3,6	4,5	4,8	6	12	18	24	30	36	42	48		
CME 40- 870 M MCE11/C IE2	Q=	0	20	40	50	60	75	80	100	200	300	400	500	600	700	800	900	1000	1100
CME 40-1450 M MCE11/C IE2	l/min	0	20	40	50	60	75	80	100	200	300	400	500	600	700	800	900	1000	1100
CME 40-1450 T MCE30/C IE2																			
CME 50-1000 M MCE11/C IE2																			
CME 50-1420 M MCE11/C IE2																			
CME 50-1420 T MCE30/C IE2																			
CM-GE 65- 660/A/BAQE/0.55 M MCE11/C IE2																			
CM-GE 65- 920/A/BAQE/0.75 M MCE11/C IE2																			
CM-GE 65- 920/A/BAQE/0.75 T MCE30/C IE2																			
CM-GE 65-1200/A/BAQE/1.5 M MCE15/C IE2																			
CM-GE 65-1200/A/BAQE/1.5 T MCE30/C IE2																			
CM-GE 65-1680/A/BAQE/3 T MCE30/C IE2																			
CM-GE 65-2380/A/BAQE/4 T MCE30/C IE2																			

CME /CM-GE / DCME / DCM-GE

ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

SELECTION TABLE - CME / CM-GE - 4 POLES

MODEL	Q=	0	1,2	2,4	3	3,6	4,5	4,8	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	102	114
	Q=	0	20	40	50	60	75	80	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1700	1900
CM-GE 80- 650/A/BAQE/0.75 M MCE11/C IE2		6,5								6,3	6,1	5,8	5,5	5	4,5	3,9									
CM-GE 80- 650/A/BAQE/0.75 T MCE30/C IE2		6,5								6,3	6,1	5,8	5,5	5	4,5	3,9									
CM-GE 80- 890/A/BAQE/1.5 M MCE15/C IE2		8,9									8,8	8,7	8,6	8,3	8	7,6	7,2	6,6	6						
CM-GE 80- 890/A/BAQE/1.5 T MCE30/C IE2		8,9									8,8	8,7	8,6	8,3	8	7,6	7,2	6,6	6						
CM-GE 80-1530/A/BAQE/3 T MCE30/C IE2		15,3										15,4	15,3	15	14,6	14,1	13,5	12,9	12,2	11,3					
CM-GE 80-1700/A/BAQE/4 T MCE55/C IE2		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/A/BAQE/5.5 T MCE55/C IE2		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/A/BAQE/7.5 T MCE110/C IE2		27													26	25,5	25	24,5	23,6	22,7	21,5	20,2	19		
CM-GE 80-3420/A/BAQE/11 T MCE110/C IE2		34,2													33,2	33	32,5	32	31,5	30,7	29,8	29	28	25	21,7

MODEL	Q=	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
	Q=	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/A/BAQE/0.75 M MCE11/C IE2		5,1	4,9	4,8	4,7	4,7	4,4	4,2	3,8	3,4	3																
CM-GE 100- 510/A/BAQE/0.75 T MCE30/C IE2		5,1	4,9	4,8	4,7	4,7	4,4	4,2	3,8	3,4	3																
CM-GE 100- 865/A/BAQE/1.5 M MCE15/C IE2		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- 865/A/BAQE/1.5 T MCE30/C IE2		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/A/BAQE/3 T MCE30/C IE2		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/A/BAQE/4 T MCE55/C IE2		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/A/BAQE/5.5 T MCE55/C IE2		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/A/BAQE/7.5 T MCE110/C IE2		20,5						21	21	21	20,7	20,5	20	19,8	19,5	19	18	16,7	16								
CM-GE 100-2550/A/BAQE/11 T MCE110/C IE2		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/A/BAQE/15 T MCE150/C IE2	H (m)	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/A/BAQE/4 T MCE55/C IE2		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/A/BAQE/5.5 T MCE55/C IE2		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/A/BAQE/7.5 T MCE110/C IE2		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/A/BAQE/11 T MCE110/C IE2		21								21,5	21,5	21,5	21,4	21,2	21	20,9	20	19,8	18	16							
CM-GE 125-2550/A/BAQE/15 T MCE150/C IE2		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/A/BAQE/5.5 T MCE55/C IE2		9,6													9,6	9,5	9,4	9,3	8,7	7,8	6,7	5,9	5,5				
CM-GE 150-1322/A/BAQE/7.5 T MCE110/C IE2		13,2													13	12,8	12,6	12,5	11,9	11,1	10,1	8,9	8,5				
CM-GE 150-1600/A/BAQE/11 T MCE110/C IE2		16														15,5	15,5	15,4	14,8	14	13	11,8	11	10,5	9,2		
CM-GE 150-1950/A/BAQE/15 T MCE150/C IE2		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

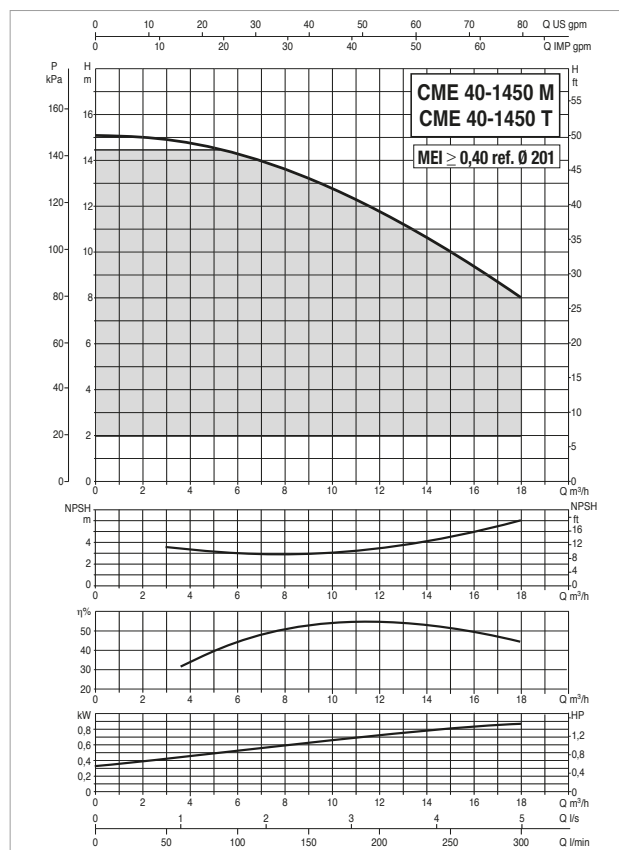
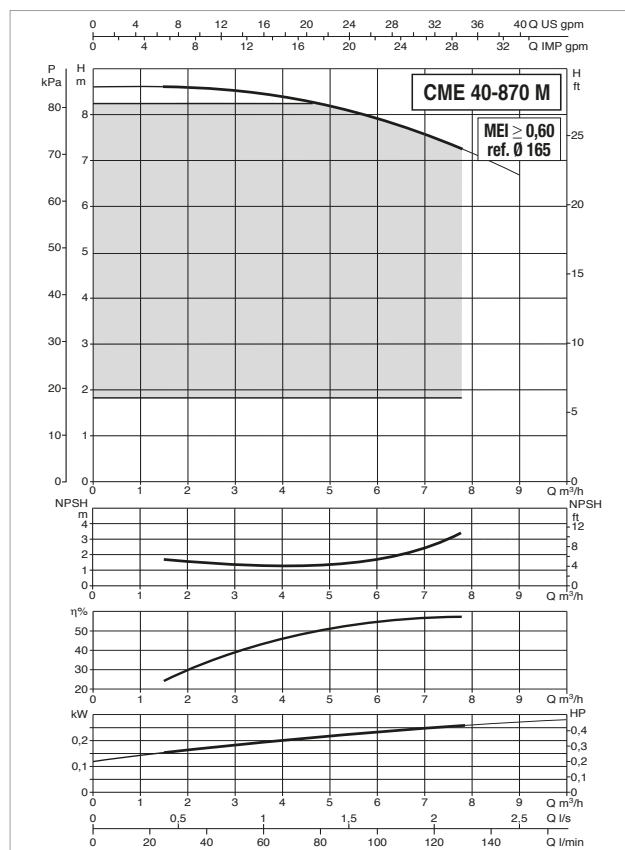
SELECTION TABLE - DCME / DCM-GE - 4 POLES

MODEL	Q=	0	3	4,5	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	102	114	120	150
	Q=	0	50	75	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1700	1900	2000	2500
	m ³ /h																						
	l/min																						
DCME 40-620 M MCE11/C	H (m)	6,3	6,2	6,0	5,8	3,0																	
DCME 50-460 M MCE11/C		4,8			4,6	3,9	2,4																
DCME 50-880 M MCE11/C		9,1			8,8	7,7	5,9																
DCM-GE 65- 660/A/BAQE/0.55 M MCE11/C		6,5			6,4	5,9	4,4	3,1															
DCM-GE 65- 920/A/BAQE/0.75 M MCE11/C		9,1			9,1	8,8	7,4	5,8	3,5														
DCM-GE 65- 920/A/BAQE/0.75 T MCE30/C		9,1			9,1	8,8	7,8	6,4	4,5														
DCM-GE 65-1200/A/BAQE/1.5M MCE11/C		12,0				11,9	11,6	11,0	10,0	9,0	7,6												
DCM-GE 65-1200/A/BAQE/1.5 T MCE30/C		12,0				11,9	11,6	11,0	10,0	9,0	7,6												
DCM-GE 65-1680/A/BAQE/3 T MCE30/C		16,8				16,7	16,3	15,7	14,9	13,7	12,4	11,0	9,3										
DCM-GE 65-2380/A/BAQE/4 T MCE30/C		23,8				23,9	23,5	22,8	21,8	20,3	18,6	16,8	14,5										
DCM-GE 80- 650/A/BAQE/0.75 M IE2 MCE11/C		6,5				6,2	5,8	5,2	4,5	3,7	2,9	2,1											
DCM-GE 80- 650/A/BAQE/0.75 T MCE30/C		6,5				6,2	5,8	5,2	4,5	3,7	2,9	2,1											
DCM-GE 80- 890/A/BAQE/1.5 M MCE15/C		8,5						8,3	8,0	7,5	6,8	6,1	5,3	4,4	3,5								
DCM-GE 80- 890/A/BAQE/1.5 T MCE30/C		8,5						6,7	6,2	5,5	4,8	4,2	3,5	2,9	2,3								
DCM-GE 80-1530/A/BAQE/3T MCE30/C		14,4						14,1	13,7	13,0	12,2	11,3	10,2	9,2	8,0	6,8							
DCM-GE 80-1700/A/BAQE/4 T MCE30/C		16,0						15,7	15,5	15,3	14,6	14,0	13,2	12,3	11,2	10,0	8,9	7,7					
DCM-GE 80-2410/A/BAQE/5.5T MCE55/C		24,1								23,3	22,7	22,0	21,1	20,2	18,9	17,6	16,2						
DCM-GE 80-2700/A/BAQE/7.5 T MCE110/C		27,0								26,1	26,1	25,5	24,9	24,2	23,2	22,1	20,7	19,3	17,9				
DCM-GE 80-3420/A/BAQE/11 T MCE110/C		34,2								33,3	33,3	32,9	32,3	31,8	30,9	29,9	29,0	27,8	24,4	22,0	20,8		
DCM-GE 100- 510/A/BAQE/0.75 M MCE11/C		4,9				4,8	4,7	4,6	4,5	4,0	3,7	3,2	2,6	2,1									
DCM-GE 100- 510/A/BAQE/0.75 T MCE30/C		4,9				4,8	4,7	4,6	4,5	4,0	3,7	3,2	2,6	2,1									
DCM-GE 100- 865/A/BAQE/1.5 M MCE15/C		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- 865/A/BAQE/1.5 T MCE30/C		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/A/BAQE/3 T MCE30/C		10,2							10,2	10,0	9,8	9,6	9,5	9,3	8,9	8,5	8,0	7,5	7,1	5,9	4,7	4,0	
DCM-GE 100-1320/A/BAQE/4 T MCE55/C		13,2									13,2	13,1	13,0	12,8	12,4	11,9	11,3	10,8	10,2	8,8	7,4	6,6	
DCM-GE 100-1650/A/BAQE/5,5T MCE55/C		16,5									16,5	16,4	16,3	16,0	15,8	15,5	14,9	14,4	13,7	12,4	10,8	10,0	
DCM-GE 100-2050/A/BAQE/7.5 T MCE110/C		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/A/BAQE/11 T MCE110/C		24,0											23,3	22,8	22,6	22,4	21,9	21,4	21,0	19,8	18,1	17,5	
DCM-GE 100-3290/A/BAQE/15 T MCE150/C		30,9											30,5	30,3	30,1	29,9	29,4	28,8	28,3	27,0	25,8	25,1	20,0

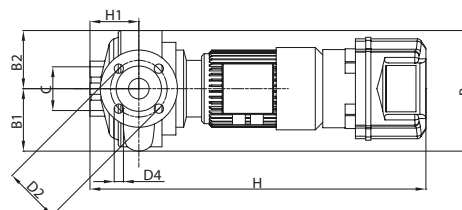
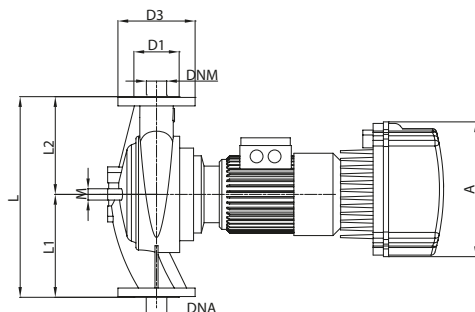
SELECTION TABLE - DCM-GE - 4 POLES

MODEL	Q=	0	30	36	42	48	54	60	66	72	78	84	90	102	114	120	150	180	210	240	250	270	330	360
	Q=	0	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1700	1900	2000	2500	3000	3500	4000	4167	4500	5500	6000
	m ³ /h																							
	l/min																							
DCM-GE 125-1075/A/BAQE/4 T MCE55/C	H (m)	10,0						9,5	9,4	9,2	9,0	8,7	8,4	7,7	6,8	6,5	4,4	2,4						
DCM-GE 125-1270/A/BAQE/5.5 T MCE55/C		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/A/BAQE/7.5 T MCE110/C		14,4						14,6	14,6	14,4	14,2	14,0	13,8	13,2	12,7	12,3	10,2	7,5	4,9					
DCM-GE 125-2100/A/BAQE/11 T MCE110/C		20,1										19,9	19,6	19,3	18,2	17,8	15,4	12,7						
DCM-GE 125-2550/A/BAQE/15 T MCE150/C		24,5										23,8	23,7	23,4	22,7	22,1	20,0	17,4	13,9					
DCM-GE 150- 955/A/BAQE/5.5 T IE2 MCE55/C		9,6														8,1	7,0	6,2	4,9	3,5	2,8			
DCM-GE 150-1322/A/BAQE/7.5T MCE110/C		11,8											11,5	11,5	11,4	11,0	10,0	8,5	7,2	6,0	5,5			
DCM-GE 150-1600/A/BAQE/11 T IE2 MCE110/C		14,8												14,2	14,2	14,0	13,4	12,5	11,4	10,1	9,4	8,8		
DCM-GE 150-1950/A/BAQE/15 T MCE150/C		18,1												17,9	17,8	17,7	17,5	16,9	15,9	14,8	14,0	13,5	10,5	8,9

Pumped liquid temperature range: from -10 °C to +130 °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.

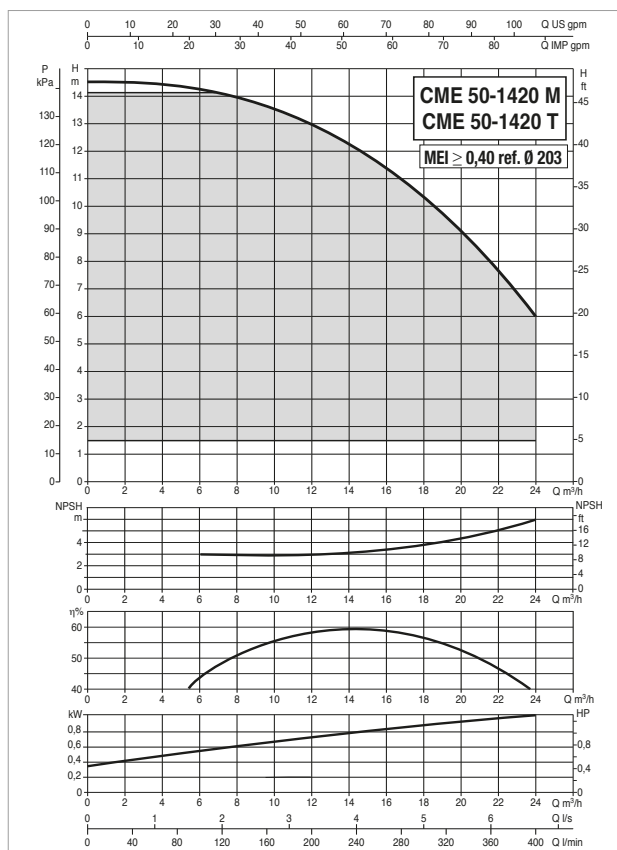
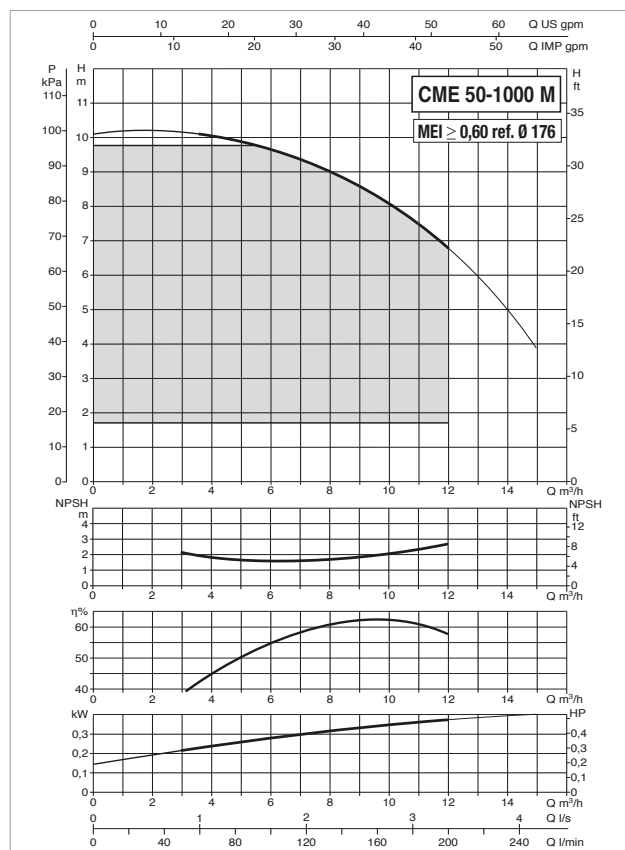


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	TYPE MOTOR	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CME 40- 870 M MCE11/C	1x220-240 V ~	4 poles	1459	0,48	0,75	1	5,0
CME 40-1450 M MCE11/C		4 poles	1450	1,26	0,9	1,2	10,0
CME 40-1450 T MCE30/C IE2	3x400 V ~	4 poles	1450	1,26	0,9	1,2	t.b.d.

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																		L/A	L/B	H		
CME 40- 870 M MCE11/C	262	231	118	113	85	88	110	150	4X18	653	95	390	200	190	12	40	40	500	270	810	0,11	45
CME 40-1450 M MCE11/C	262	231	118	113	85	88	110	150	4X18	645	100	380	200	180	12	40	40	500	270	810	0,11	35
CME 40-1450 T MCE30/C IE2	262	231	118	113	85	88	110	150	4X18	645	100	380	200	180	12	40	40	500	270	810	0,11	35

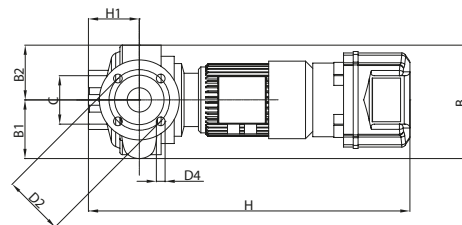
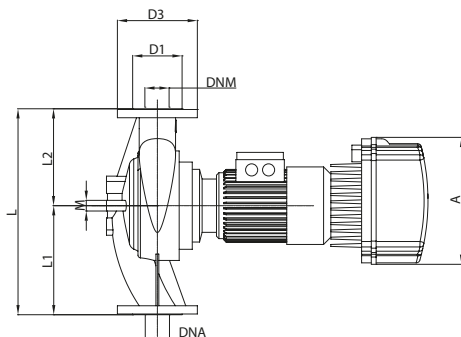
CME 50 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -10 °C to +130 °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.

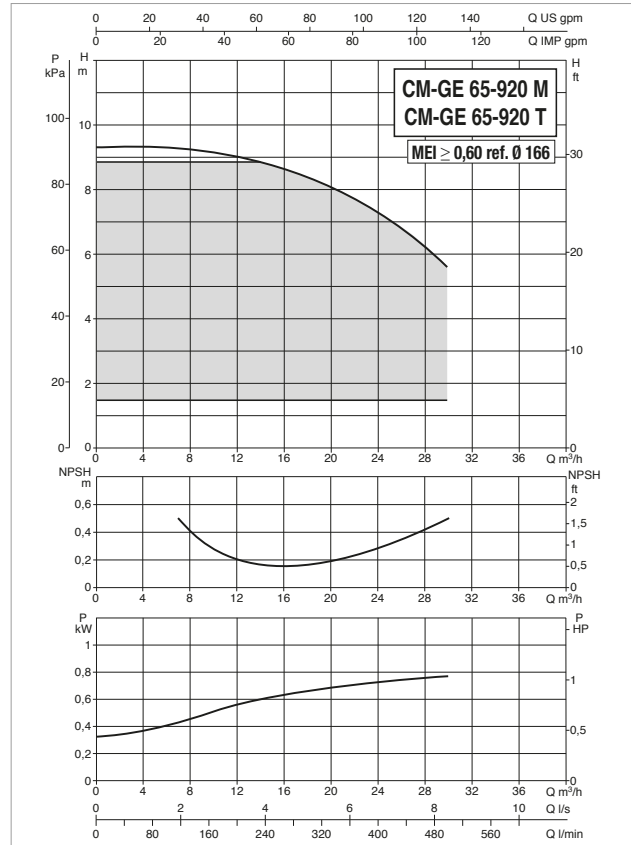
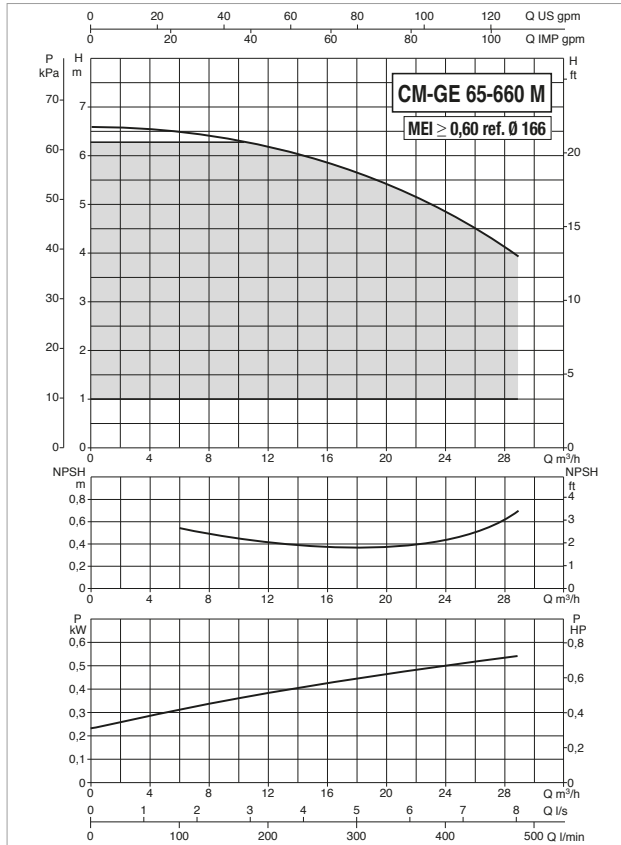


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CME 50-1000 M MCE11/C	1x220-240 V ~	4 poles	1451	0,58	0,75	1	5,6
CME 50-1420 M MCE11/C		4 poles	1450	1,47	1,1	1,5	11,3
CME 50-1420 T MCE30/C IE2	3x400 V ~	4 poles	1450	1,47	1,1	1,5	t.b.d.

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																		L/A	L/B	H		
CME 50-1000 M MCE11/C	262	233	120	113	100	102	125	165	4X18	663	105	425	225	200	12	50	50	500	270	810	0,11	51
CME 50-1420 M MCE11/C	262	280	149	131	-	102	125	165	4X18	695	110	400	220	180	-	50	50	500	270	810	0,11	40
CME 50-1420 T MCE30/C IE2	262	280	149	131	-	102	125	165	4X18	695	110	400	220	180	-	50	50	500	270	810	0,11	40

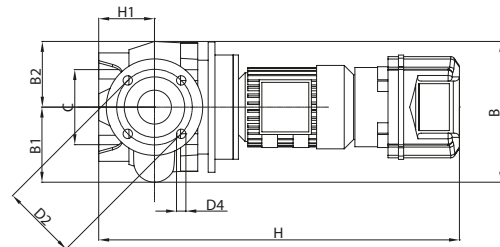
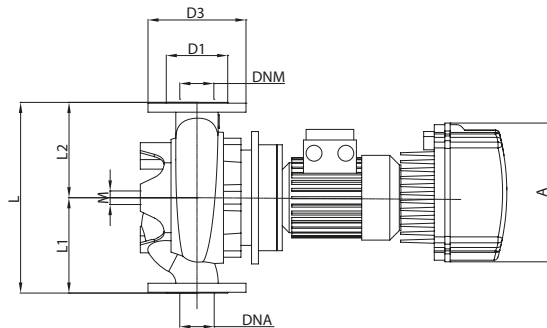
CM-GE 65 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.



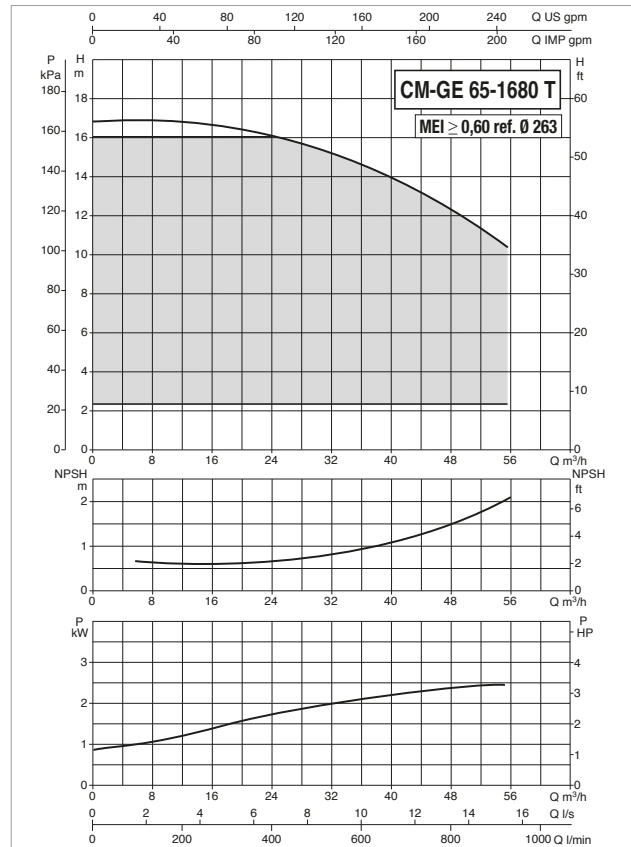
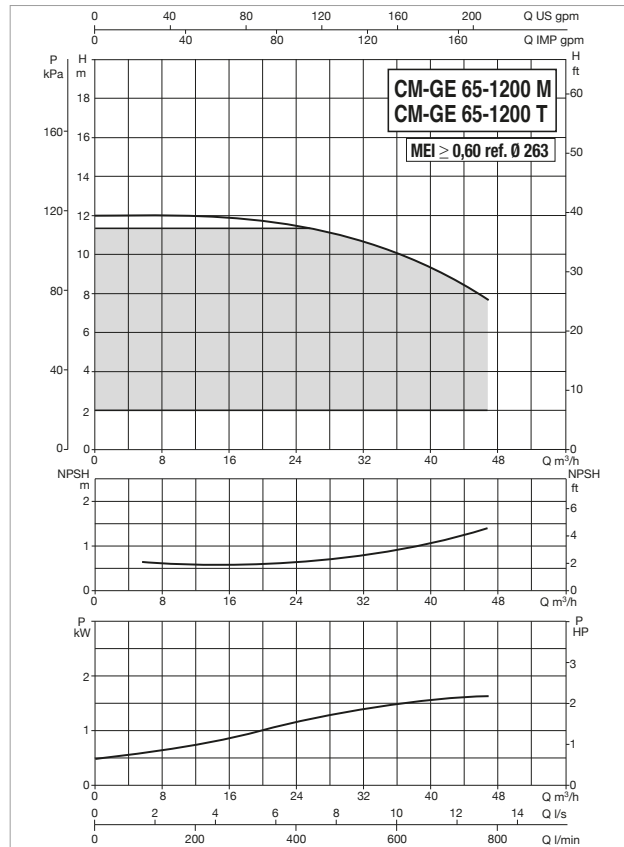
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CM-GE 65- 660/A/BAQE/ 0.55 M MCE11/C IE2 *	1x220-240 V ~	4 poles	1400	0,84	0,55	0,8	7,3
CM-GE 65- 920/A/BAQE/ 0.75 M MCE11/C IE2 *		4 poles	1430	1,23	0,75	1	9,8
CM-GE 65- 920/A/BAQE/ 0.75 T MCE30/C IE2 *	3x400 V ~	4 poles	1430	1,23	0,75	1	t.b.d.

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																		L/A	L/B	H		
CM-GE 65- 660/A/BAQE/ 0.55 M MCE11/C IE2	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 MCE11/C IE2	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 MCE30/C IE2	262	270	144	126	144	122	145	185	4X18	713	105	360	180	180	16	65	65	650	400	945	0,25	64

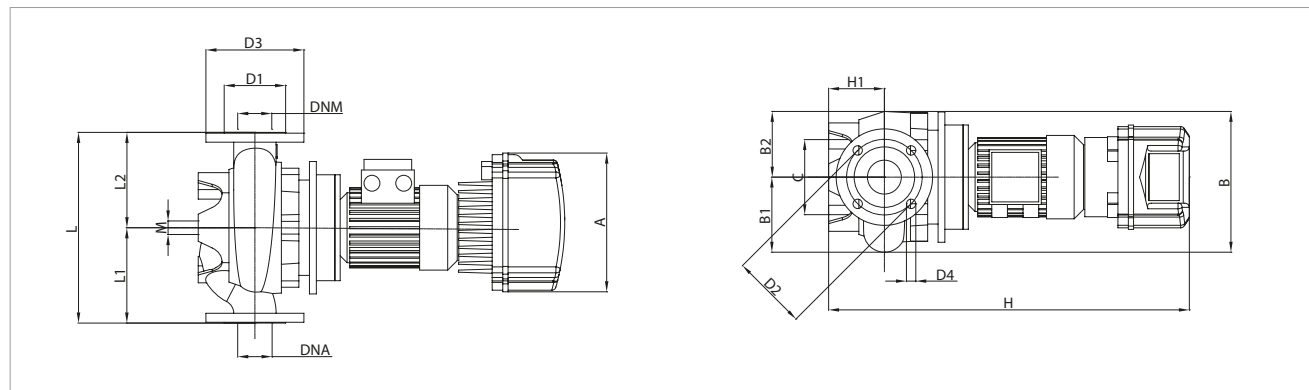
CM-GE 65 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.



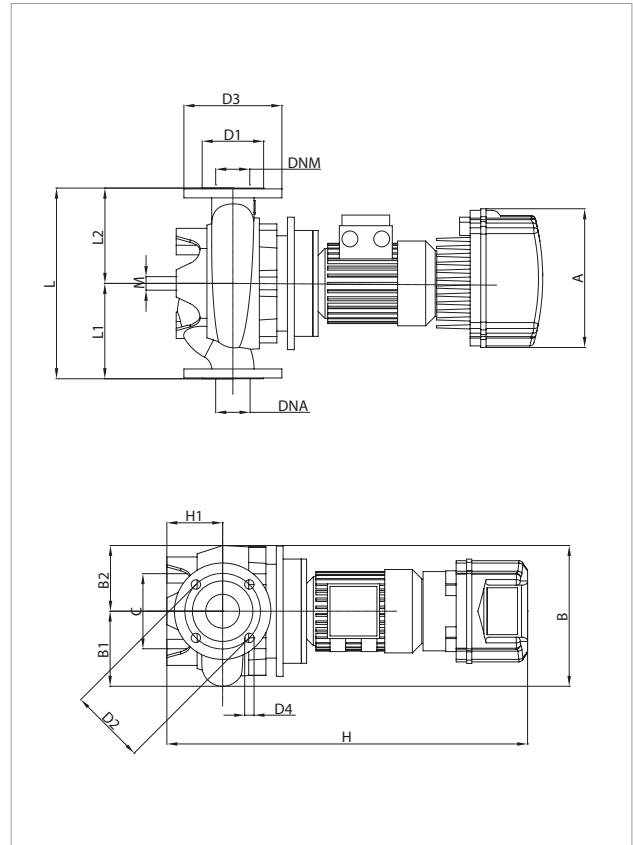
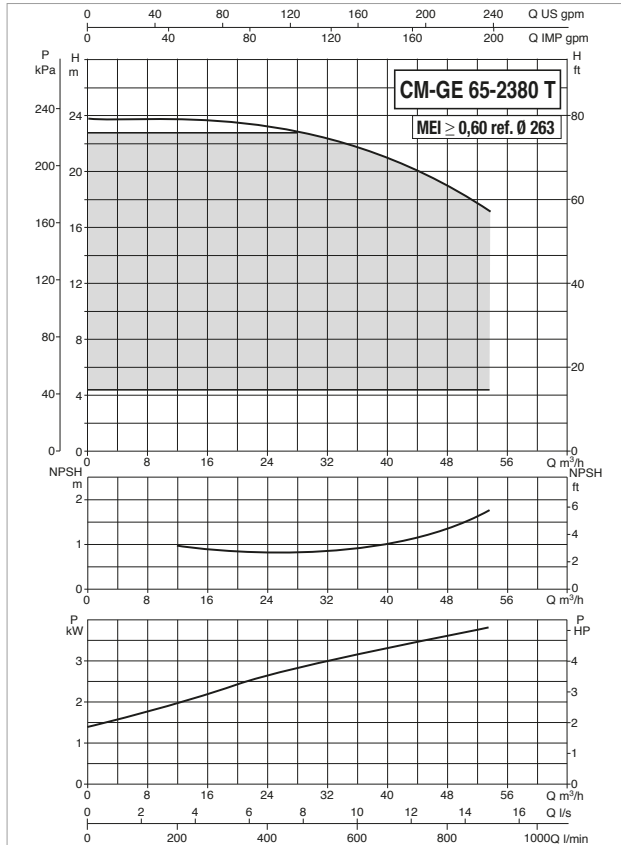
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CM-GE 65-1200/A/BAQE/ 1.5 M MCE15/C IE2 *	1x220-240 V ~	4 poles	1430	2,10	1,5	2	15,4
CM-GE 65-1200/A/BAQE/ 1.5 T MCE30/C IE2 *	3x400 V ~	4 poles	1430	2,10	1,5	2	t.b.d.
CM-GE 65-1680/A/BAQE/ 3 T MCE30/C IE2 *		4 poles	1448	2,83	3	4	6,6

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																		L/A	L/B	H		
CM-GE 65-1200/A/BAQE/ 1.5 M MCE15/C IE2	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 T MCE30/C IE2	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 MCE30/C IE2	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 HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.

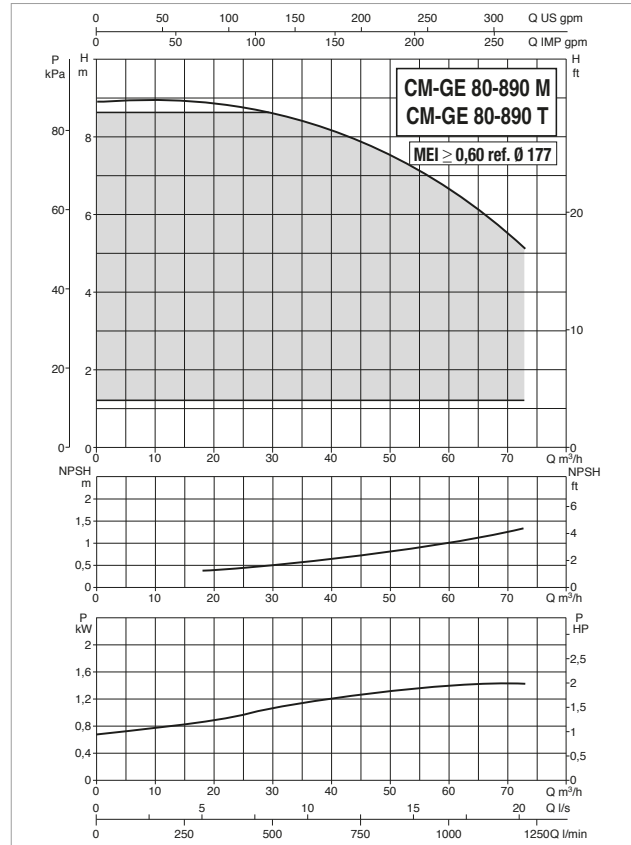
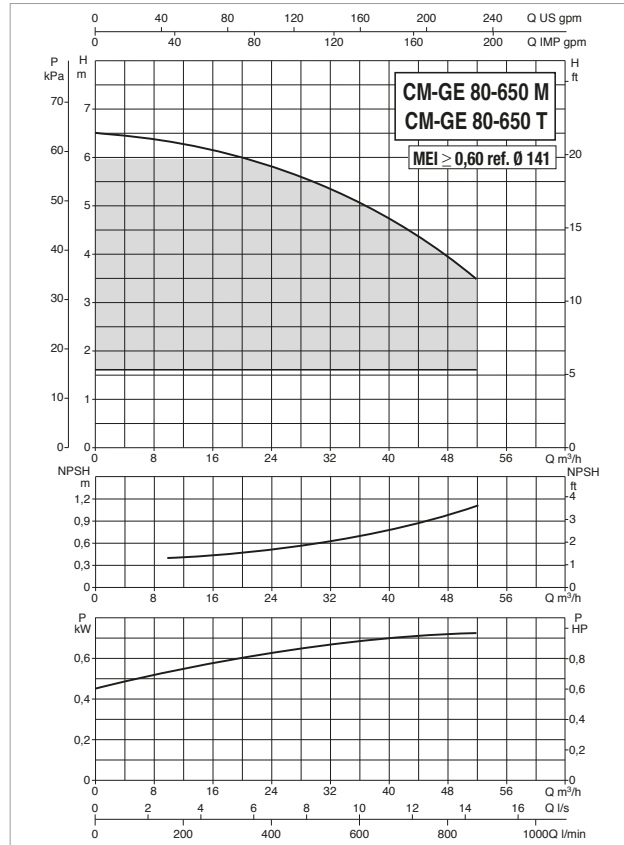
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	TYPE MOTOR	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CM-GE 65-2380/A/BAQE/ 4 T MCE30/C IE2 *	3x400 V ~	4 poles	1449	4,47	4	5,5	9,5

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m ³)	WEIGHT kg
																		L/A	L/B	H		
CM-GE 65-2380/A/BAQE/ 4 T MCE30/C IE2	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

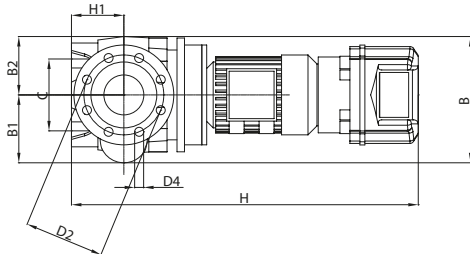
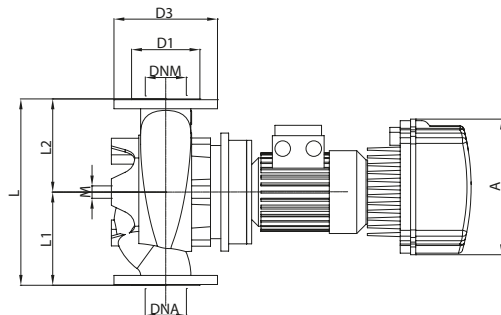
CM-GE 80 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.



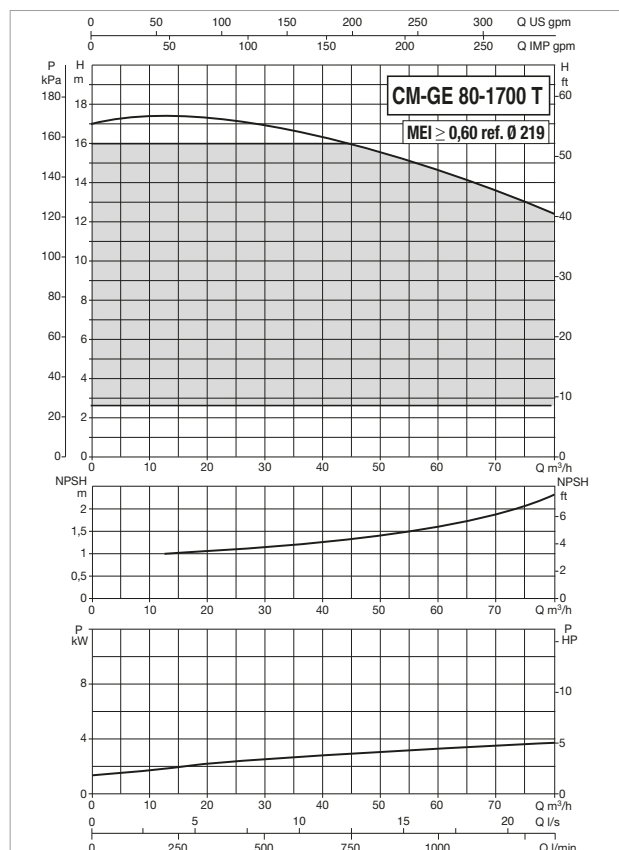
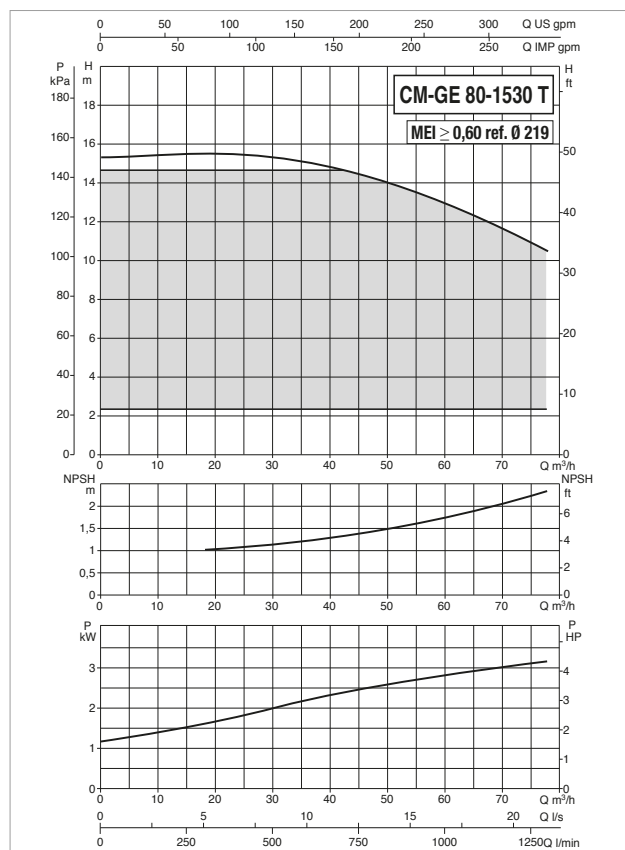
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CM-GE 80- 650/A/BAQE/ 0.75 M MCE11/C IE2 *	1x220-240 V ~	4 poles	1430	1,24	0,75	1	9,8
CM-GE 80- 650/A/BAQE/ 0.75 T MCE30/C IE2 *	3x400 V ~	4 poles	1430	1,24	0,75	1	t.b.d.
CM-GE 80- 890/A/BAQE/ 1.5 M MCE15/C IE2 *	1x220-240 V ~	4 poles	1430	2,07	1,5	2	15,2
CM-GE 80- 890/A/BAQE/ 1.5 T MCE30/C IE2 *	3x400 V ~	4 poles	1430	2,07	1,5	2	t.b.d.

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m ³)	WEIGHT kg
																		L/A	L/B	H		
CM-GE 80- 650/A/BAQE/ 0.75 M MCE11/C IE2	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 MCE30/C IE2	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- 890/A/BAQE/ 1.5 M MCE15/C IE2	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 T MCE30/C IE2	262	324	178	146	144	138	160	200	8X18	765	115	440	220	220	16	80	80	650	400	945	0,25	98

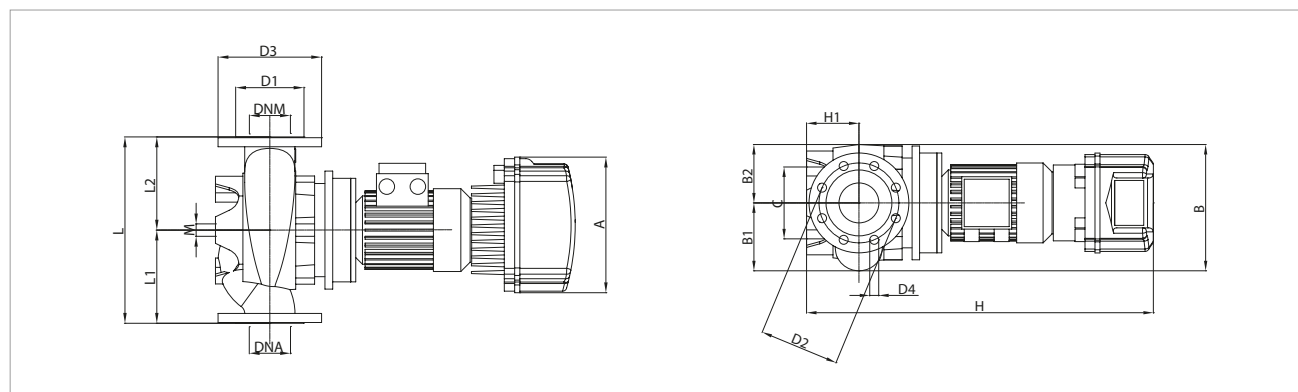
CM-GE 80 4 POLES - , ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.



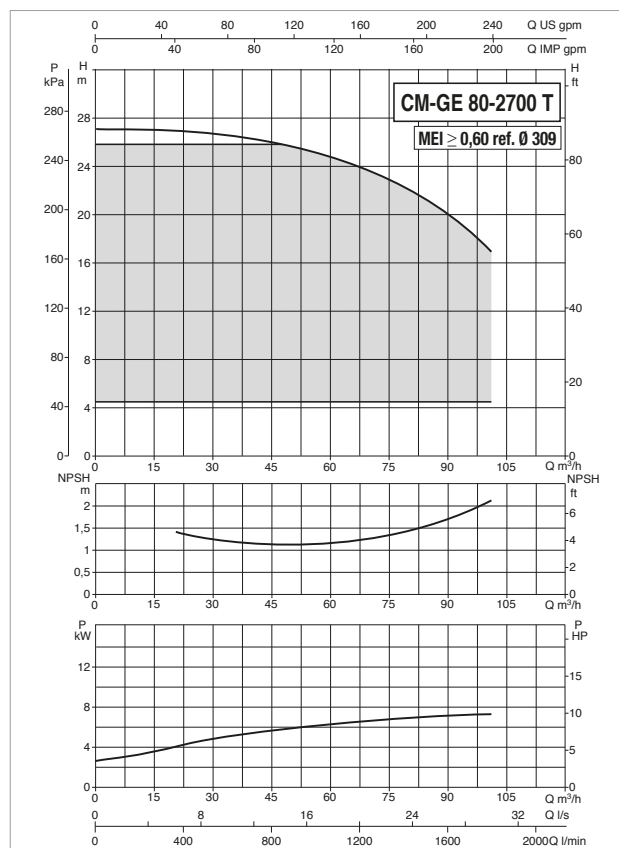
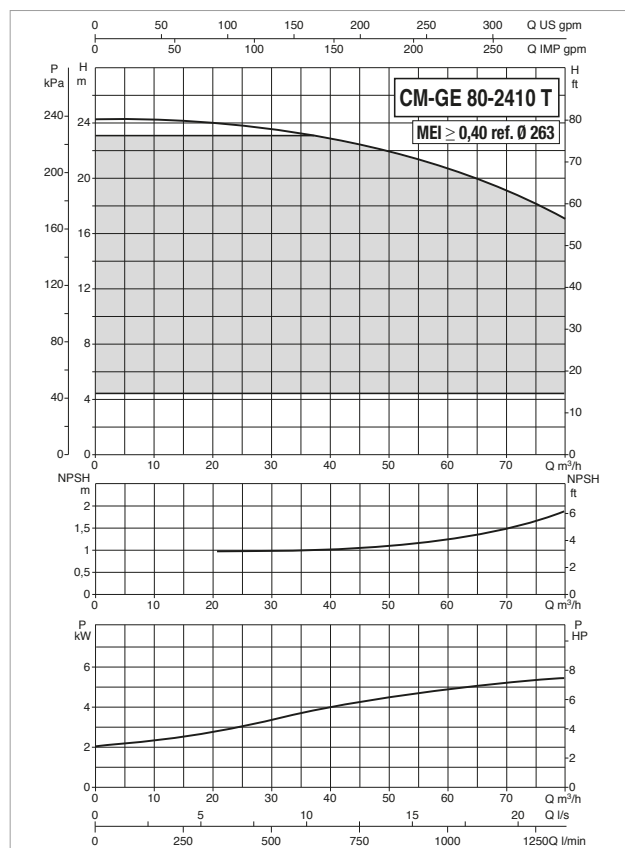
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CM-GE 80-1530/A/BAQE/ 3 T MCE30/C IE2 *	3x400 V ~	4 poles	1441	3,74	3	4	8,0
CM-GE 80-1700/A/BAQE/ 4 T MCE55/C IE2 *		4 poles	1452	4,13	4	5,5	8,9

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																		L/A	L/B	H		
CM-GE 80-1530/A/BAQE/ 3 T MCE30/C IE2	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 MCE55/C IE2	353	354	190	164	144	138	160	200	8X18	822	115	500	250	250	16	80	80	650	400	945	0,25	147

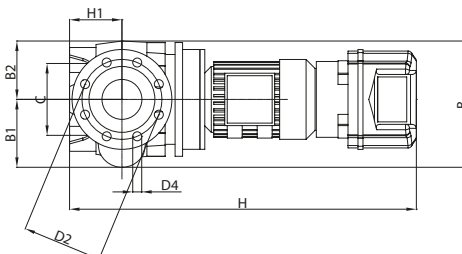
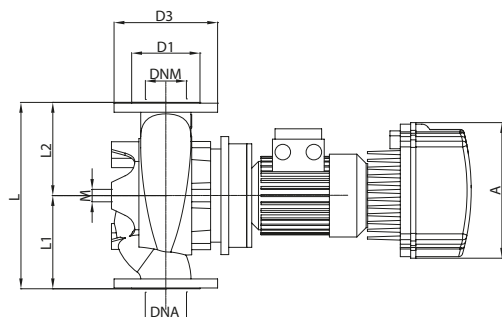
CM-GE 80 4 POLES - , ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.



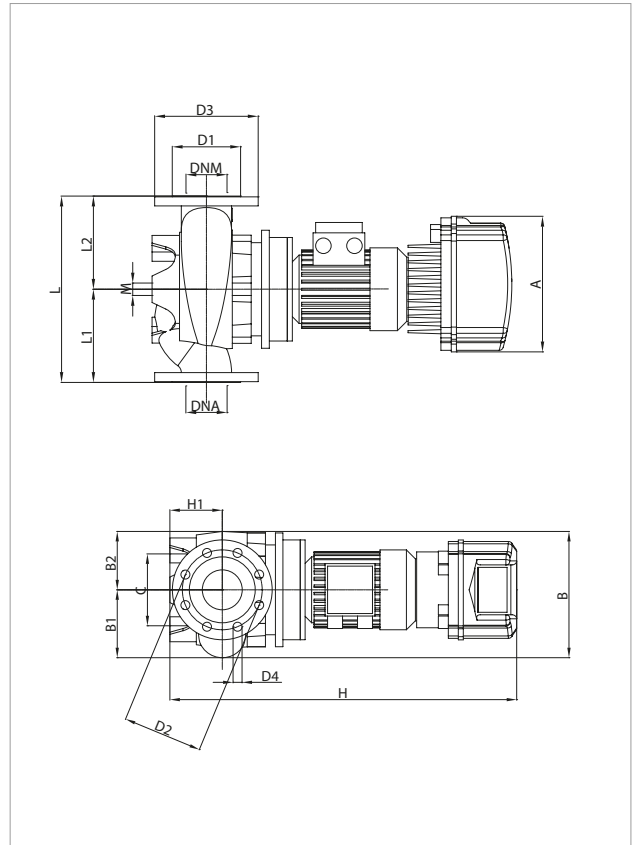
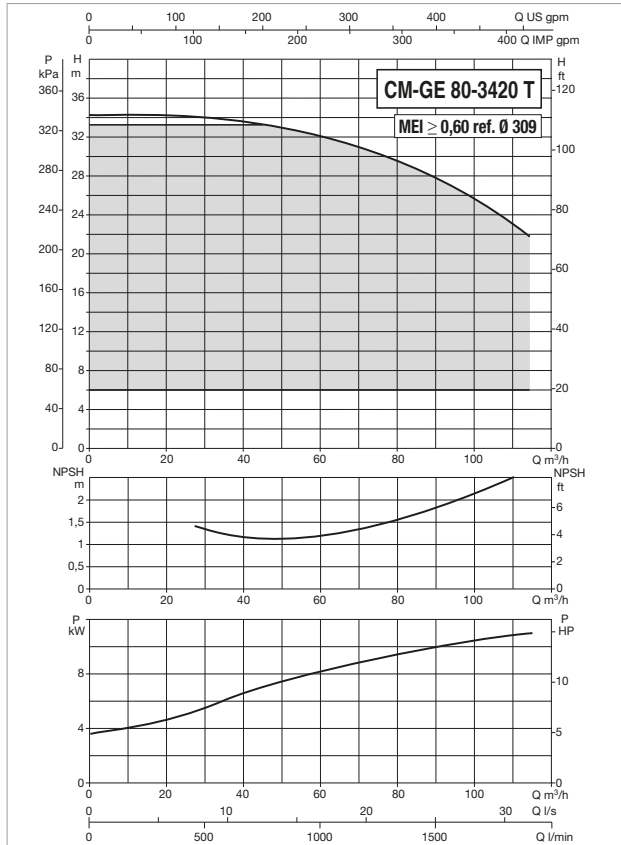
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CM-GE 80-2410/A/BAQE/ 5.5 T MCE55/C IE2 *	3x400 V ~	4 poles	1461	6,80	5,5	7,5	13,8
CM-GE 80-2700/A/BAQE/ 7.5 T MCE110/C IE2		4 poles	1463	9,15	7,5	10	18,6

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																		L/A	L/B	H		
CM-GE 80-2410/A/BAQE/ 5.5 T MCE55/C IE2	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 MCE110/C IE2	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 HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.

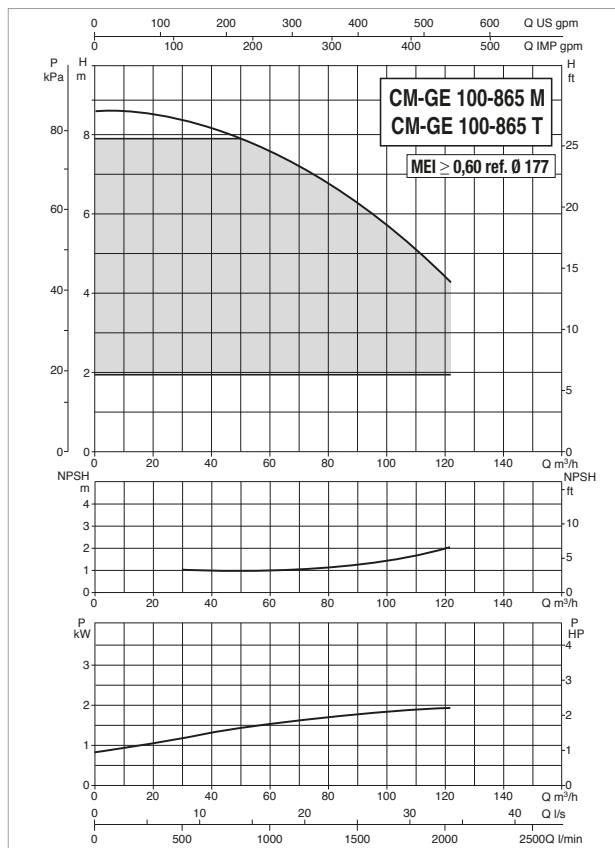
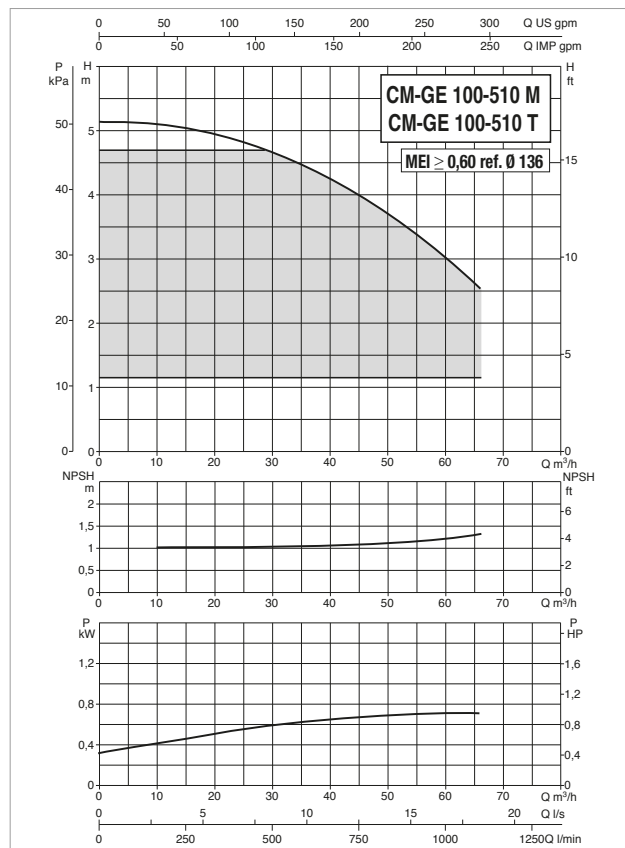
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CM-GE 80-3420/A/BAQE/ 11 T MCE110/C IE2 *	3x400 V ~	4 poles	1472	13,36	11	15	28,1

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m ³)	WEIGHT kg
																		L/A	L/B	H		
CM-GE 80-3420/A/BAQE/ 11 T MCE110/C IE2	426	469	245	224	230	138	160	200	8X18	1115	140	620	310	310	16	80	80	700	600	1220	0,51	222

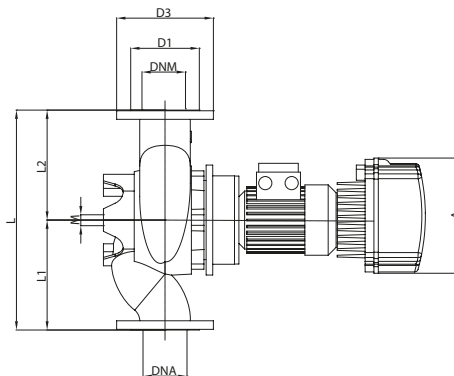
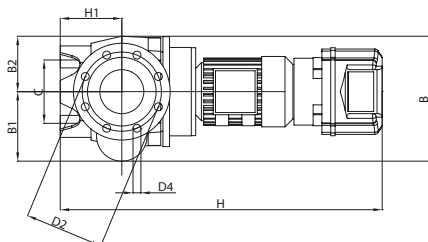
CM-GE 100 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.



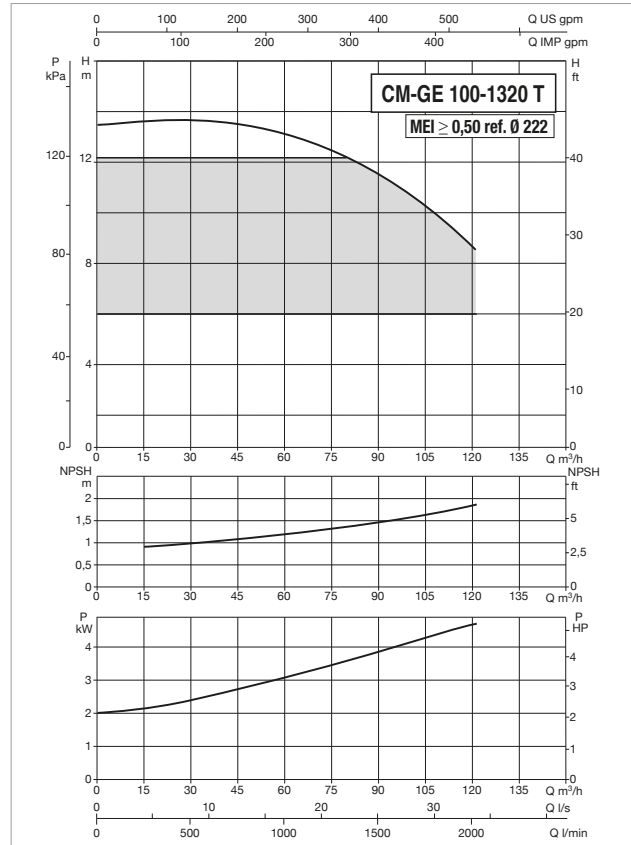
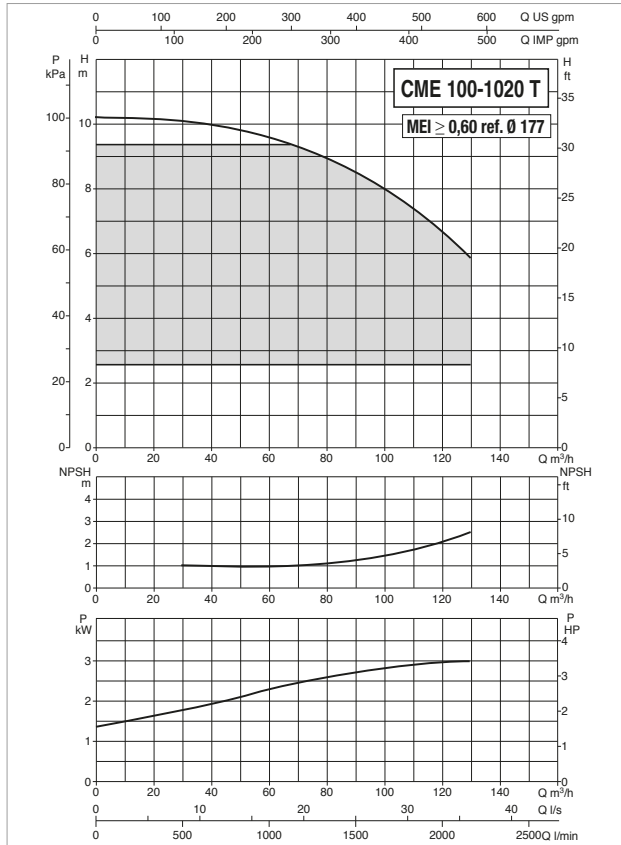
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CM-GE 100- 510/A/BAQE/ 0.75 M MCE11/C IE2 *	1x220-240 V ~	4 poles	1430	1,21	0,75	1	9,7
CM-GE 100- 510/A/BAQE/ 0.75 T MCE30/C IE2 *	3x400 V ~	4 poles	1430	1,21	0,75	1	t.b.d.
CM-GE 100- 865/A/BAQE/ 2.2 M MCE22/C IE2 *	1x220-240 V ~	4 poles	1438	2,94	2,2	3	20,7
CM-GE 100- 865/A/BAQE/ 2.2 T MCE30/C IE2 *	3x400 V ~	4 poles	1438	2,94	2,2	3	6,4

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																		L/A	L/B	H		
CM-GE 100- 510/A/BAQE/ 0.75 M MCE11/C IE2	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 MCE30/C IE2	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- 865/A/BAQE/ 2.2 M MCE22/C IE2	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 MCE30/C IE2	353	215	192	152	230	158	180	220	8x20	862	140	550	275	275	16	100	100	650	400	945	0,25	126

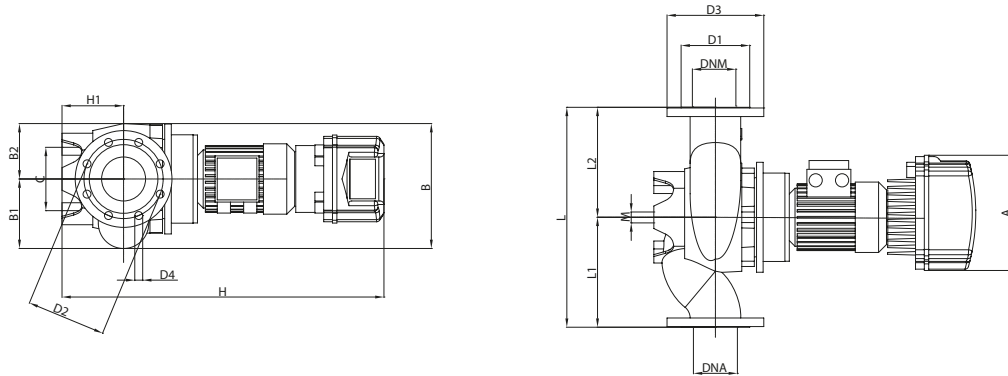
CM-GE 100 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.



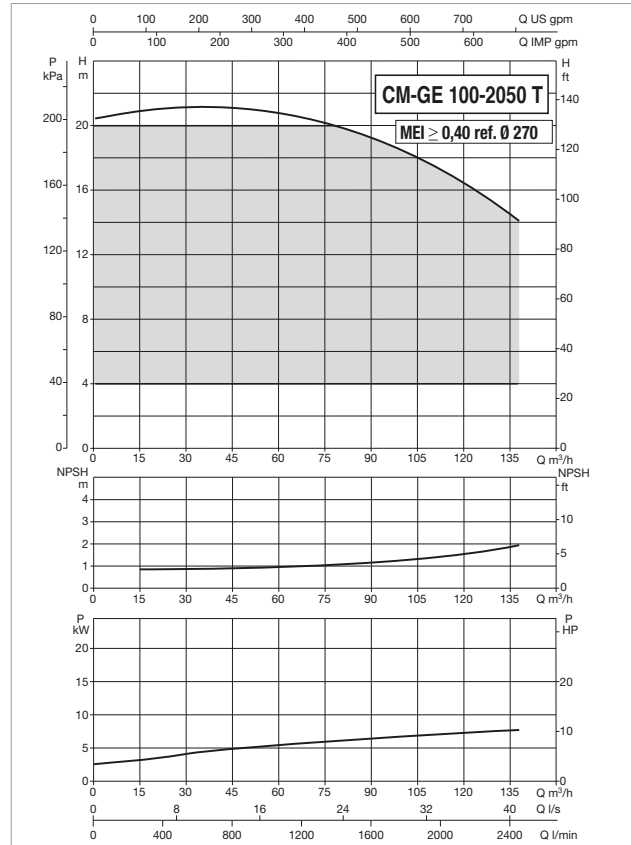
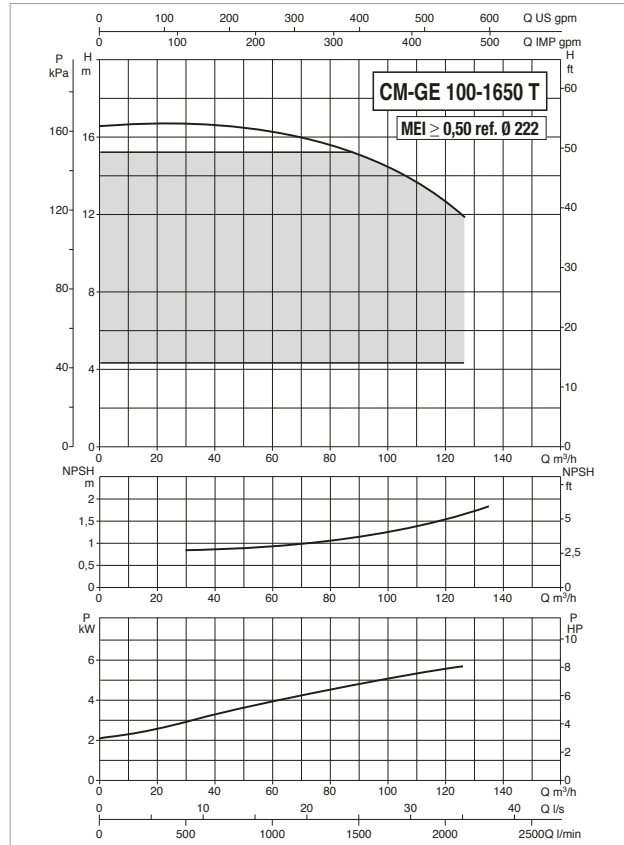
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CM-GE 100-1020/A/BAQE/ 3 T MCE30/C IE2 *	3x400 V ~	4 poles	1441	3,77	3	4	8,1
CM-GE 100-1320/A/BAQE/4 T MCE55/C IE2 *		4 poles	1450	4,81	4	5,5	10

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																		L/A	L/B	H		
CM-GE 100-1020/A/BAQE/ 3 T MCE30/C IE2	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 MCE55/C IE2	353	378	204	174	230	158	180	220	8x18	881	140	550	275	275	16	100	100	650	400	945	0,25	150

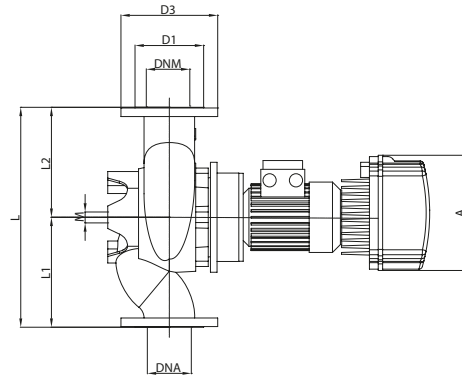
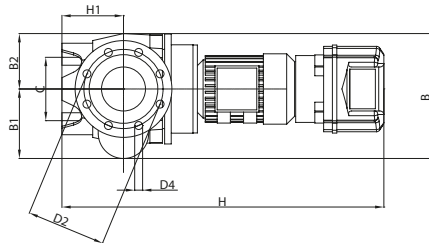
CM-GE 100 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.



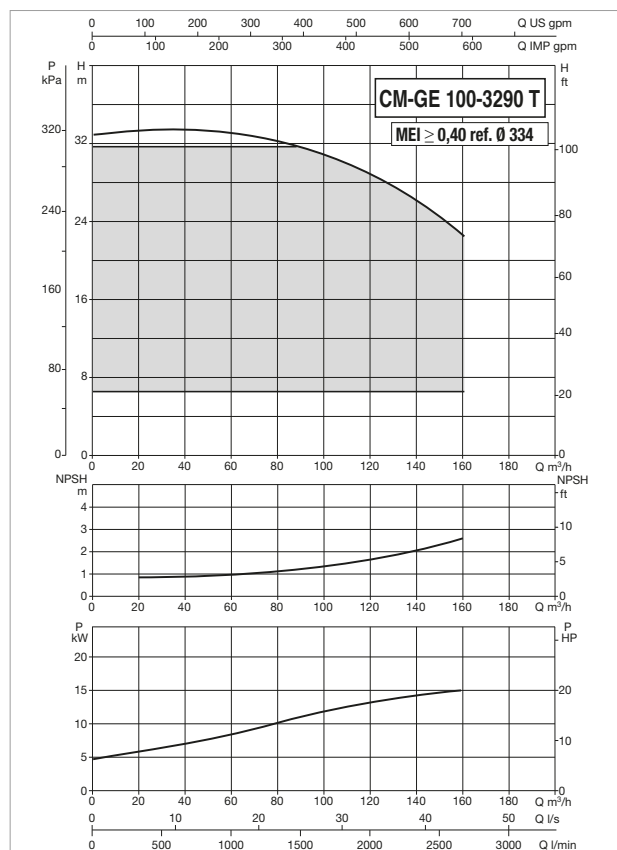
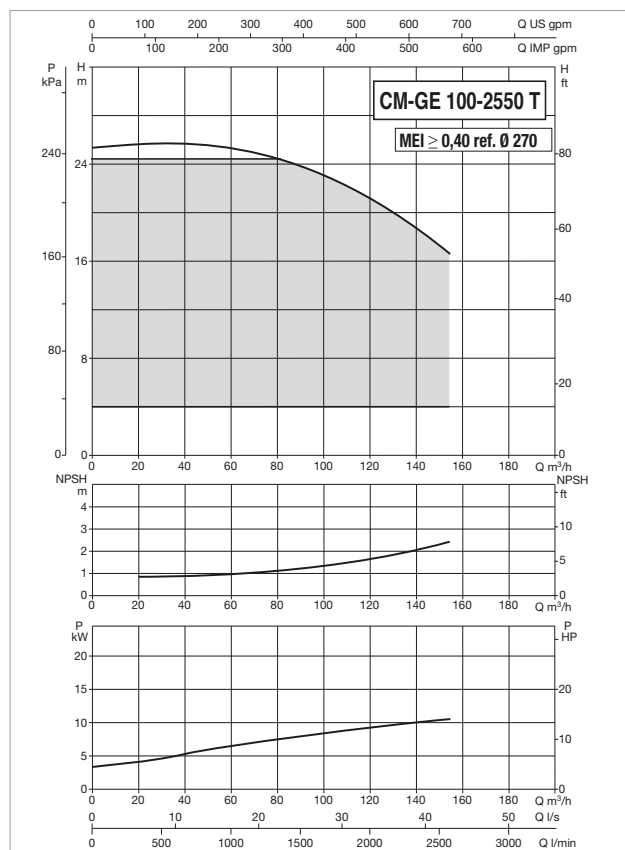
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CM-GE 100-1650/A/BAQE/ 5.5 T MCE55/C IE2 *	3x400 V ~	4 poles	1464	7,27	5,5	7,5	14,6
CM-GE 100-2050/A/BAQE/ 7.5 T MCE110/C IE2		4 poles	1461	8,89	7,5	10	18,1

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m ³)	WEIGHT kg
																		L/A	L/B	H		
CM-GE 100-1650/A/BAQE/ 5.5 T MCE55/C IE2	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 MCE110/C IE2	426	545	293	252	230	158	180	220	8x18	1155	175	670	335	335	16	100	100	700	600	1220	0,51	252

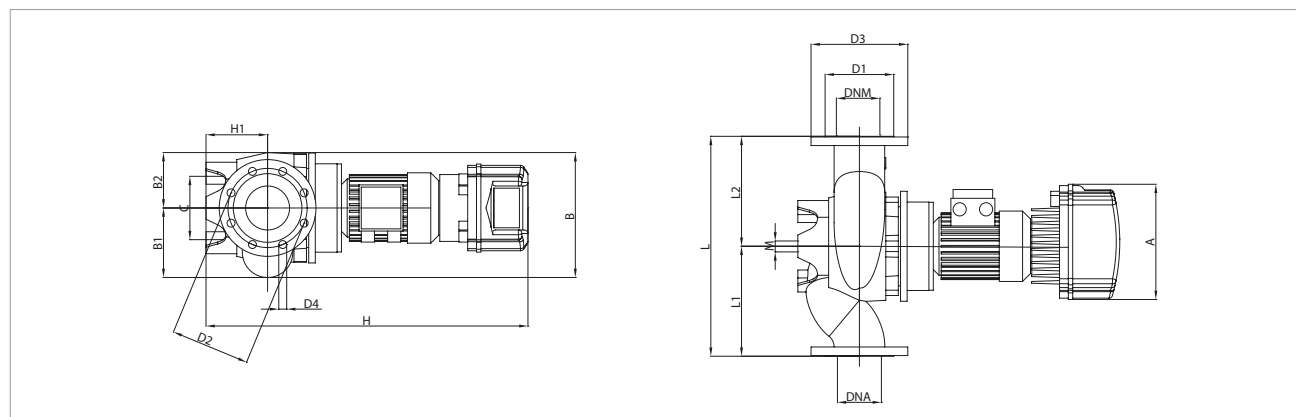
CM-GE 100 4 POLES - , ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.



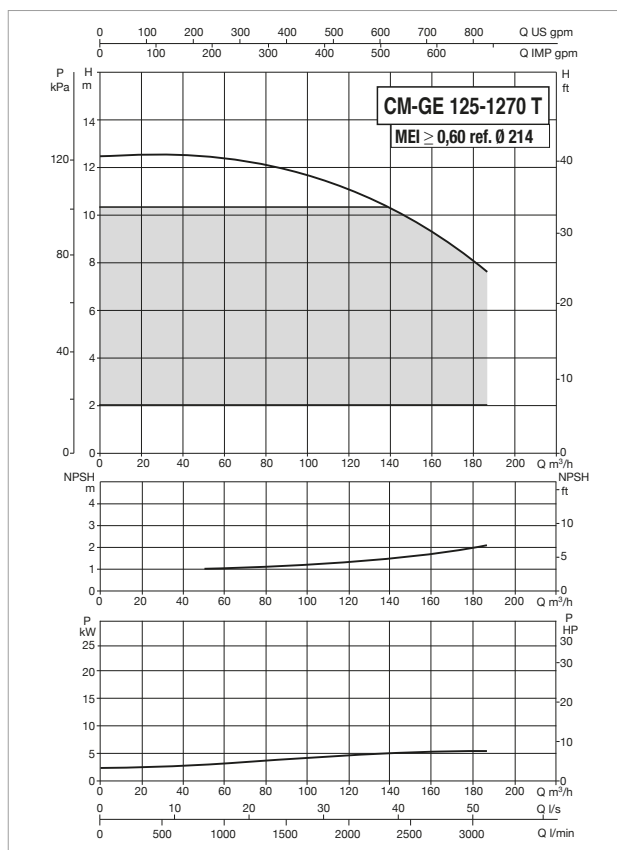
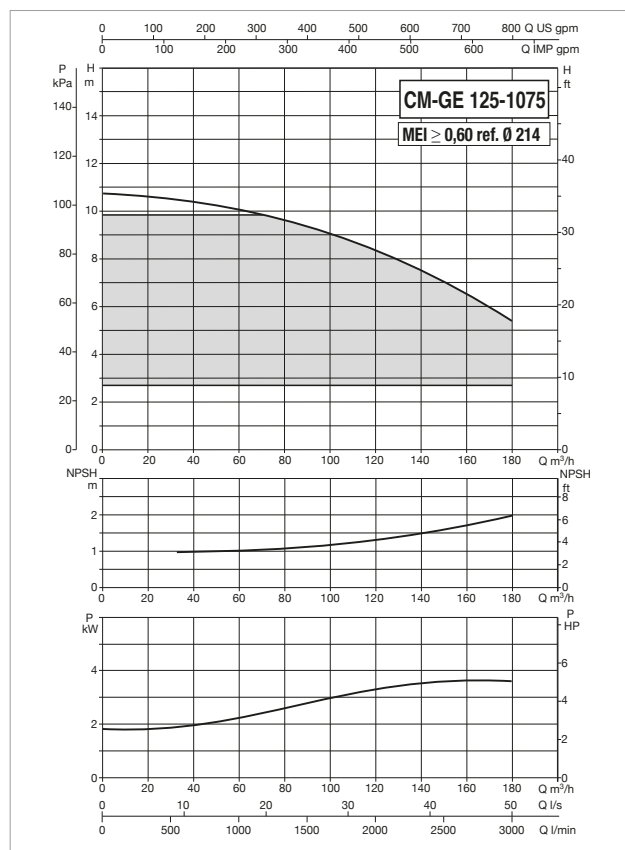
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CM-GE 100-2550/A/BAQE/ 11 T MCE110/C IE2 *	3x400 V ~	4 poles	1470	12,74	11	15	27
CM-GE 100-3290/A/BAQE/ 15 T MCE150/C IE2		4 poles	1471	17,91	15	20	37,1

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																		L/A	L/B	H		
CM-GE 100-2550/A/BAQE/ 11 T MCE110/C IE2	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 MCE150/C IE2	426	545	293	252	230	158	180	220	8x18	1357	175	670	335	335	16	100	100	900	550	1200	0,51	350

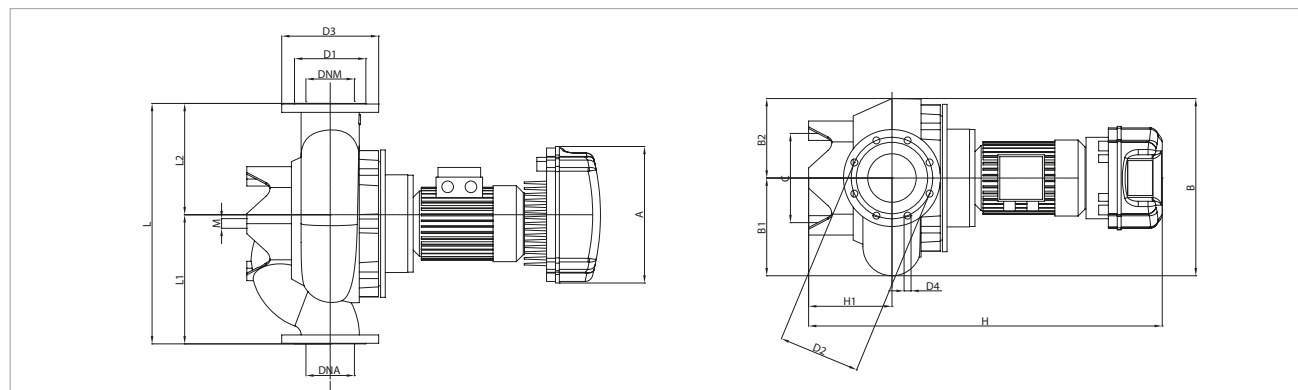
CM-GE 125 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.



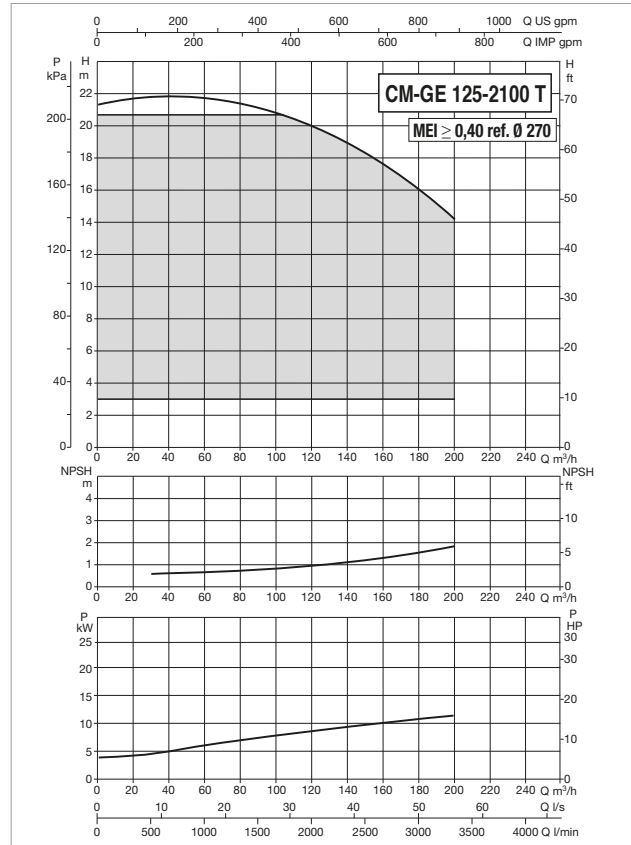
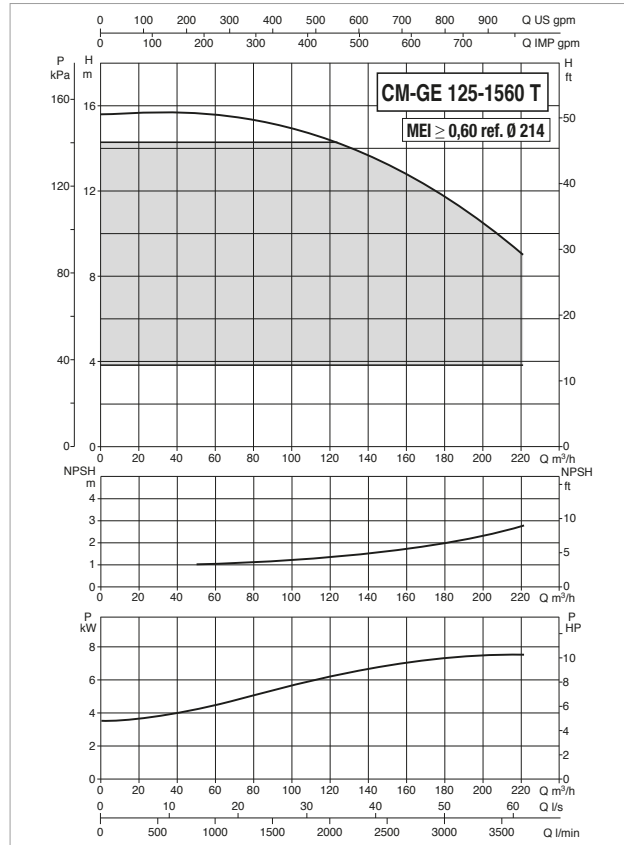
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CM-GE 125-1075/A/BAQE/ 4 T MCE55/C IE2	3x400 V ~	4 poles	1455	5,38	4	5,5	11
CM-GE 125-1270/A/BAQE/ 5.5 T MCE55/C IE2 *		4 poles	1465	7,55	5,5	7,5	15,2

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																		L/A	L/B	H		
CM-GE 125-1075/A/BAQE/ 4 T MCE55/C IE2	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 MCE55/C IE2	353	457	252	205	230	188	210	250	8X18	1101	215	620	310	310	16	125	125	700	600	1220	0,51	209

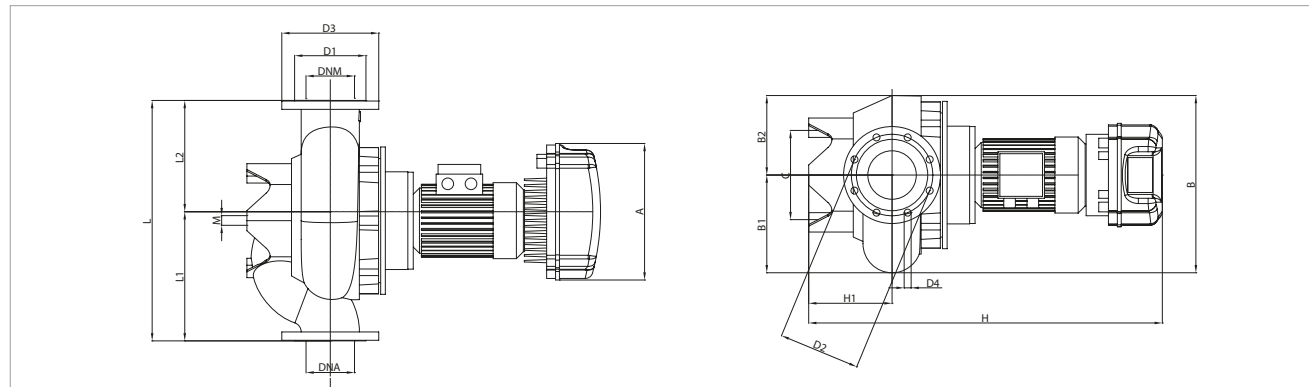
CM-GE 125 4 POLES - , ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.



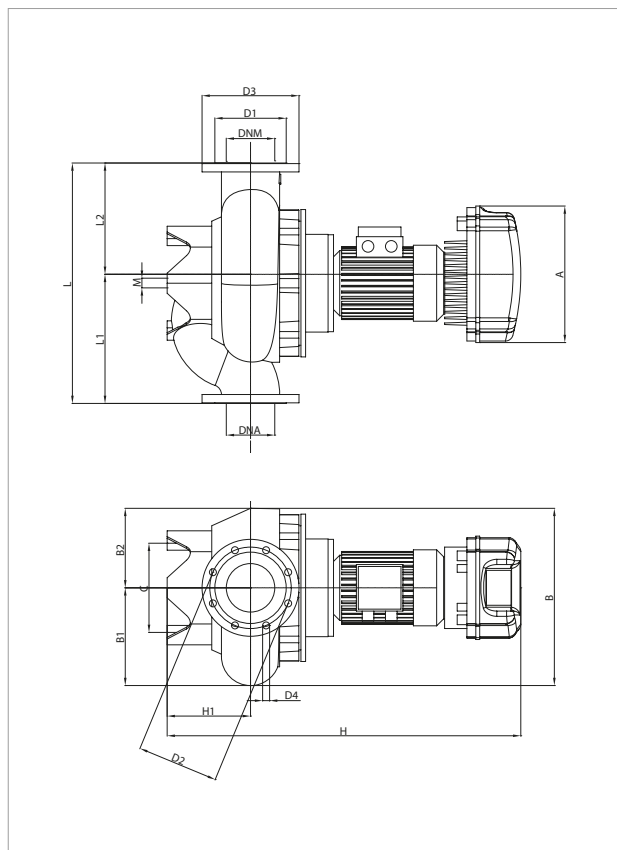
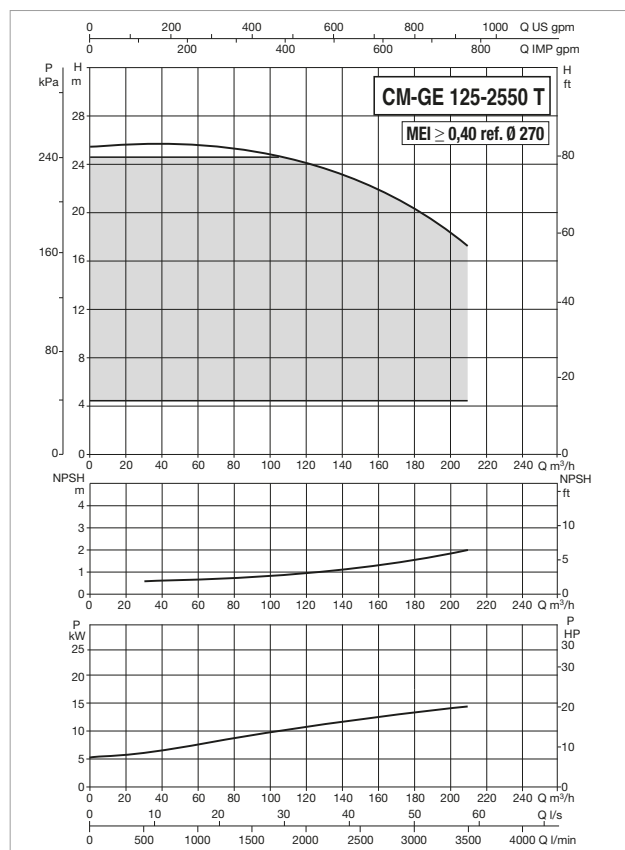
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CM-GE 125-1560/A/BAQE/ 7.5 T MCE110/C IE2 *	3x400 V ~	4 poles	1469	9,93	7,5	10	20,0
CM-GE 125-2100/A/BAQE/ 11 T MCE110/C IE2		4 poles	1475	14,30	11	15	29,8

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
	L/A	L/B	H																			
CM-GE 125-1560/A/BAQE/ 7.5 T MCE110/C IE2	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 MCE110/C IE2	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 HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.

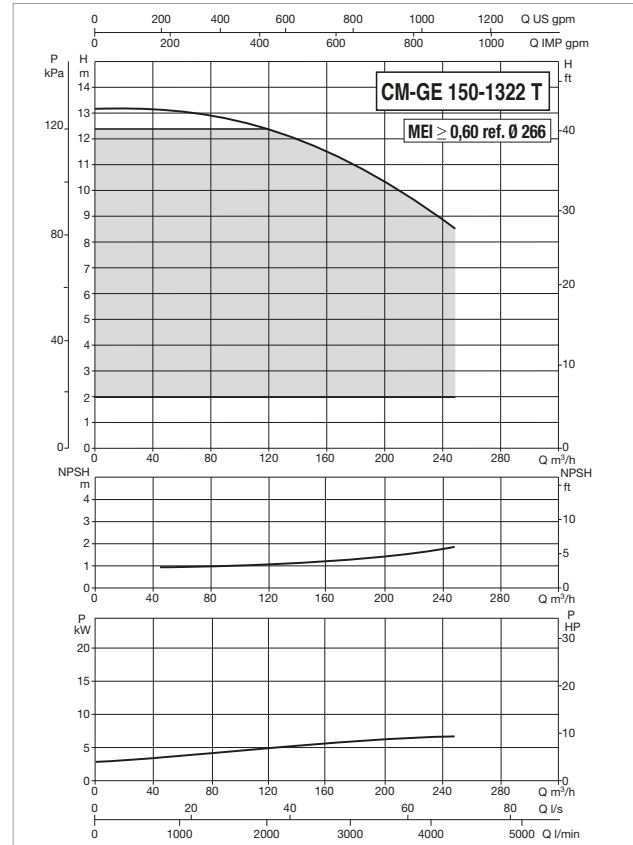
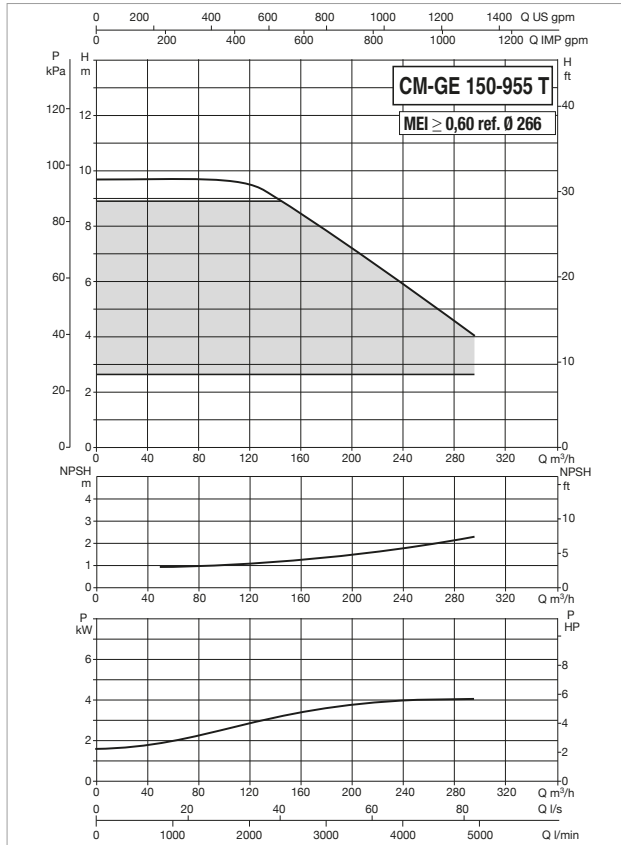
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CM-GE 125-2550/A/BAQE/ 15 T MCE150/C IE2 *	3x400 V ~	4 poles	1470	17,07	15	20	35,6

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m ³)	WEIGHT kg
																		L/A	L/B	H		
CM-GE 125-2550/A/BAQE/ 15 T MCE150/C IE2	426	519	274	245	230	188	210	250	8X18	1407	215	800	400	400	16	125	125	900	550	1200	0,59	363

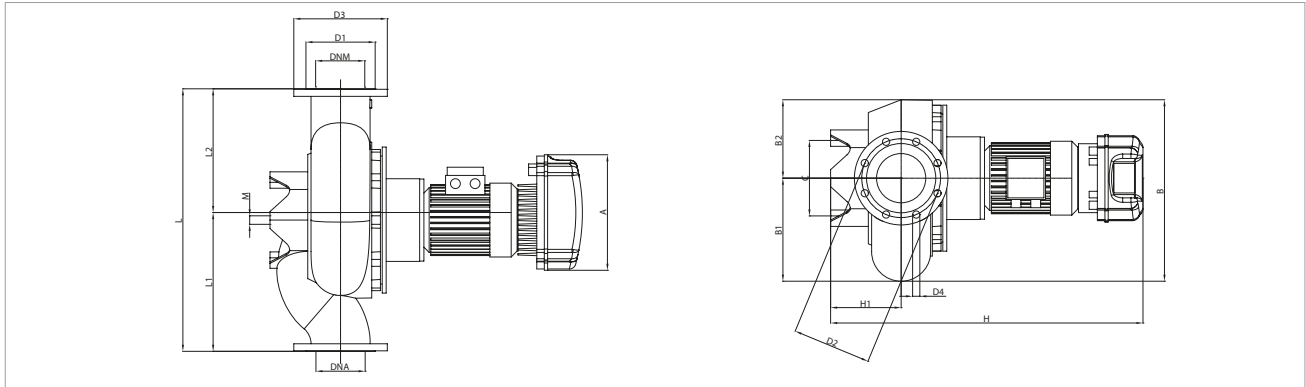
CM-GE 150 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.

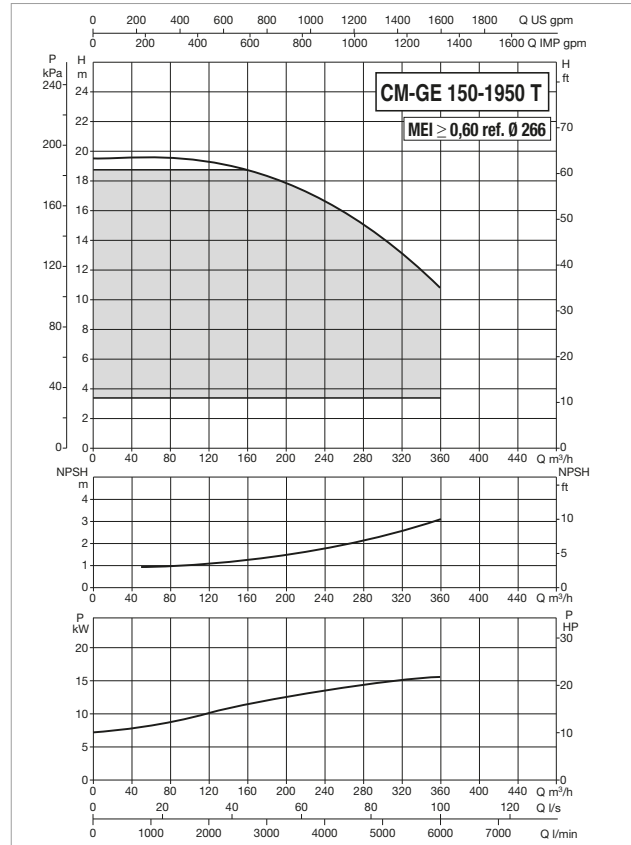
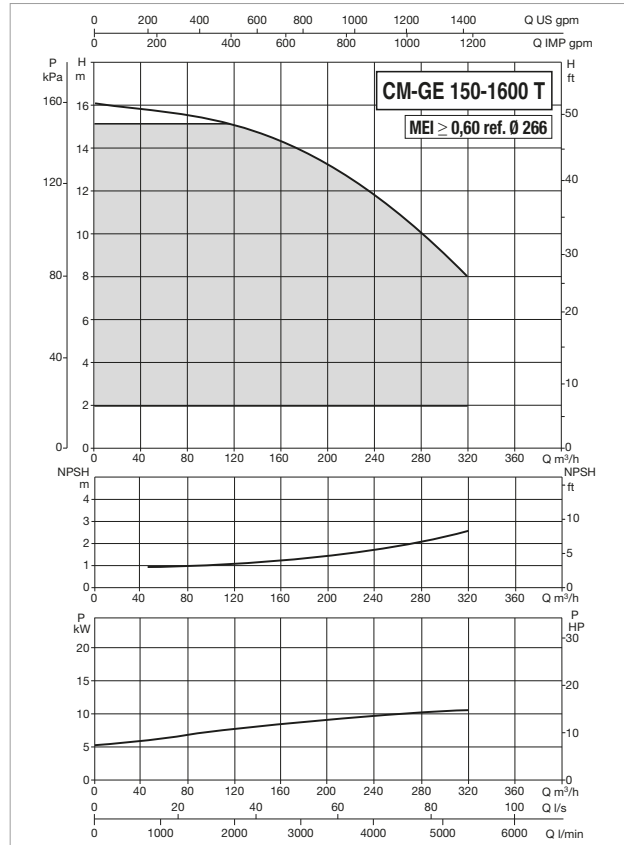


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CM-GE 150- 955/A/BAQE/ 5.5 T MCE55/C IE2	3x400 V ~	4 poles	1462	7,90	5,5	7,5	15,8
CM-GE 150-1322/A/BAQE/ 7.5 T MCE110/C IE2		4 poles	1464	9,37	7,5	10	19

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																		L/A	L/B	H		
CM-GE 150- 955/A/BAQE/ 5.5 T MCE55/C IE2	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 MCE110/C IE2	426	538	299	239	230	212	240	285	8X22	1208	215	800	400	400	16	150	150	900	550	1200	0,59	294

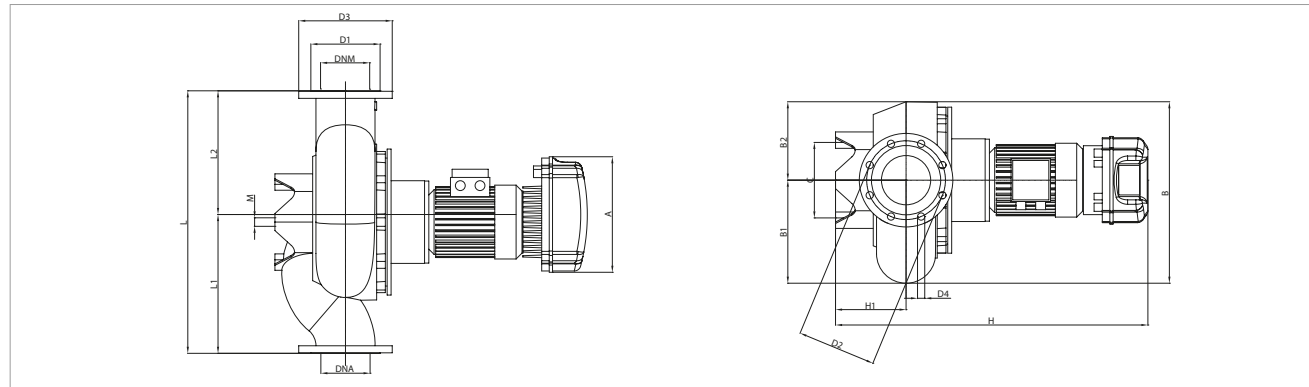
CM-GE 150 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.



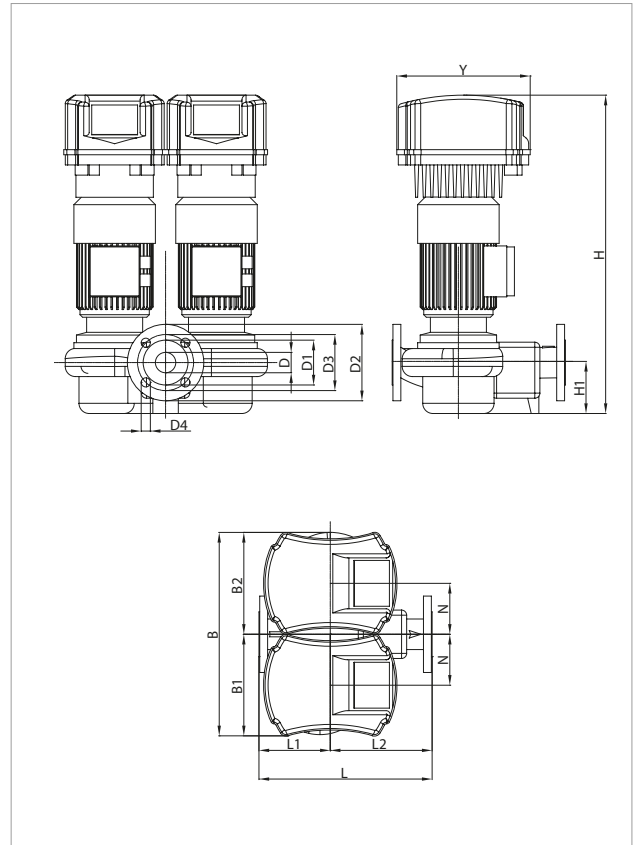
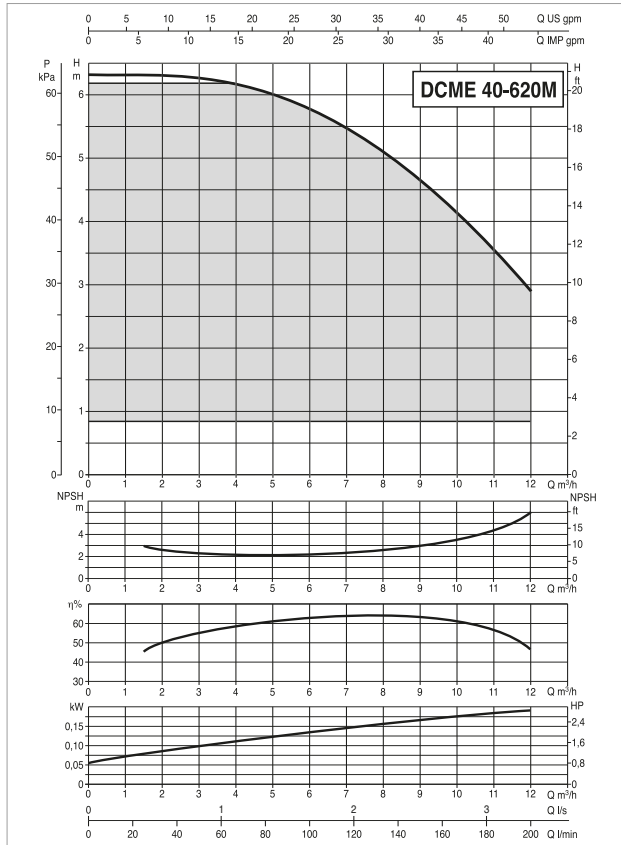
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CM-GE 150-1600/A/BAQE/ 11 T MCE110/C IE2	3x400 V ~	4 poles	1473	13,61	11	15	28,6
CM-GE 150-1950/A/BAQE/ 15 T MCE150/C IE2 *		4 poles	1472	18,39	15	20	38

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m ³)	WEIGHT kg
																		L/A	L/B	H		
CM-GE 150-1600/A/BAQE/ 11 T MCE110/C IE2	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 MCE150/C IE2	426	538	299	239	230	212	240	285	8X22	1411	215	800	400	400	16	150	150	900	550	1500	0,74	356

DCME 40 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -10 °C to +130°C - Maximum ambient temperature: +40°C



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

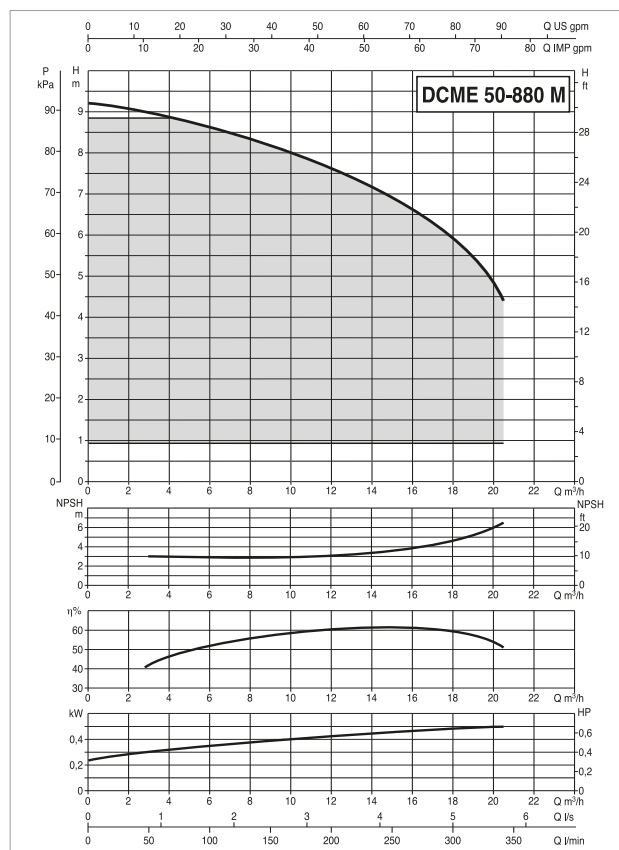
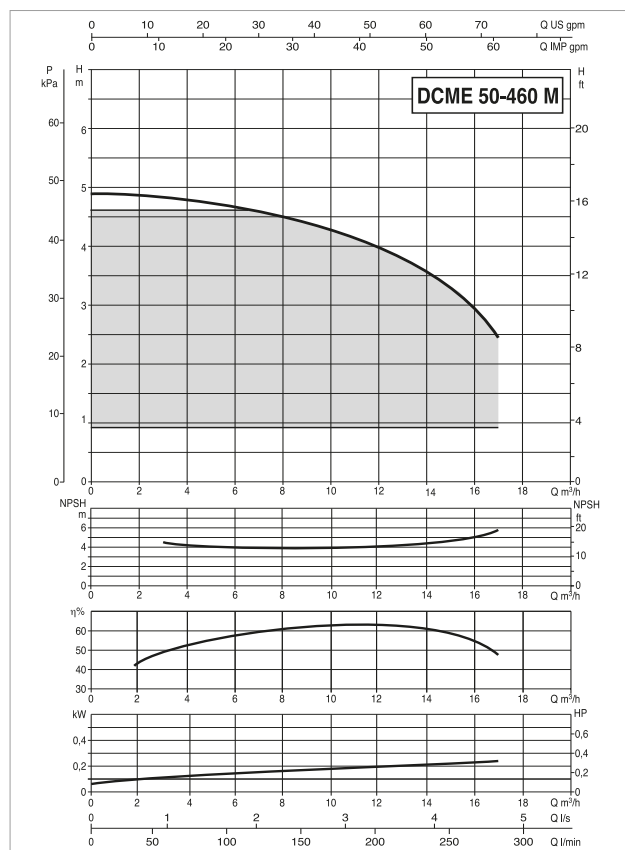
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCME 40-620 M MCE11/C	1x220 - 240 V ~	4 poles	1450	0.43	0,25	0,33	4,7

MODEL	L	L1	L2	B	B1	B2	H	H1	N	D	D1	D2	D3	D4	Y	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																L/A	L/B	H		
DCME 40-620 M MCE11/C	340	130	210	400	200	200	625	100	100	40 PN16	88	150	110	4 HOLES Ø18	262	520	400	710	0,15	45

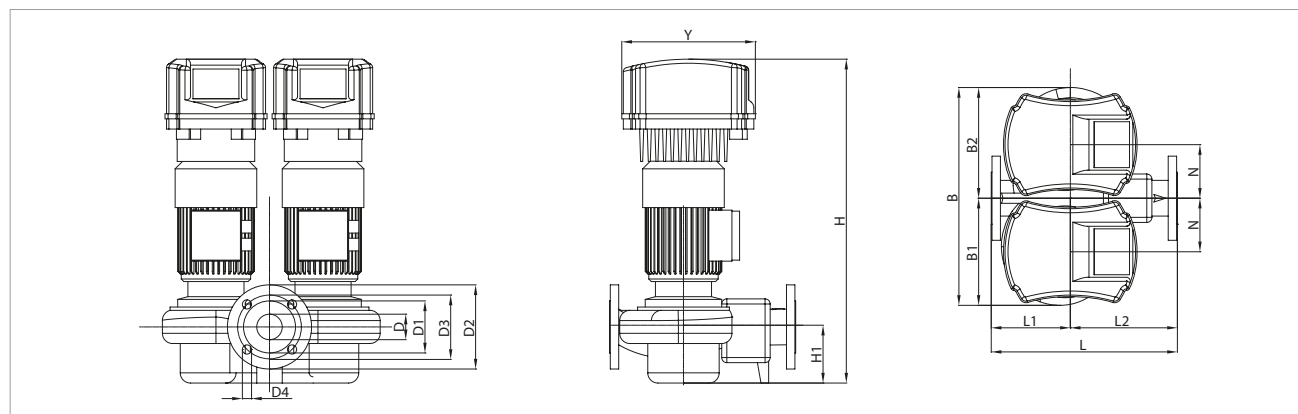
DCME 50 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -10 °C to +130°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.

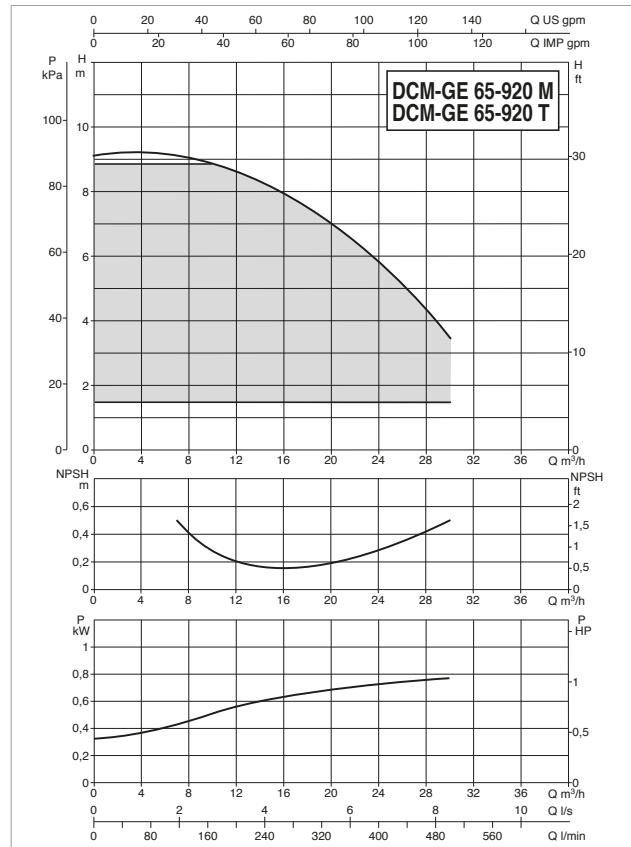
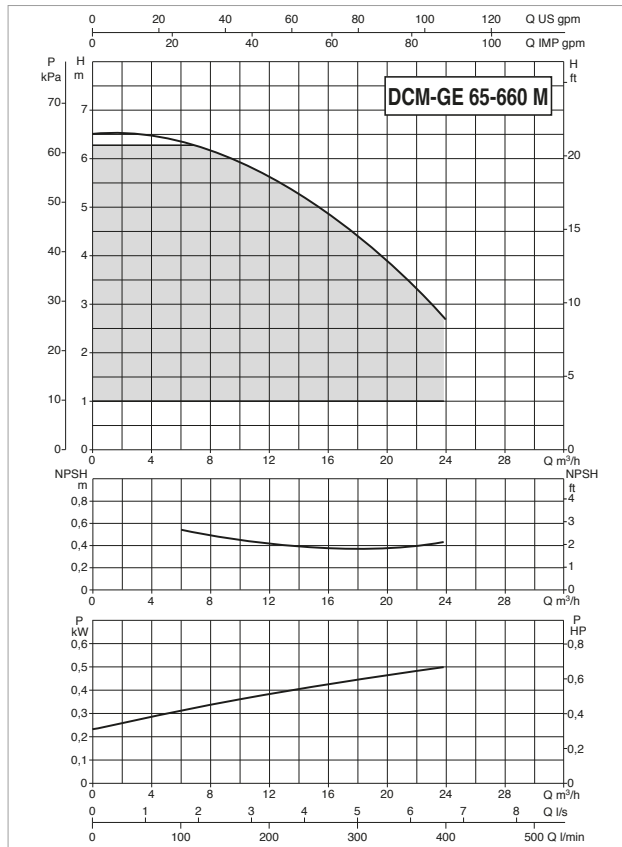


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCME 50-460 M MCE11/C IE2	1x220 - 240 V ~	4 poles	1450	0,43	0,25	0,33	4,7
DCME 50-880 M MCE11/C IE2		4 poles	1450	0,83	0,5	0,67	7,2

MODEL	L	L1	L2	B	B1	B2	H	H1	N	D	D1	D2	D3	D4	Y	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																L/A	L/B	H		
DCME 50-460 M MCE11/C IE2	365	145	220	427	217	210	635	110	105	50 PN16	102	165	125	4 HOLES Ø18	262	520	400	710	0,15	50
DCME 50-880 M MCE11/C IE2	410	170	240	480	235	245	635	110	105	50 PN16	102	165	125	4 HOLES Ø18	262	520	400	710	0,15	56

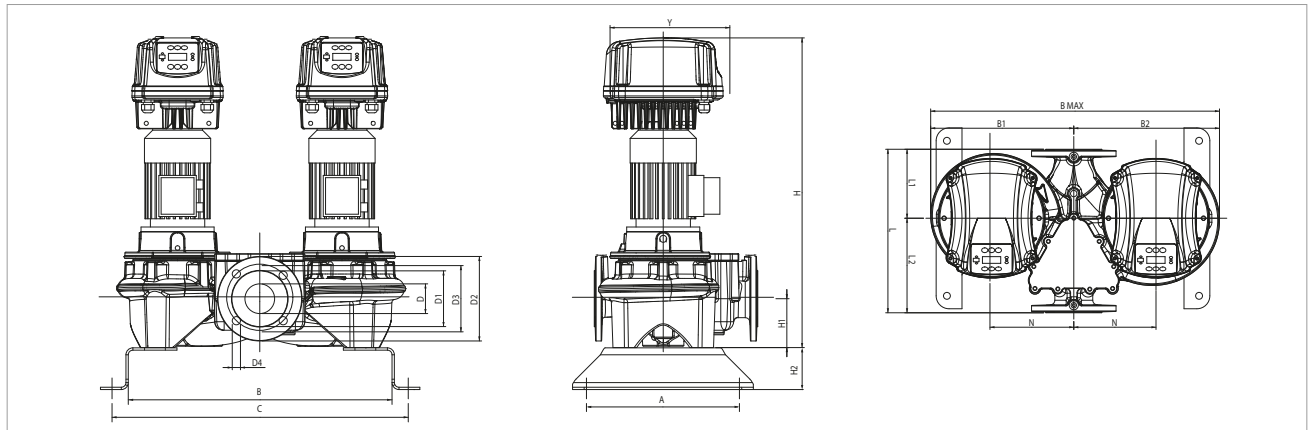
DCM-GE 65 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



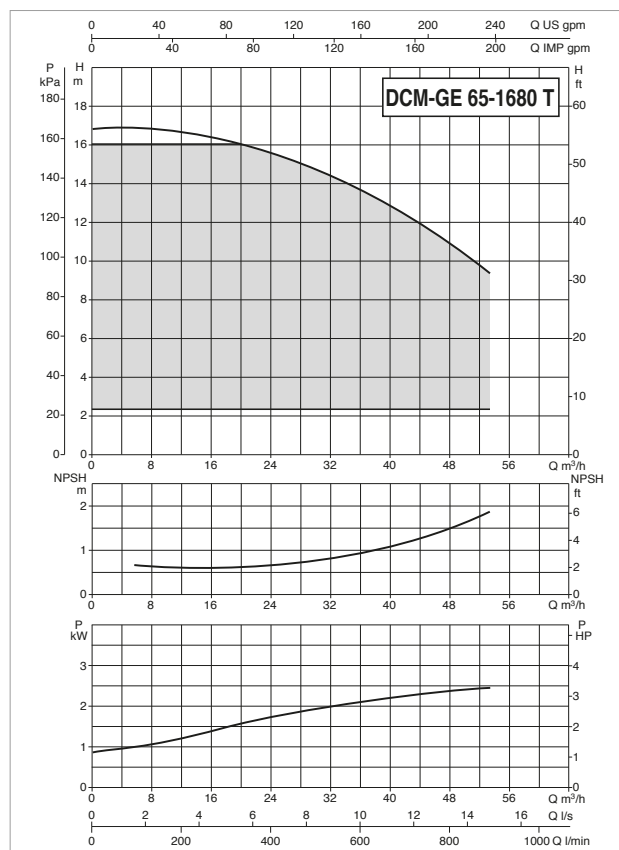
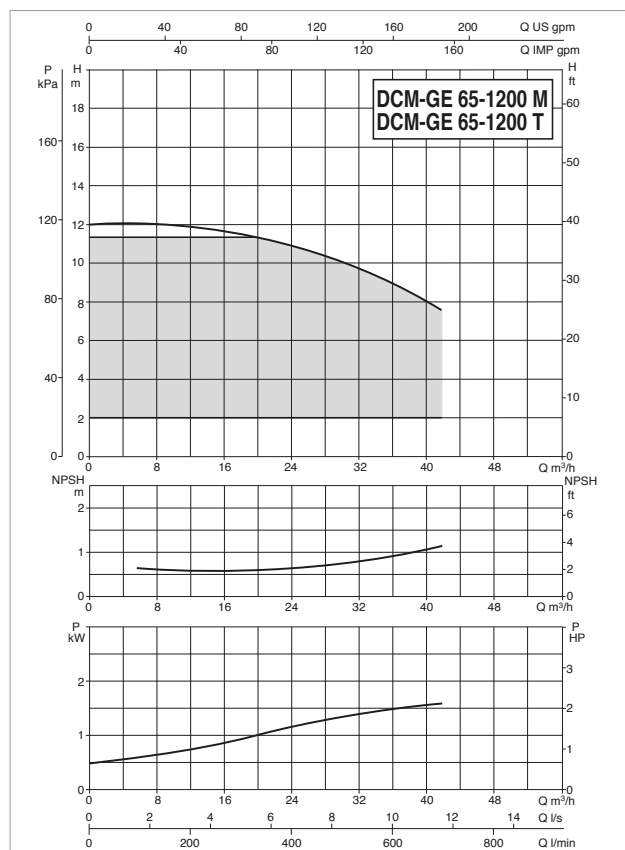
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCME-GE 65- 660/A/BAQE/ 0.55 M MCE11/C IE2 *	1x220-240 V ~	4 poles	1400	0,84	0,55	0,8	7,3
DCM-GE 65- 920/A/BAQE/ 0.75 M MCE11/C IE2 *		4 poles	1430	1,23	0,75	1	9,8
DCM-GE 65- 920/A/BAQE/ 0.75 T MCE30/C IE2 *	3x400 V ~	4 poles	1430	1,23	0,75	1	t.b.d.

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
	L/A	L/B	H																						
DCM-GE 65- 660/A/BAQE/ 0.55 M MCE11/C IE2	330	569	639	315	320	635	122	185	145	18	4	262	733	107	100	358	151	207	M16	180	358	635	733	0,17	141
DCM-GE 65- 920/A/BAQE/ 0.75 M MCE11/C IE2	330	569	639	315	320	635	122	185	145	18		262	733	107	100	358	151	207	M16	180	358	635	733	0,17	144
DCM-GE 65- 920/A/BAQE/ 0.75 T MCE30/C IE2	330	569	639	315	320	635	122	185	145	18		262	730	107	100	358	151	207	M16	180	358	635	730	0,17	146

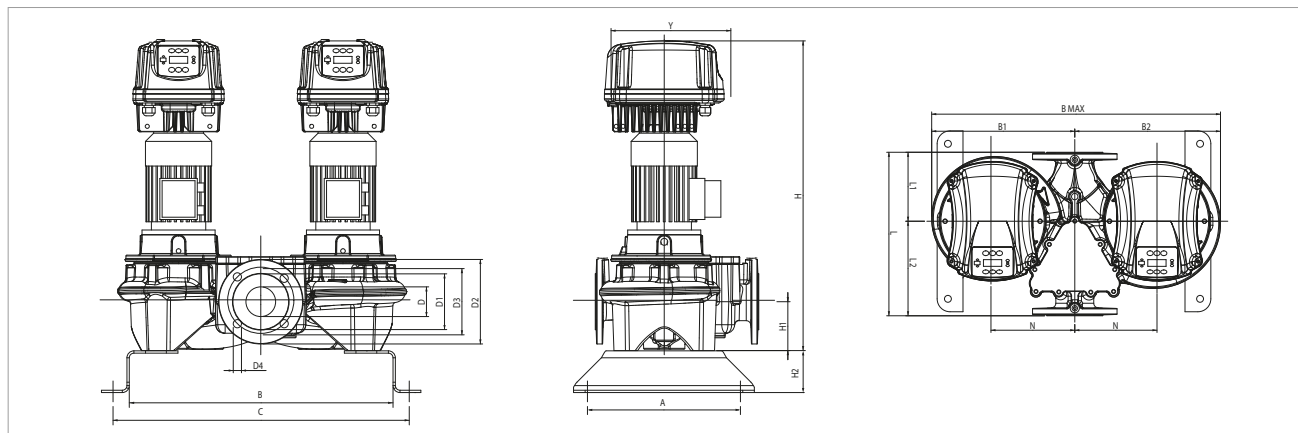
DCM-GE 65 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



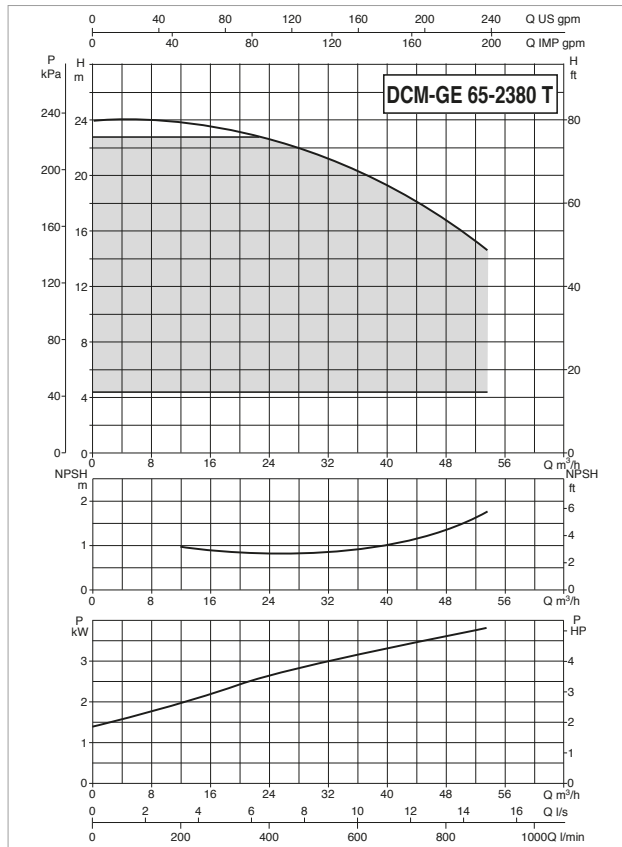
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCM-GE 65-1200/A/BAQE/ 1.5 M MCE11/C IE2 *	1x220-240 V ~	4 poles	1430	2,10	1,5	2	15,4
DCM-GE 65-1200/A/BAQE/ 1.5 T MCE30/C IE2 *	3x400 V ~	4 poles	1430	2,10	1,5	2	t.b.d.
DCM-GE 65-1680/A/BAQE/ 3 T MCE30/C IE2 *		4 poles	1448	2,83	3	4	6,6

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
	L/A	L/B	H																						
DCM-GE 65-1200/A/BAQE/ 1.5 M MCE11/C IE2	330	649	719	387	395	782	122	185	145	18	4	262	821	125	100	475	177	298	M16	220	475	782	821	0,30	195
DCM-GE 65-1200/A/BAQE/ 1.5 T MCE30/C IE2	330	649	719	387	395	782	122	185	145	18		262	824	125	100	475	177	298	M16	220	475	782	824	0,31	193
DCM-GE 65-1680/A/BAQE/ 3 T MCE30/C IE2	330	649	719	387	395	782	122	185	145	18		352	840	125	100	475	177	298	M16	220	475	782	840	0,31	206

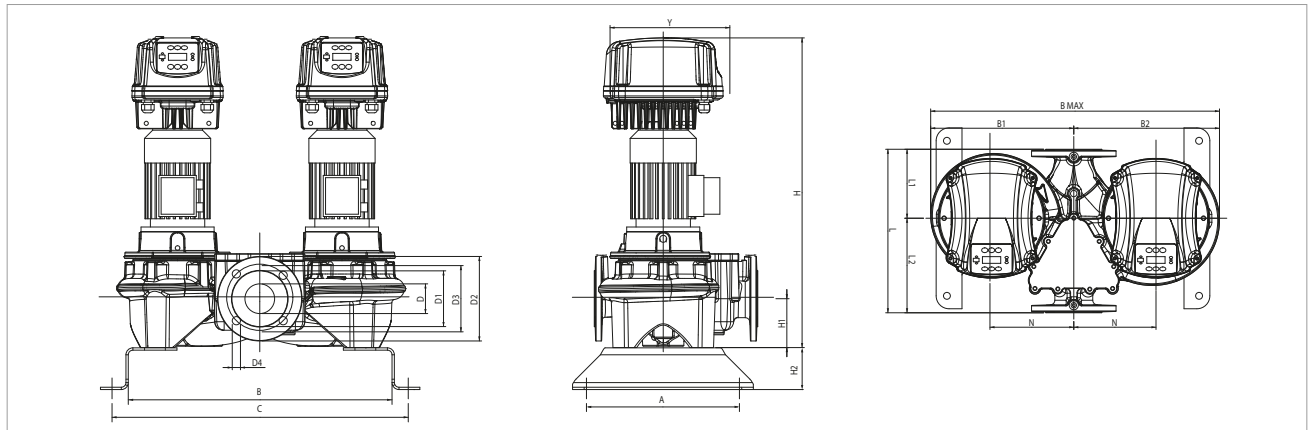
DCM-GE 65 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



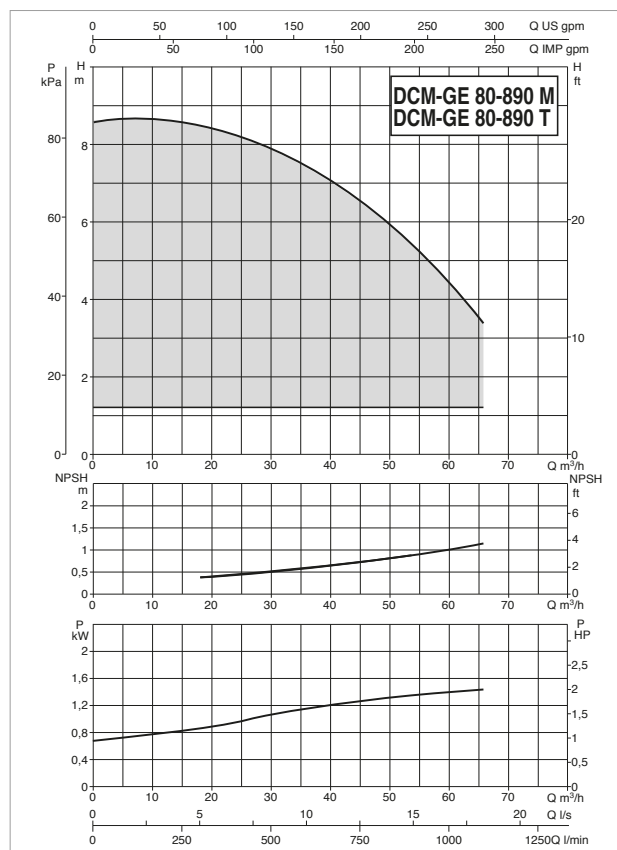
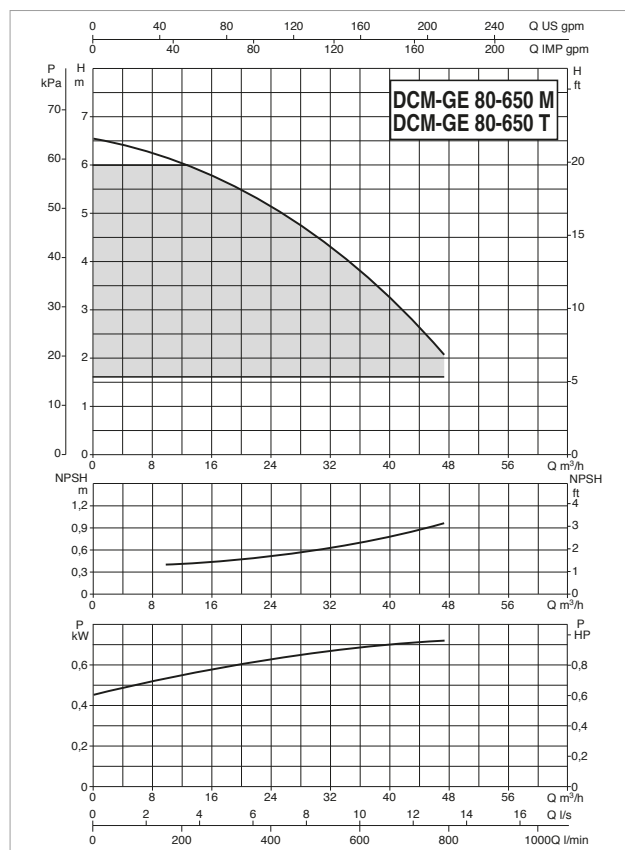
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCM-GE 65-2380/A/BAQE/ 4 T MCE30/C IE2 *	3x400 V ~	4 poles	1449	4,47	4	5,5	9,5

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
	L/A	L/B	H																						
DCM-GE 65-2380/A/BAQE/ 4 T MCE30/C IE2	330	649	719	387	395	782	122	185	145	18	4	352	925	125	100	475	177	298	M16	220	475	782	925	0,34	233

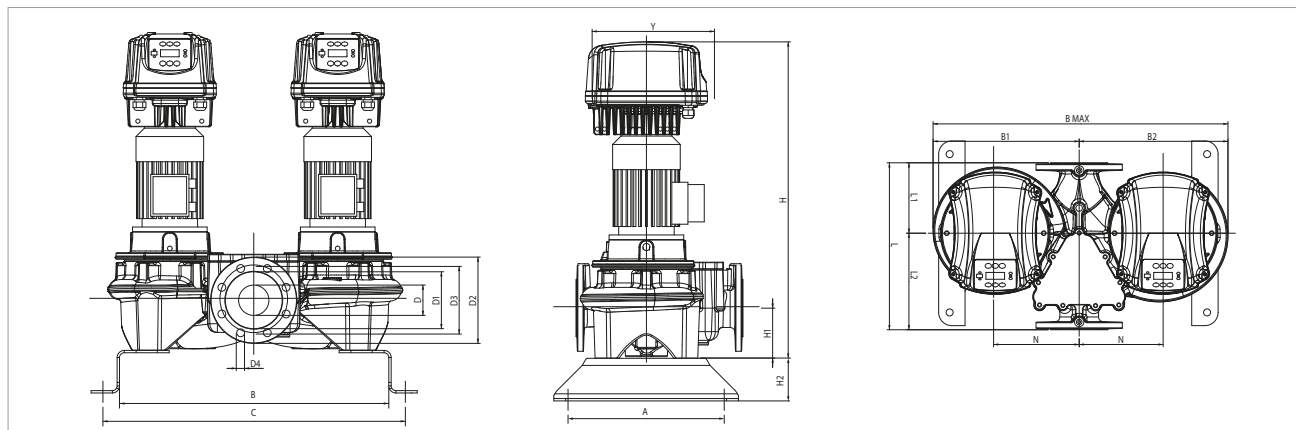
DCM-GE 80 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



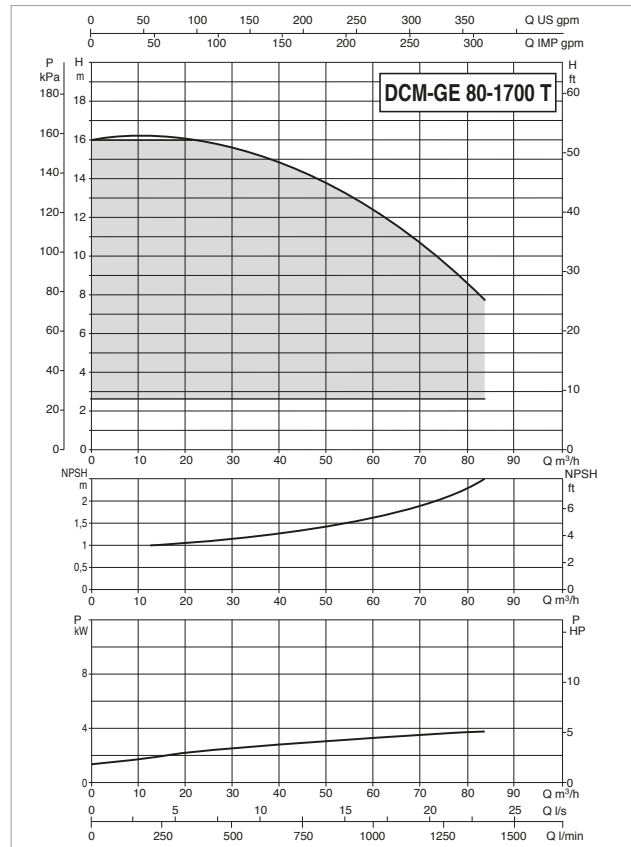
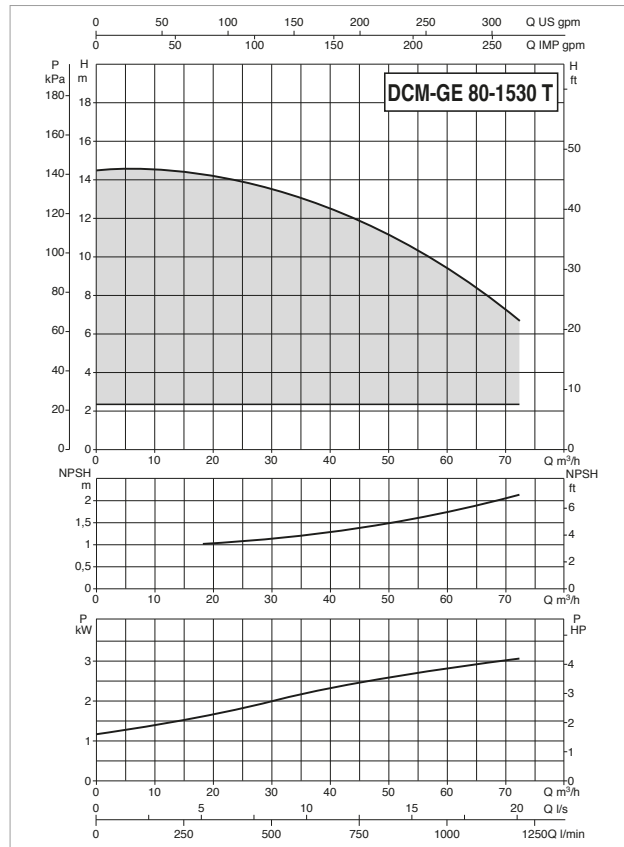
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCM-GE 80- 650/A/BAQE/ 0.75 M MCE11/C IE2	1x220-240 V ~	4 poles	1430	1,24	0,75	1	9,8
DCM-GE 80- 650/A/BAQE/ 0.75 T MCE30/C IE2	3x400 V ~	4 poles	1430	1,24	0,75	1	t.b.d.
DCM-GE 80- 890/A/BAQE/ 1.5 M MCE15/C IE2 *	1x220-240 V ~	4 poles	1430	2,07	1,5	2	15,2
DCM-GE 80- 890/A/BAQE/ 1.5 T MCE30/C IE2 *	3x400 V ~	4 poles	1430	2,07	1,5	2	t.b.d.

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS L/A L/B H	VOL. (m³)	WEIGHT kg
DCM-GE 80- 650/A/BAQE/ 0.75 M MCE11/C IE2	330	580	650	305	310	615	137	200	160	18	8	262	745	115	100	360	165	195	M16	180	360 615 745	0,16	134
DCM-GE 80- 650/A/BAQE/ 0.75 T MCE30/C IE2	330	580	650	305	310	615	137	200	160	18		262	742	115	100	360	165	195	M16	180	360 615 742	0,16	136
DCM-GE 80- 890/A/BAQE/ 1.5 M MCE15/C IE2	620	620	690	355	365	720	137	200	160	18		262	825	115	100	440	180	260	M16	200	440 720 825	0,26	211
DCM-GE 80- 890/A/BAQE/ 1.5 T MCE30/C IE2	620	620	690	355	365	720	137	200	160	18		262	822	115	100	440	180	260	M16	200	440 720 822	0,26	213

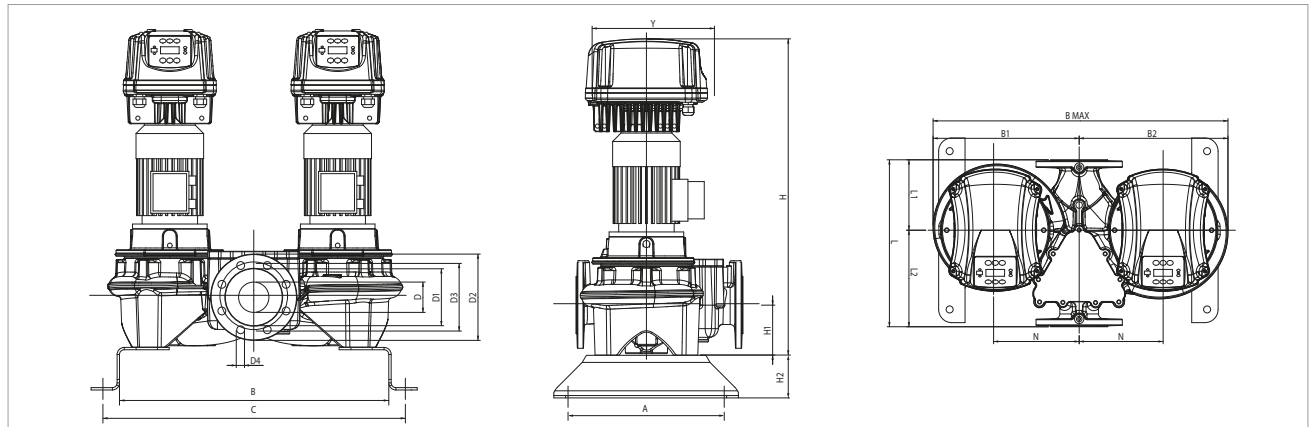
DCM-GE 80 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



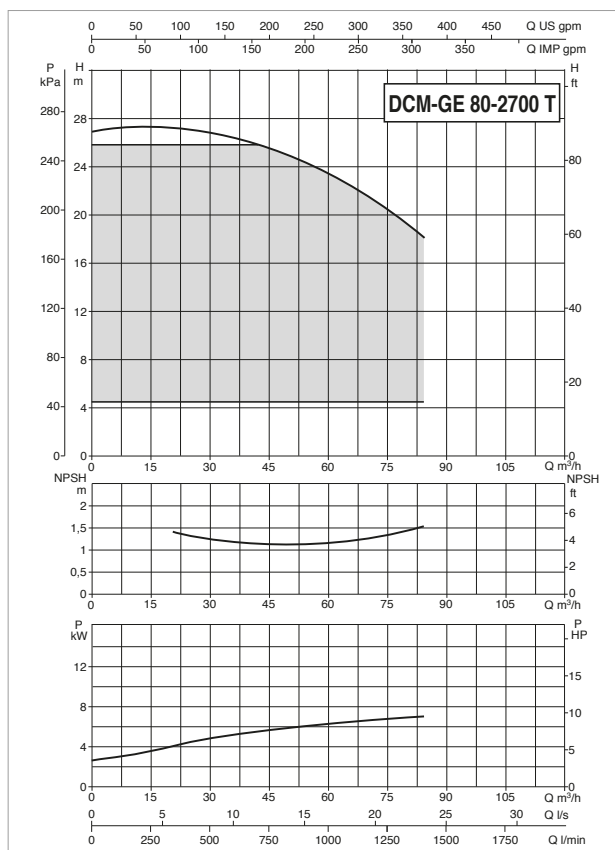
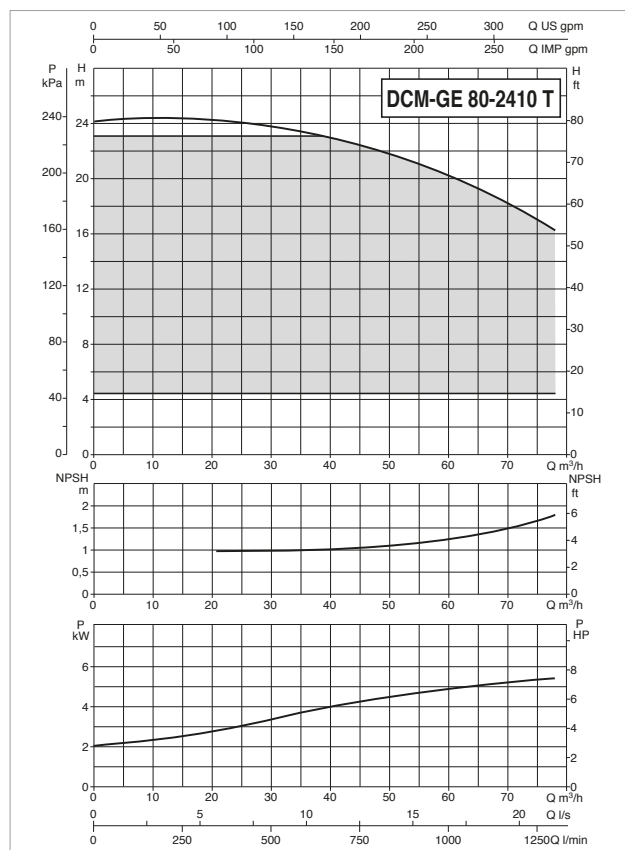
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCM-GE 80-1530/A/BAQE/ 3 T MCE30/C IE2	3x400 V ~	4 poles	1441	3,74	3	4	8,0
DCM-GE 80-1700/A/BAQE/ 4 T MCE30/C IE2 *		4 poles	1452	4,13	4	5,5	8,9

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
																					L/A	L/B	H		
DCM-GE 80-1530/A/BAQE/ 3 T MCE30/C IE2	362	662	690	405	415	820	137	200	160	18	8	352	846	115	100	500	220	280	M16	235	500	820	846	0,35	251
DCM-GE 80-1700/A/BAQE/ 4 T MCE30/C IE2	362	662	732	405	415	820	137	200	160	18		352	931	115	100	500	220	280	M16	235	500	820	931	0,38	277

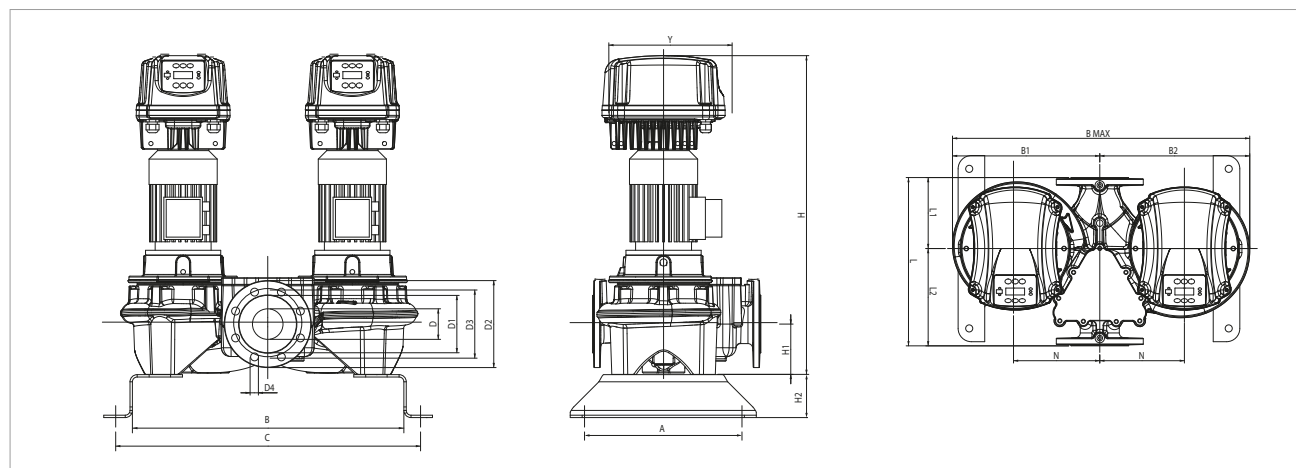
DCM-GE 80 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



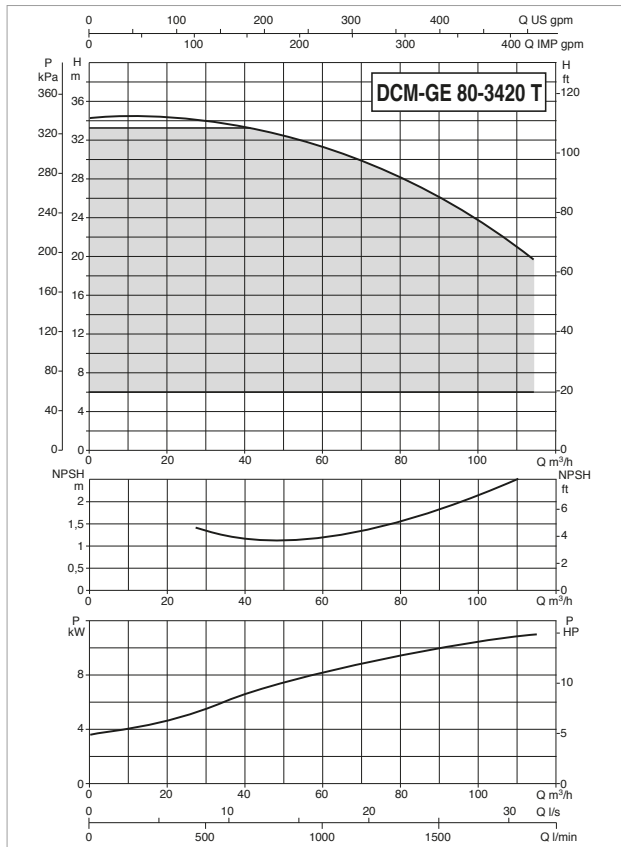
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCM-GE 80-2410/A/BAQE/ 5.5 T MCE55/C IE2 *	3x400 V ~	4 poles	1461	6,80	5,5	7,5	13,8
DCM-GE 80-2700/A/BAQE/ 7.5 T MCE110/C IE2		4 poles	1463	9,15	7,5	10	18,6

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGH kg
																					L/A	L/B	H		
DCM-GE 80-2410/A/BAQE/ 5.5 T MCE55/C IE2	500	804	924	530	540	1070	137	200	160	18	8	352	999	140	100	620	280	340	M16	300	620	1070	999	0,66	442
DCM-GE 80-2700/A/BAQE/ 7.5 T MCE110/C IE2	500	804	924	530	540	1070	137	200	160	18		425	1087	140	100	620	280	340	M16	300	620	1070	1087	0,72	499

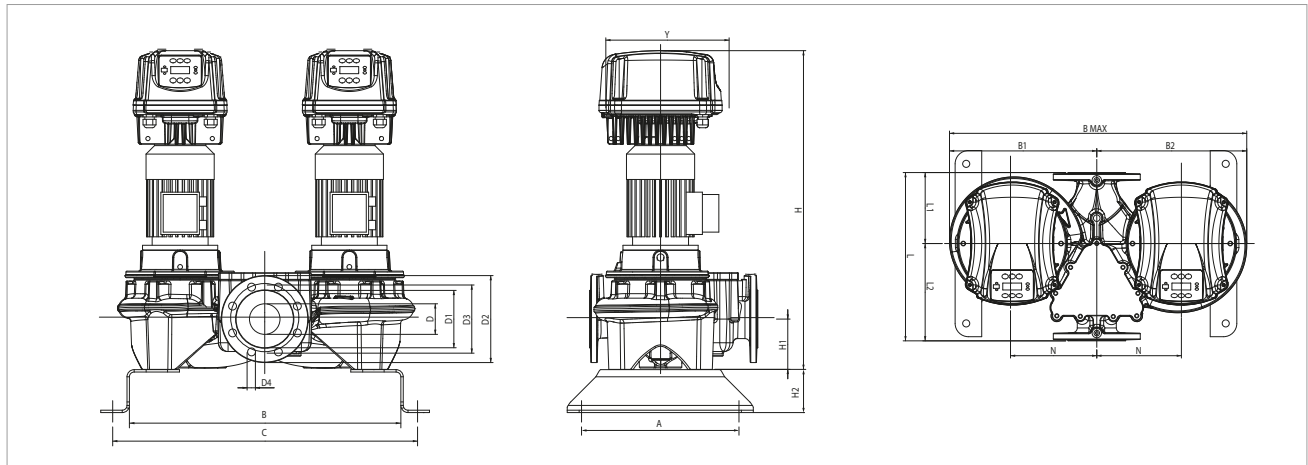
DCM-GE 80 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



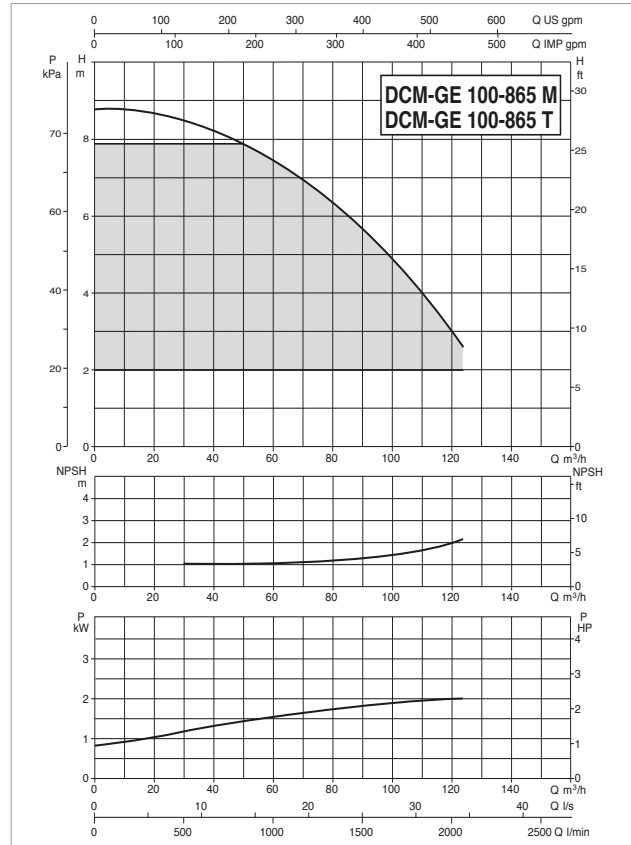
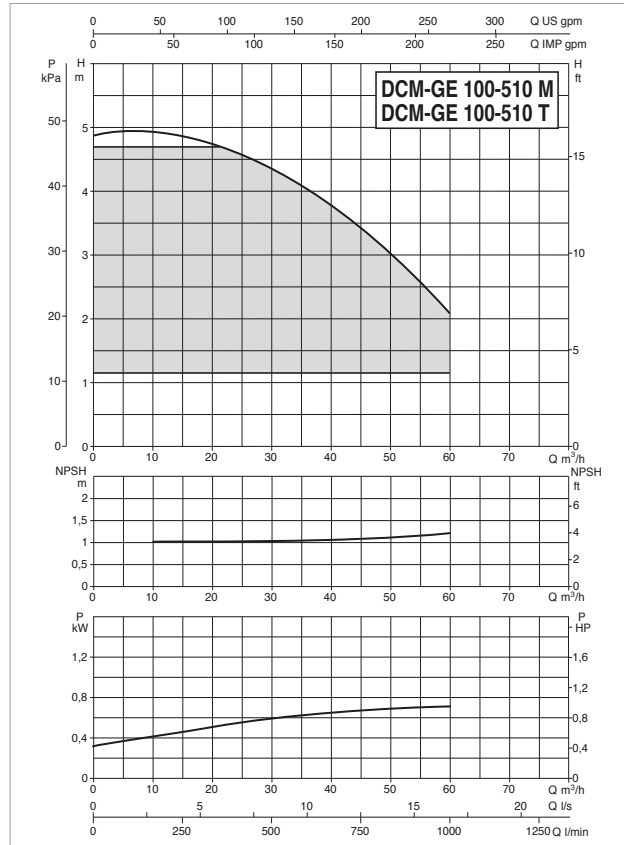
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCM-GE 80-3420/A/BAQE/ 11 T MCE110/C IE2 *	3x400 V ~	4 poles	1472	13,36	11	15	28,1

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
																					L/A	L/B	H		
DCM-GE 80-3420/A/BAQE/ 11 T MCE110/C IE2	500	804	924	530	540	1070	137	200	160	18	8	425	1192	140	100	620	280	340	M16	300	620	1070	1192	0,79	533

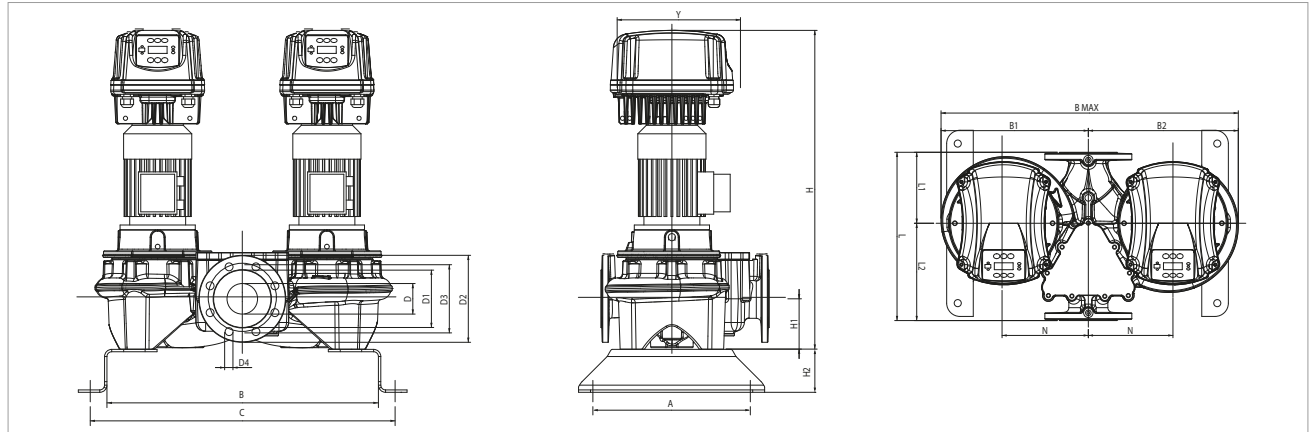
DCM-GE 100 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



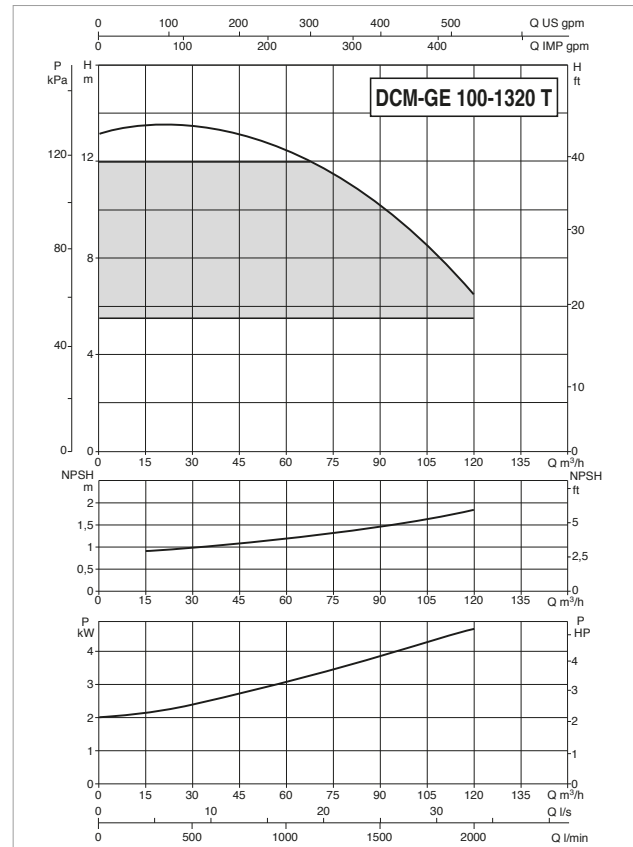
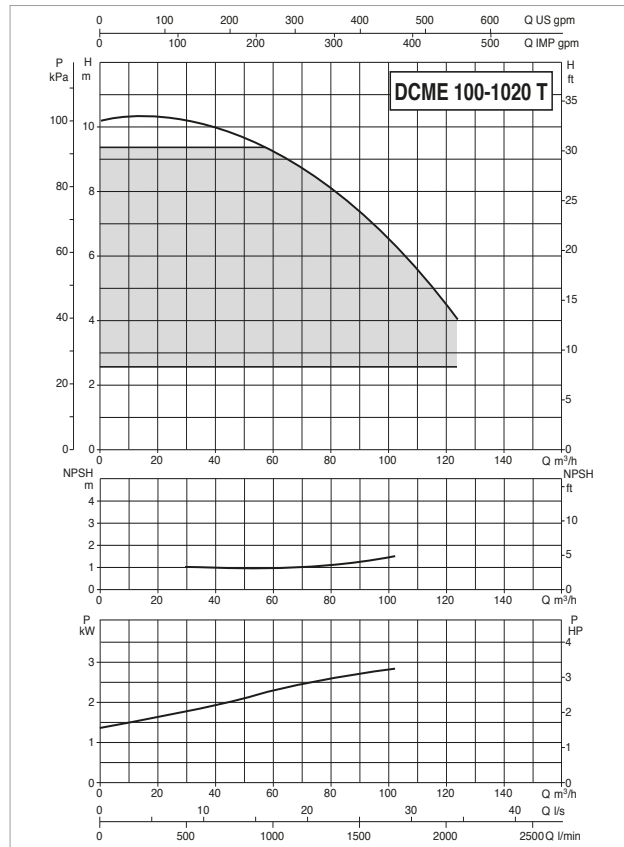
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCM-GE 100- 510/A/BAQE/ 0.75 M MCE11/C IE2 *	1x220-240 V ~	4 poles	1430	1,21	0,75	1	9,7
DCM-GE 100- 510/A/BAQE/ 0.75 T MCE30/C IE2 *	3x400 V ~	4 poles	1430	1,21	0,75	1	t.b.d.
DCM-GE 100- 865/A/BAQE/ 2.2 M MCE22/C IE2 *	1x220-240 V ~	4 poles	1430	2,94	2,2	3	20,7
DCM-GE 100- 865/A/BAQE/ 2.2 T MCE30/C IE2 *	3x400 V ~	4 poles	1430	2,94	2,2	3	7,0

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
	L/A	L/B	H																						
DCM-GE 100- 510/A/BAQE/ 0.75 M MCE11/C IE2	362	637	717	330	345	675	156	220	180	18	8	262	772	140	100	500	191	309	M16	200	500	675	772	0,26	218
DCM-GE 100- 510/A/BAQE/ 0.75 T MCE30/C IE2	362	637	717	330	345	675	156	220	180	18		262	769	140	100	500	191	309	M16	200	500	675	769	0,26	220
DCM-GE 100- 865/A/BAQE/ 1.5 M MCE22/C IE2	362	733	813	395	410	805	156	220	180	18		352	847	140	100	550	221	329	M16	235	550	805	847	0,38	253
DCM-GE 100- 865/A/BAQE/ 1.5 T MCE22/C IE2	362	733	813	395	410	805	156	220	180	18		262	847	140	100	550	221	329	M16	235	550	805	847	0,38	251

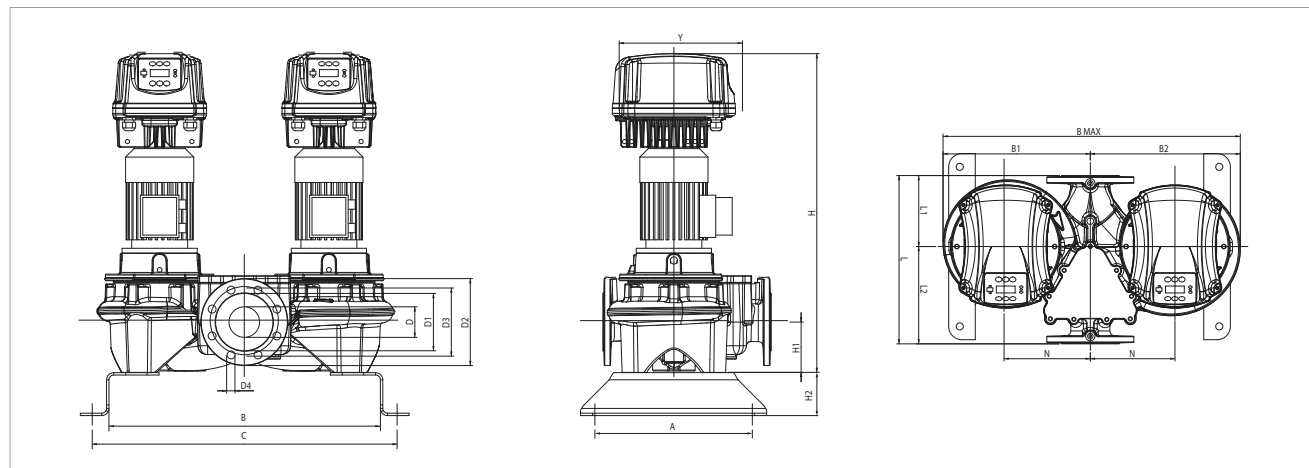
DCM-GE 100 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



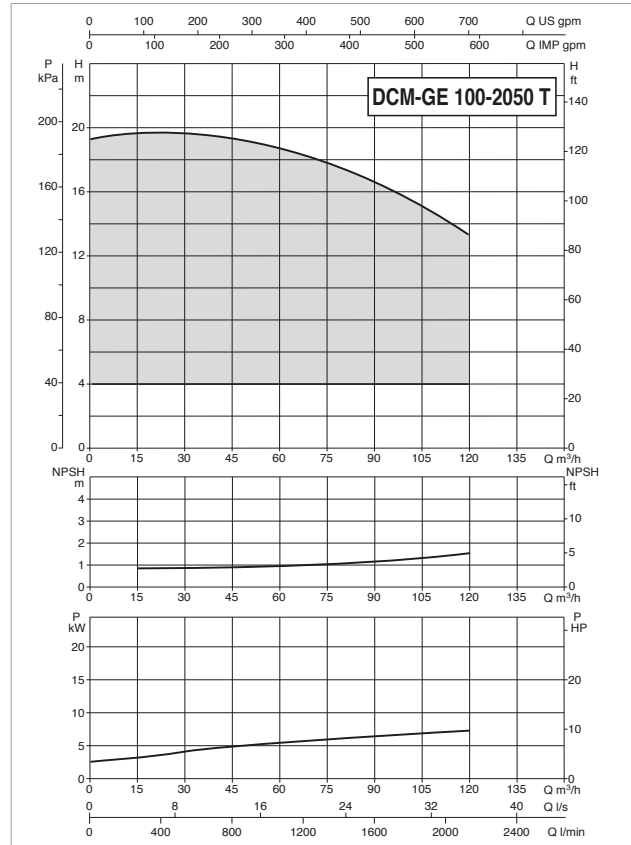
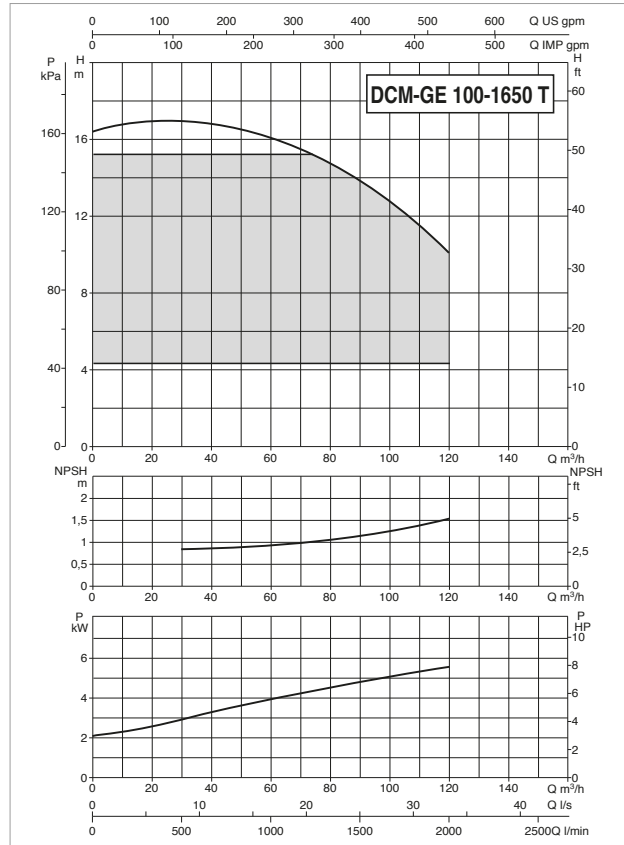
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCM-GE 100-1020/A/BAQE/ 3 T MCE30/C IE2 *	3x400 V ~	4 poles	1441	3,77	3	4	8,1
DCM-GE 100-1320/A/BAQE/4 T MCE55/C IE2 *		4 poles	1450	4,81	4	5,5	10

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
	L/A	L/B	H																						
DCM-GE 100-1020/A/BAQE/ 3 T MCE30/C IE2	362	733	813	395	410	805	156	220	180	18	8	352	862	140	100	550	221	329	M16	235	550	805	862	0,38	264
DCM-GE 100-1320/A/BAQE/4 T MCE55/C IE2	362	753	833	430	440	870	156	220	180	18		352	1007	140	100	550	221	329	M16	250	550	870	1007	0,48	308

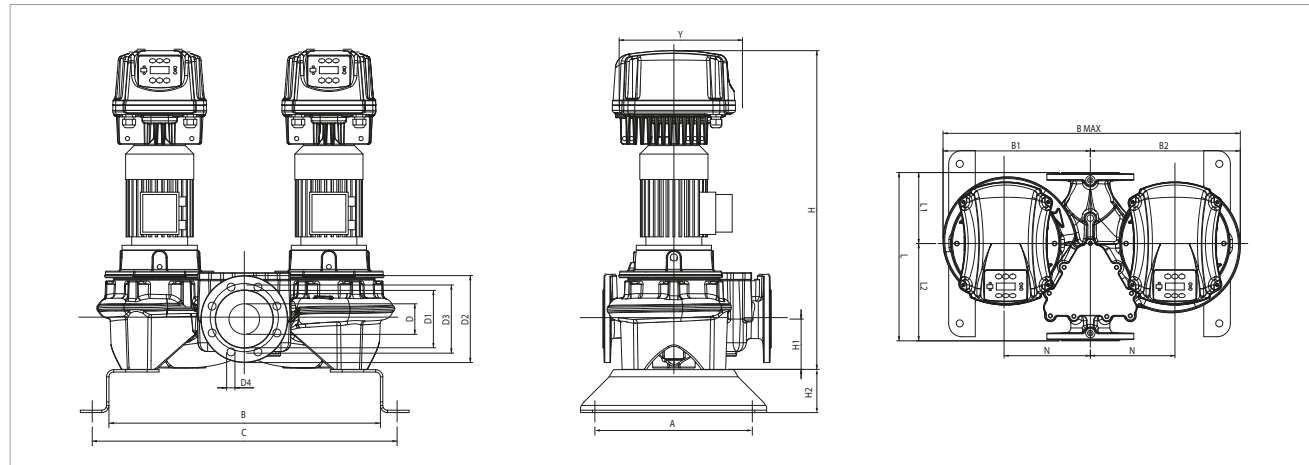
DCM-GE 100 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



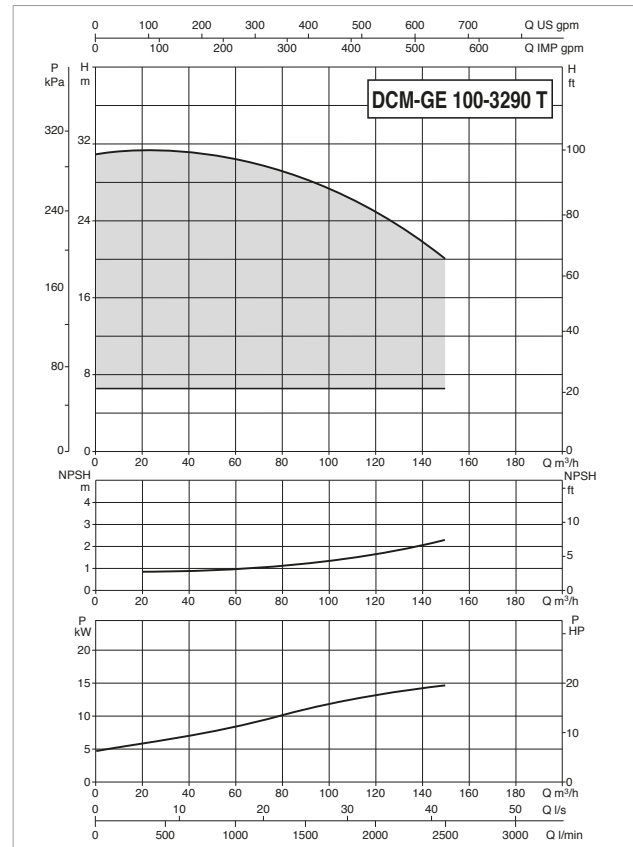
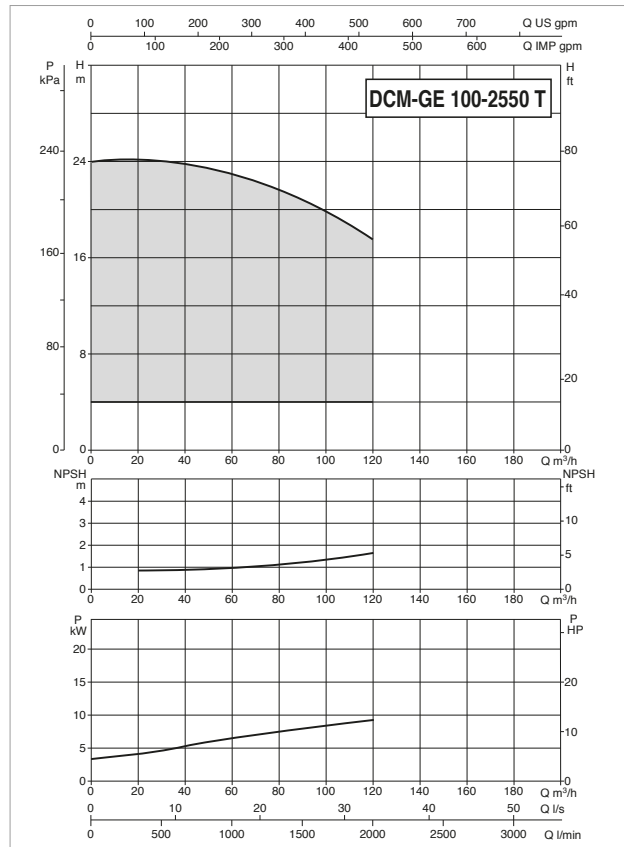
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCM-GE 100-1650/A/BAQE/ 5.5 T MCE55/C IE2 *	3x400 V ~	4 poles	1464	7,27	5,5	7,5	14,6
DCM-GE 100-2050/A/BAQE/ 7.5 T MCE110/C IE2		4 poles	1461	8,89	7,5	10	18,1

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

MODEL	A	B	C	B1	B2	B _{max}	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
	L/A	L/B	H																						
DCM-GE 100-1650/A/BAQE/ 5.5 T MCE55/C IE2	362	753	833	430	440	870	156	220	180	18	8	352	1008	140	100	550	221	329	M16	250	550	870	1008	0,48	351
DCM-GE 100-2050/A/BAQE/ 7.5 T MCE110/C IE2	500	836	956	560	575	1135	156	220	180	18		425	1132	175	100	670	266	404	M16	300	670	1135	1132	0,86	558

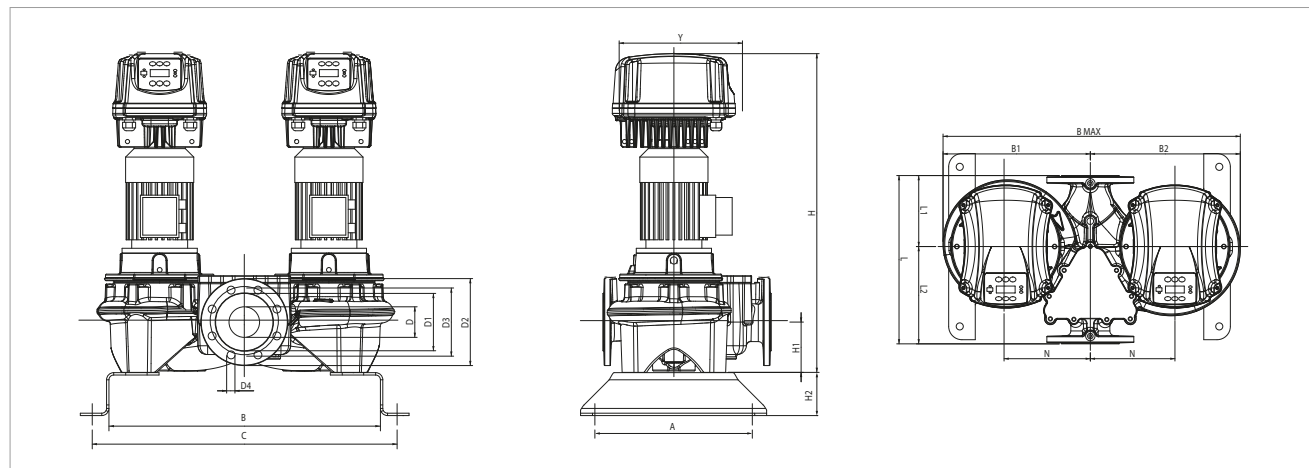
DCM-GE 100 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



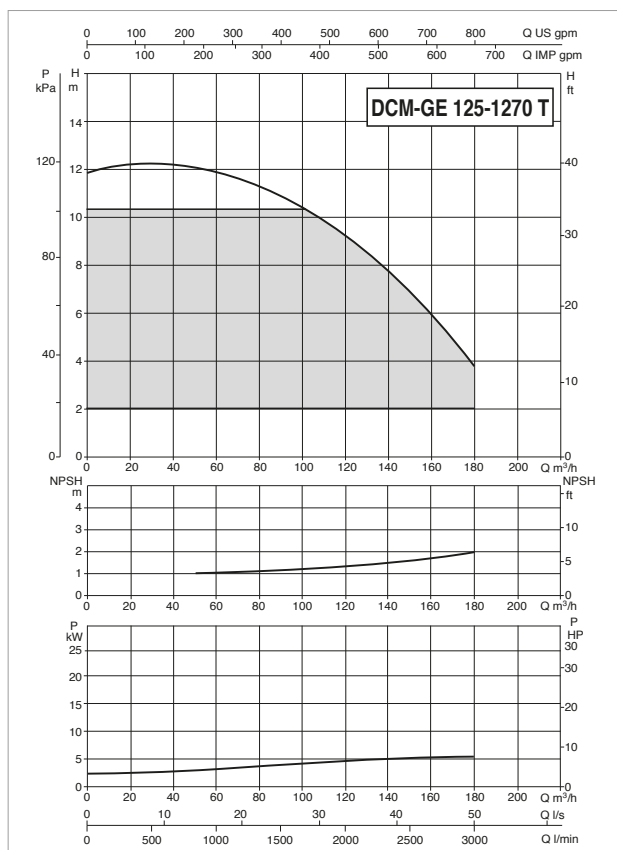
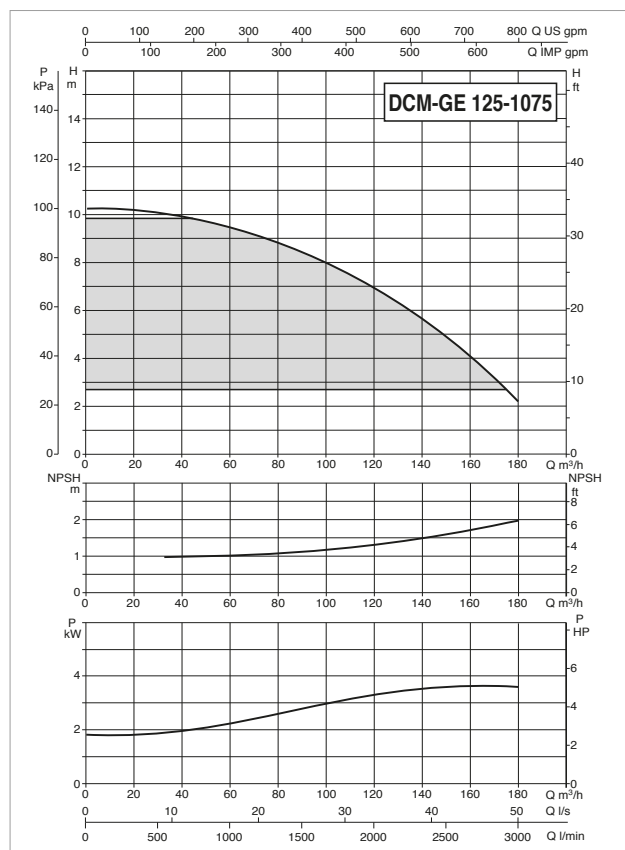
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCM-GE 100-2550/A/BAQE/ 11 T MCE110/C IE2 *	3x400 V ~	4 poles	1470	12,74	11	15	27
DCM-GE 100-3290/A/BAQE/ 15 T MCE150/C IE2		4 poles	1471	17,91	15	20	37,1

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
	L/A	L/B	H																						
DCM-GE 100-2550/A/BAQE/ 11 T MCE110/C IE2	500	836	956	560	575	1135	156	220	180	18	8	425	1237	175	100	670	266	404	M16	300	670	1135	1237	0,94	565
DCM-GE 100-3290/A/BAQE/ 15 T MCE150/C IE2	500	836	956	560	575	1135	156	220	180	18		425	1292	175	100	670	266	404	M16	300	670	1135	1292	0,98	753

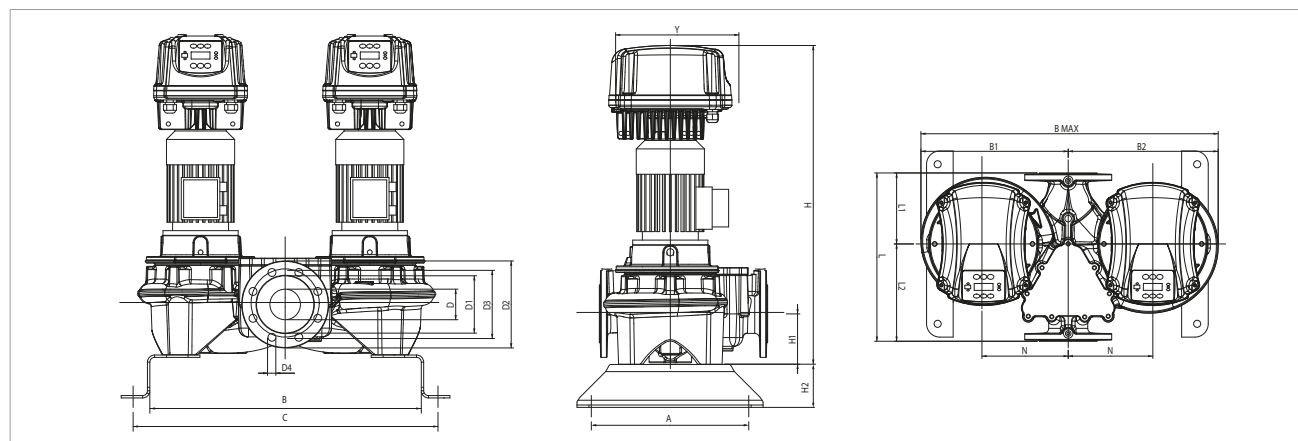
DCM-GE 125 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



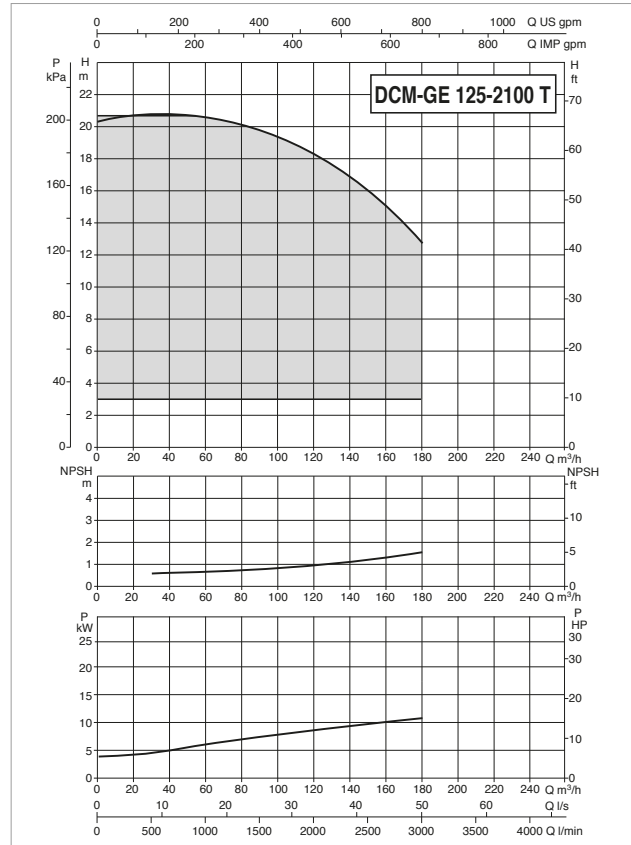
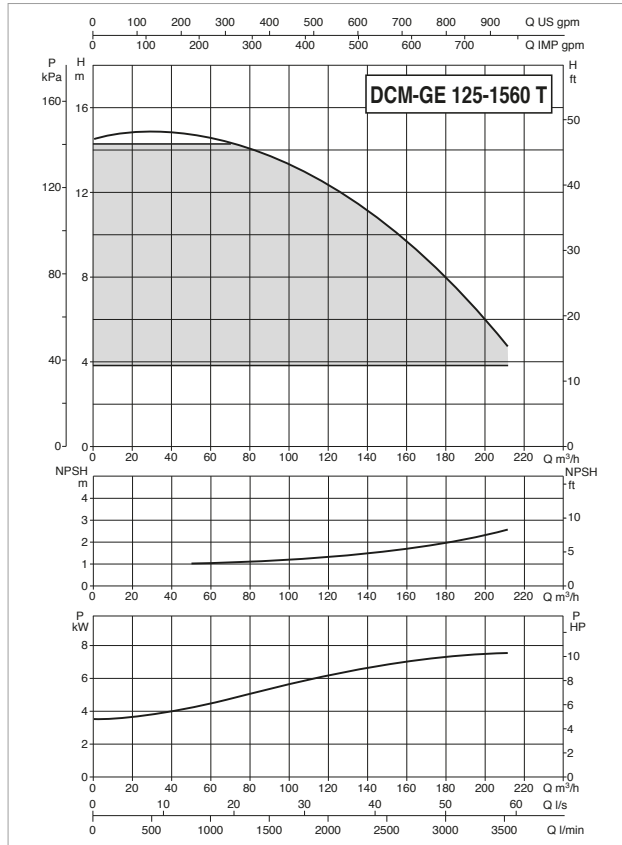
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCM-GE 125-1075/A/BAQE/ 4 T MCE55/C IE2	3x400 V ~	4 poles	1455	5,38	4	5,5	11
DCM-GE 125-1270/A/BAQE/ 5.5 T MCE55/C IE2 *		4 poles	1465	7,55	5,5	7,5	15,2

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGH kg
	L/A	L/B	H																						
DCM-GE 125-1075/A/BAQE/ 4 T MCE55/C IE2	500	810	930	515	535	1050	185	250	210	14	8	352	1093	215	100	620	226	394	M16	300	620	1050	1093	0,71	501
DCM-GE 125-1270/A/BAQE/ 5.5 T MCE55/C IE2	500	810	930	515	535	1050	185	250	210	14		352	1089	215	100	620	226	394	M16	300	620	1050	1089	0,71	503

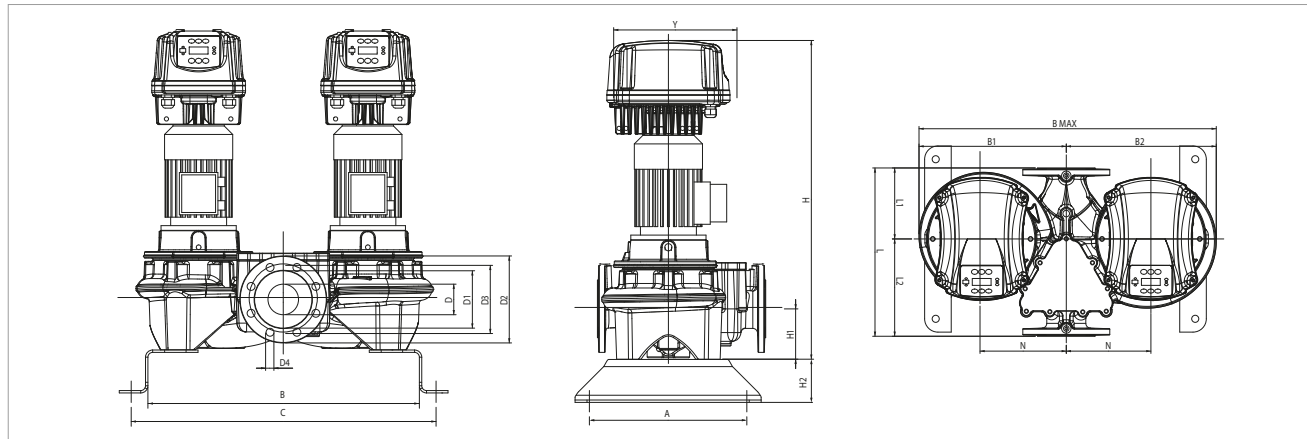
DCM-GE 125 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



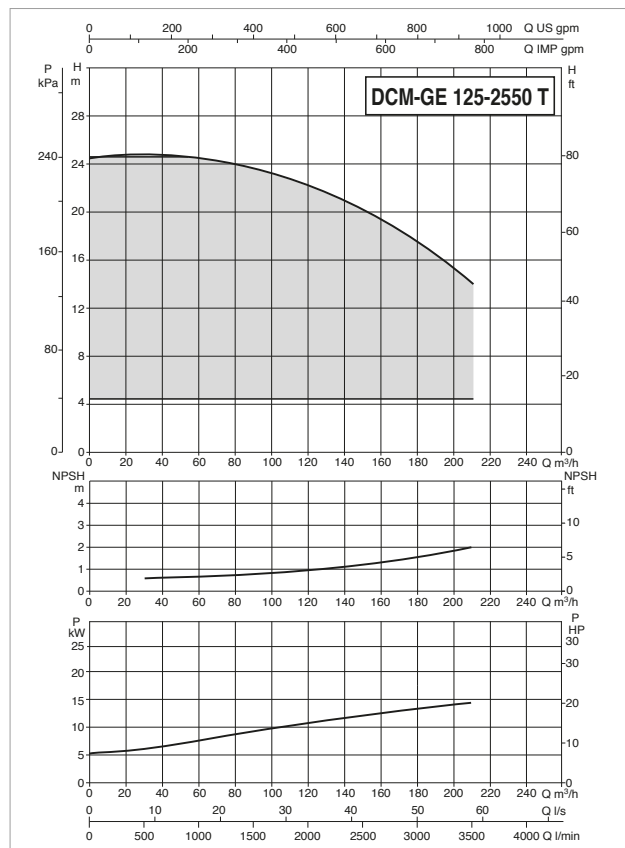
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCM-GE 125-1560/A/BAQE/ 7.5 T MCE110/C IE2 *	3x400 V ~	4 poles	1469	9,93	7,5	10	20,0
DCM-GE 125-2100/A/BAQE/ 11 T MCE110/C IE2		4 poles	1475	14,30	11	15	29,8

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

MODEL	A	B	C	B1	B2	B _{max}	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
	L/A	L/B	H																						
DCM-GE 125-1560/A/BAQE/ 7.5 T MCE110/C IE2	500	810	930	515	535	1050	185	250	210	14	8	425	1177	215	100	620	226	394	M16	300	620	1050	1177	0,77	538
DCM-GE 125-2100/A/BAQE/ 11 T MCE110/C IE2	500	810	930	555	571	1126	185	250	210	14		425	1297	215	100	800	316	484	M16	300	800	1126	1297	1,17	768

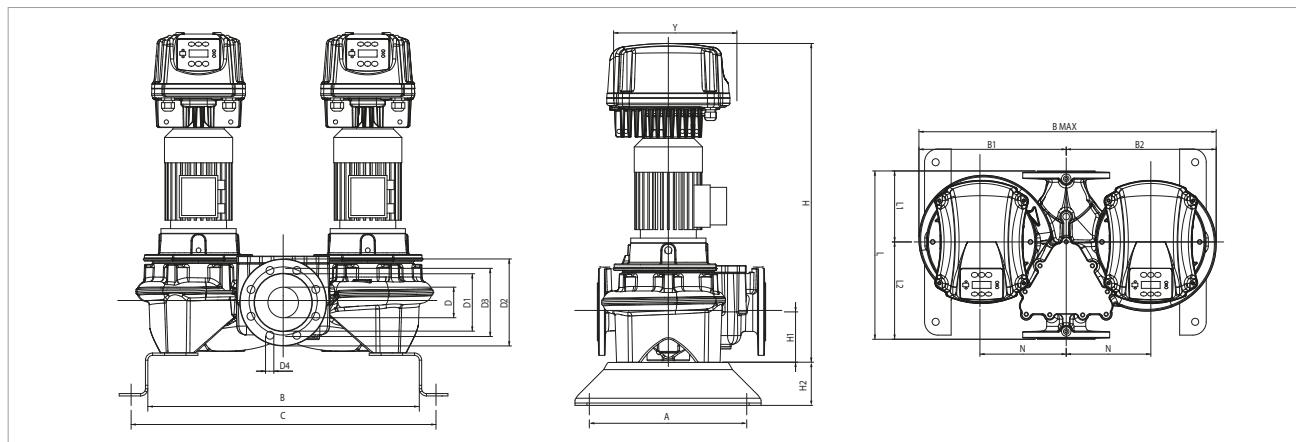
DCM-GE 125 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



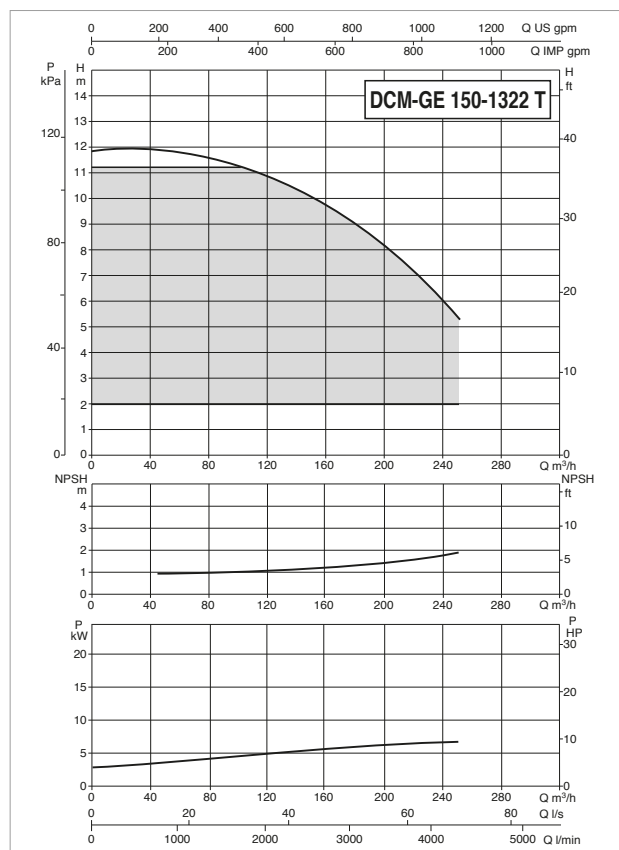
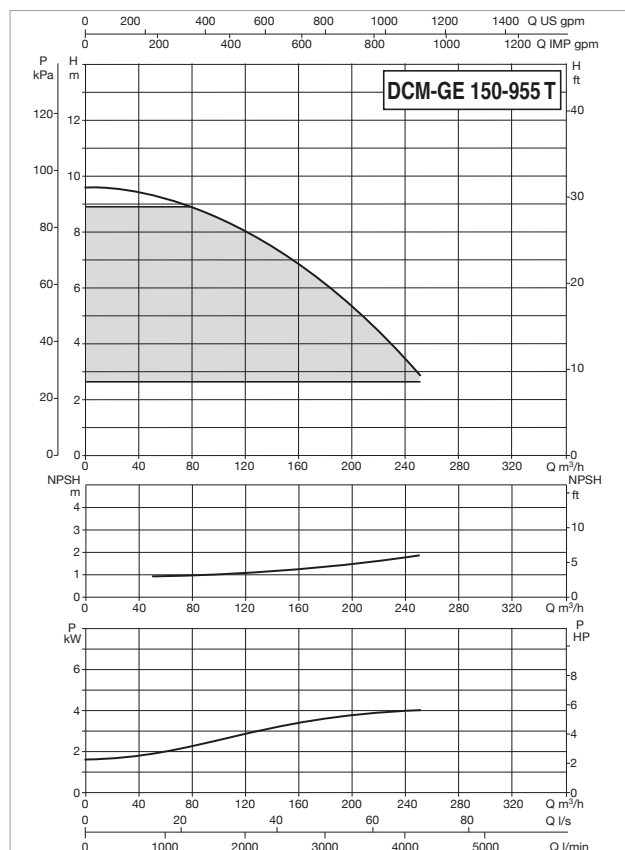
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCM-GE 125-2550/A/BAQE/ 15 T MCE150/C IE2 *	3x400 V ~	4 poles	1470	17,07	15	20	35,6

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
																					L/A	L/B	H		
DCM-GE 125-2550/A/BAQE/ 15 T MCE150/C IE2	500	810	930	555	571	1126	185	250	210	14	8	425	1352	215	100	800	316	484	M16	300	800	1126	1352	1,22	880

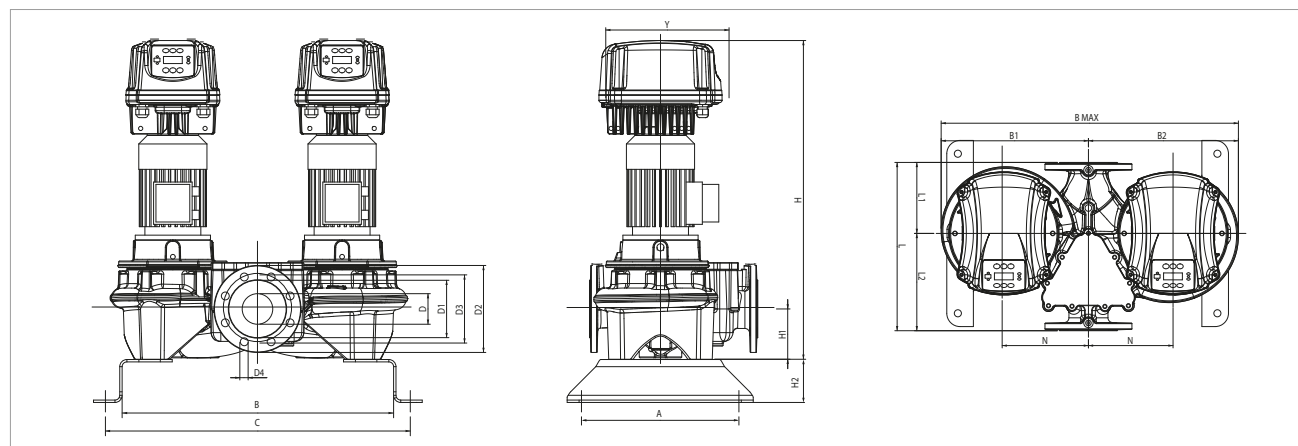
DCM-GE 150 4 POLES - ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

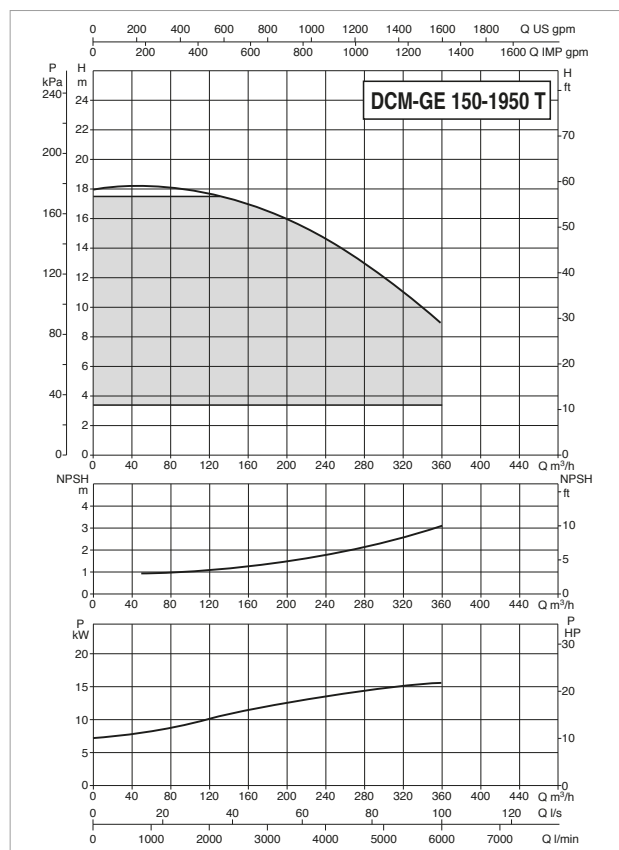
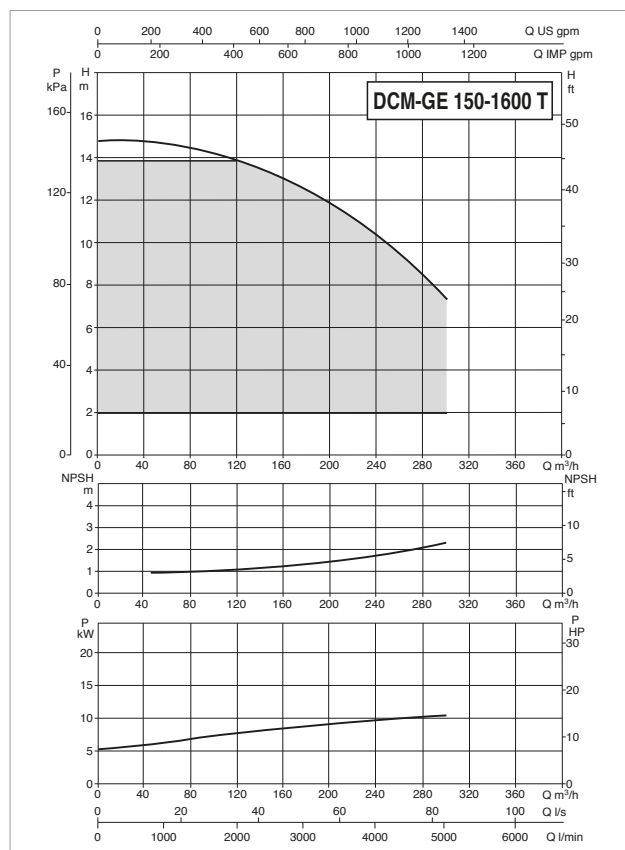


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCM-GE 150- 955/A/BAQE/ 5.5 T MCE55/C IE2	3x400 V ~	4 poles	1460	7,55	5,5	7,5	15,5
DCM-GE 150-1322/A/BAQE/ 7.5 T MCE110/C IE2		4 poles	1460	9,86	7,5	10	19,5

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
																					L/A	L/B	H		
DCM-GE 150- 955/A/BAQE/ 5.5 T MCE55/C IE2	500	805	925	550	580	1130	210	285	240	22	8	352	1112	215	100	800	296	504	M16	300	800	1130	1112	1,01	658
DCM-GE 150-1322/A/BAQE/ 7.5 T MCE110/C IE2	500	805	925	550	580	1130	210	285	240	22		425	1200	215	100	800	296	504	M16	300	800	1130	1200	1,08	693

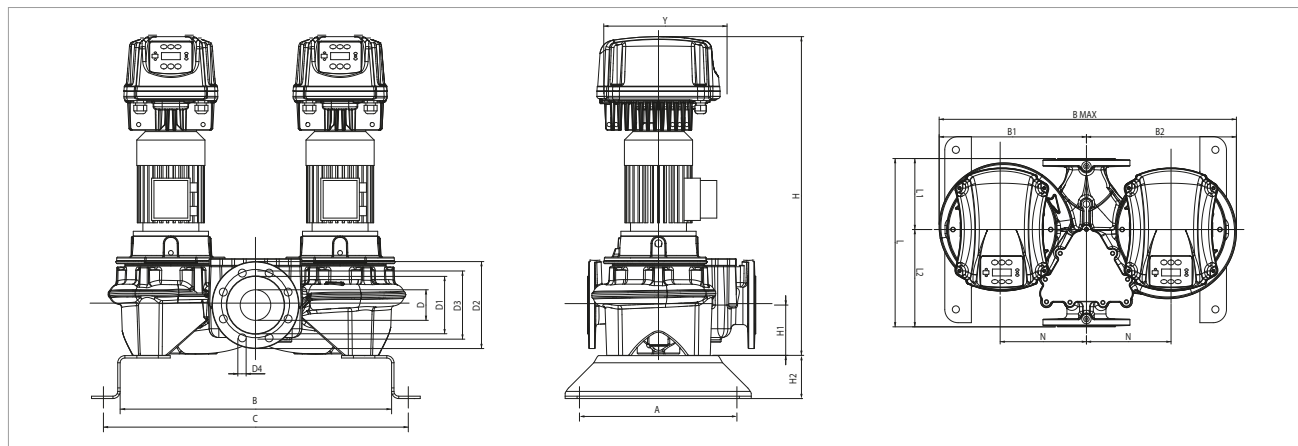
DCM-GE 150 4 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCM-GE 150-1600/A/BAQE/ 11 T MCE110/C IE2 *	3x400 V ~	4 poles	1450	14,97	11	15	31,4
DCM-GE 150-1950/A/BAQE/ 15 T MCE150/C IE2 *		4 poles	1470	19,31	15	20	39,9

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
																					L/A	L/B	H		
DCM-GE 150-1600/A/BAQE/ 11 T MCE110/C IE2	500	805	925	550	580	1130	210	285	240	22	8	425	1305	215	100	800	296	504	M16	300	800	1130	1305	1,18	719
DCM-GE 150-1950/A/BAQE/ 15 T MCE150/C IE2	500	805	925	550	580	1130	210	285	240	22		425	1360	215	100	800	296	504	M16	300	800	1130	1360	1,23	818

CPE / CP-GE / DCPE / DCP-GE

ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS



TECHNICAL DATA

Operating range:

from 1,2 to 230 m³/h with head up to 56 metres

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

Maximum operating pressure:

PN10 : DN 40 - DN 50

PN16 : Remainder of the range

Flanging: PN 16.

Counter flanges on request:

DN 40 - DN 50 - DN 65 - DN 80 - DN 100 - DN 125 - DN 150; PN 16.

Protection: IP 55

Insulation: class F

Liquid temperature range:

-10 °C to +130 °C for DN 40 - 50

-10 °C to +140 °C for the remainder of the range

Maximum ambient temperature: +40°C

Maximum working pressure: 16 bar

Standard single-phase voltage: 1x220-240 V / 50-60 Hz

Special version on request:

three-phase 3x400 V / 50 Hz or three-phase 3x460 V / 60 Hz

Standard three-phase voltage: 3x400 V / 50 Hz

Special version on request: 3x460 V / 60 Hz

Pumped liquid: clean, free of solids and abrasives, non-viscous, non-aggressive, non-crystallised and chemically neutral.

APPLICATIONS

In-line port circulation pumps, suitable for heating, air conditioning, refrigeration and sanitary water systems. Particularly versatile thanks to the use of the MCE/C inverter, offering performance features capable of automatically adapting to the different needs of the system, keeping a consistent differential pressure. Available in the single and twin versions.

CONSTRUCTION FEATURES OF THE PUMP

PN 16 flanged suction and delivery ports with threaded holes for control manometers. Cast iron pump body and motor support, cast iron or technopolymer impeller depending on mode (bronze impeller available on request for DN 65 to DN 150 models only). Stainless steel motor shaft. Seal device: standardised mechanical seal according to DIN 24960 in carbon/silicon carbide with EPDM OR rings.

CONSTRUCTION FEATURES OF THE MOTOR

External ventilation asynchronous type motor. Rotor running on ball bearings, oversized to ensure low noise and durability. Construction according to CEI 2-3.

CONSTRUCTION FEATURES OF THE ELECTRONICS: MCE/C INVERTER

MCE/C inverters are the latest technological achievement of the DAB inverter range. They represent a new generation of inverters for use with circulation pumps, and set themselves apart due to ease of use, power, simplicity of installation and management. MCE/C inverters have been designed for managing circulation pumps. By allowing a simple adjustment of the differential pressure, they give the possibility of adjusting the performance of the circulation pump to the actual system requirements. They are fitted on the fan cover of the motor. This makes the installation of the pump with MCE/C particularly easy and quick. The protection class of the MCE/C is IP55. The easy of programming is guaranteed by the use of a simple and intuitive interface, similar to Dialogue electronic circulators, and a graphic display. MCE/C inverters have a double micro-processor construction that guarantees maximum efficiency and reliability.

A reliable and sturdy construction, together with a modern and innovative design, complete the product, also in terms of aesthetic value. MCE/C inverters protect the motor and the pump, and increase their life, by eliminating hammering effects and making the pump rotate at the minimum number of rotations capable of meeting the requirements of the user. In addition, electric pumps controlled by the MCE/C inverter are environmentally friendly. In fact, by ensuring that the pump only uses the power that is strictly necessary for meeting the needs of the users, electricity consumption is strongly reduced when compared with fixed speed pumps. It is possible to create twin units by using the appropriate cable for the connection of MCE/C inverters.

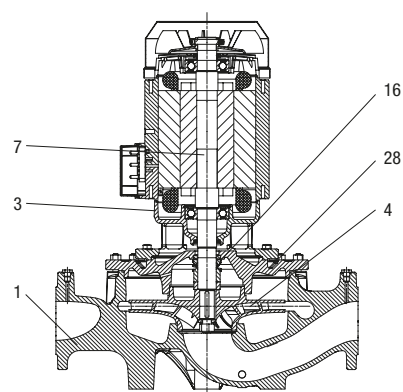
CPE / CP-GE / DCPE / DCP-GE

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 DN 65-80-100 / DCPE DN 40 - 50 / CPE 40-4700T, CPE 40-5500T, CPE 40-6200T, CPE 50-4600T, CPE 50-5650T
		TECHNOPOLYMER B CPE 40-2300T, CPE 40-3500T, CPE 50-2600T, CPE 50-4100T
7	SHAFT WITH ROTOR	AISI 303 STAINLESS STEEL X10 CrNiS 1809 UNI 6900/71
16	MECHANICAL SEAL	CARBON/GRAPHITE
28	OR RING	EPDM RUBBER

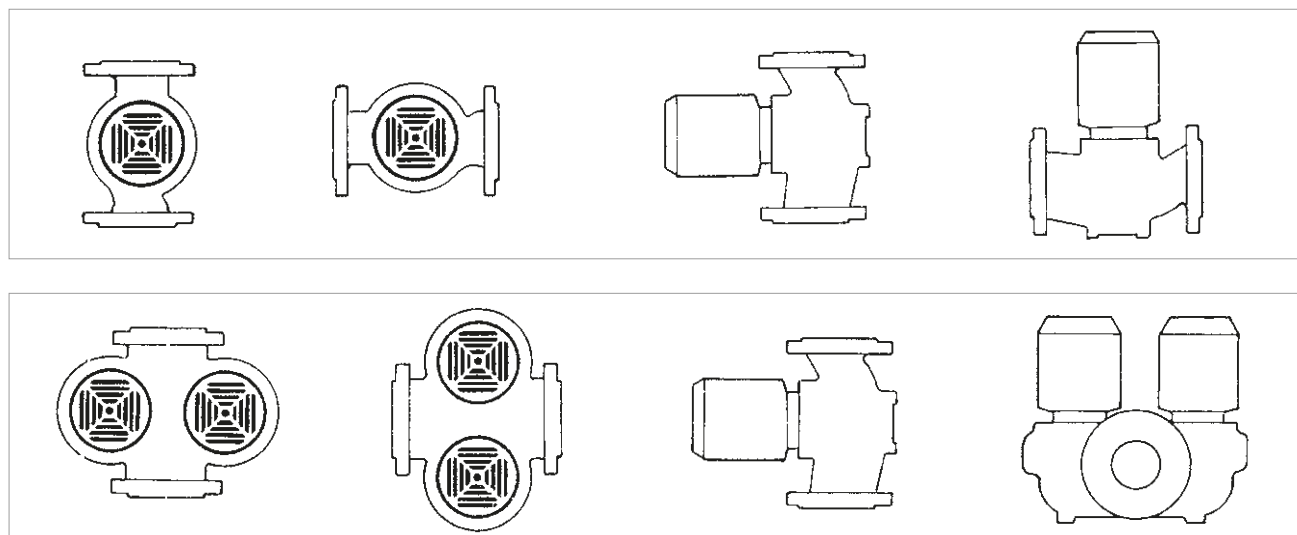
* In contact with the liquid



– Legend: (example)

	D	C	M - G	E	65	420	A	BAQE	0,25	MCE	11	C
- Single pump												
D - Twin pump												
Circulator												
M = 4-pole motor												
M = 2-pole motor												
G = version with coupling												
E = motor complete with MCE/C inverter												
(DN) nominal diameter of the flanged ports												
Maximum head (cm)												
A - Cast iron impeller												
B - Bronze impeller												
Mechanical seal type												
Motor P2 in kW												
MCE = DAB inverter												
11 = P. max in Kw x 10												
C = Circulation version												

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



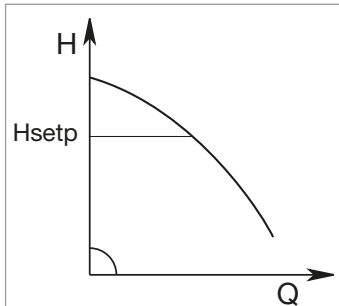
MCE/C INVERTER

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.

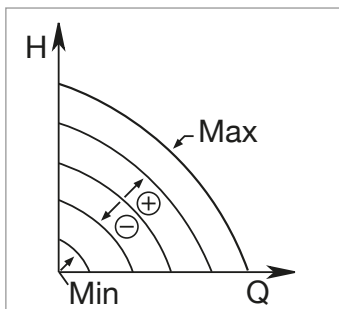
1 - ΔP -c constant differential pressure adjustment mode

The ΔP -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:

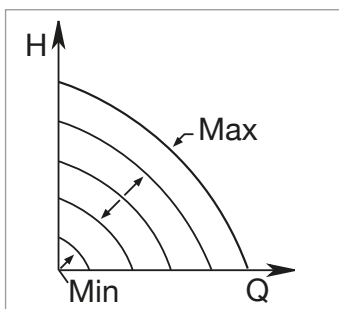
- a. two-pipe heating systems with thermostat valves**
- b. underfloor heating systems with thermostat valves**
- c. single-pipe heating systems with thermostat valves and calibration valves**
- d. systems with primary circuit pumps**



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.

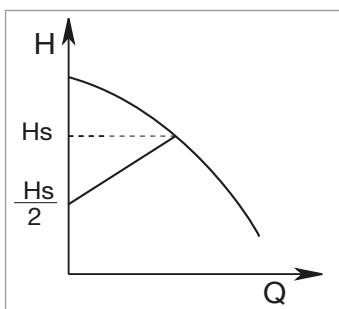


2.2 - Adjustment of the constant curve with external analogue signal

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 - ΔP -v * proportional differential pressure adjustment mode

With ΔP -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.

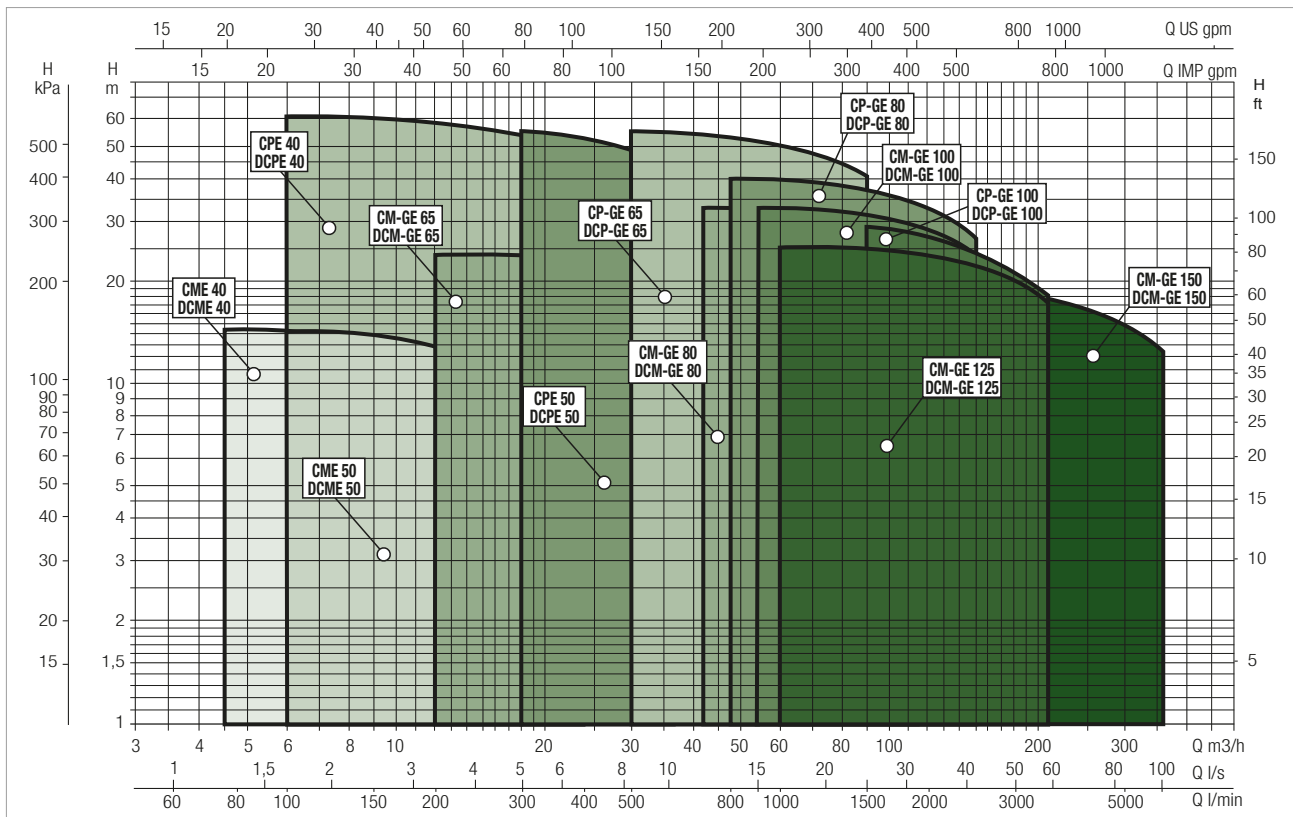
ELECTRIC IN-LINE PUMPS

ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

PERFORMANCE RANGE

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

GRAPHIC SELECTION TABLE



SELECTION TABLE - CPE - 2 POLES

MODEL	Q= m³/h Q= l/min	0	3,6	4,8	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90
		0	60	80	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
CPE 40/2300 M MCE11/C IE2	H (m)	21,8	21,8	21,3	21	18													
CPE 40/2300 T MCE30/C IE2		21,8	21,8	21,3	21	18													
CPE 40/3500 M MCE22/C IE2		34,8	34,9	34,7	34,2	31,7													
CPE 40/3500 T MCE30/C IE2		34,8	34,9	34,7	34,2	31,7													
CPE 40/4700 T MCE55/C IE2					47	44	39,5	35											
CPE 40/5500 T MCE55/C IE2					55	53	48	42											
CPE 40/6200 T MCE110/C IE2					62	59	54	49											
CPE 50/2600 M MCE15/C IE2					25	22	16												
CPE 50/2600 T MCE 30/C IE2					25	22	16												
CPE 50/4100 T MCE30/C IE2					40,7	38,5	34,5	27,7											
CPE 50/4600 T MCE55/C IE2							44	41,5	37	31									
CPE 50/5650 T MCE110/C IE2							55,5	53	49	44									

CPE / CP-GE / DCPE / DCP-GE

ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

SELECTION TABLE - CPE - 2 POLES

MODEL	Q=	0	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	102	114	120	150	180	210
	Q=	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1700	1900	2000	2500	3000	3500
CP-GE 65-1470/A/BAQE/1.5 M MCE11/C IE2	m ³ /h	14,7	14,5	14,3	13,8	13	11,8	10,5	8,6	7													
CP-GE 65-1470/A/BAQE/1.5 T MCE30/C IE2	l/min	14,7	14,5	14,3	13,8	13	11,8	10,5	8,6	7													
CP-GE 65-2280/A/BAQE/3 T MCE30/C IE2		22,8	22,5	22,3	22	21,2	20,2	19	17,4	15,5	13,5												
CP-GE 65-2640/A/BAQE/4 T MCE55/C IE2		26,4	26,2	26	25,6	25	24	23	21,5	19,5	17,5	15											
CP-GE 65-3400/A/BAQE/5.5 T MCE55/C IE2		34			34	33,5	32,5	31	29,5	27	24												
CP-GE 65-4100/A/BAQE/7.5 T MCE110/C IE2		41			41	41	40	39	37,5	35,5	33	30	26,5										
CP-GE 65-4700/A/BAQE/11 T MCE110/C IE2		47					45,5	45	44,3	43,3	42	40,8	39	37	35	32,3							
CP-GE 65-5500/A/BAQE/15 T MCE150/C IE2		55					56	55,5	54	53,5	52	51	49	47,5	45,5	43	41						
CP-GE 80-1400/A/BAQE/2.2 M MCE22/C IE2		14				13,8	13,3	12,9	12,5	12,1	11,4	10,8	10	9,2	8,3	7,5							
CP-GE 80-1400/A/BAQE/2.2 T MCE30/C IE2		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/A/BAQE/4 T MCE55/C IE2		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/A/BAQE/5.5 T MCE55/C IE2		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/A/BAQE/7.5 T MCE110/C IE2		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/A/BAQE/11 T MCE110/C IE2		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/A/BAQE/15 T MCE150/C IE2		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/A/BAQE/4 T MCE55/C IE2		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/A/BAQE/5.5 T MCE55/C IE2		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/A/BAQE/7.5 T MCE110/C IE2		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/A/BAQE/11 T MCE110/C IE2		24															22	21,4	20,4	20	17,4	16,8	12
CP-GE 100-3050/A/BAQE/15 T MCE150/C IE2		30,5															29	28,4	27,5	27	24,5	21,3	18,3

H
(m)

CPE / CP-GE / DCPE / DCP-GE

ELECTRONIC IN-LINE PUMPS FOR CIRCULATION SYSTEMS

SELECTION TABLE - DCPE - 2 POLES

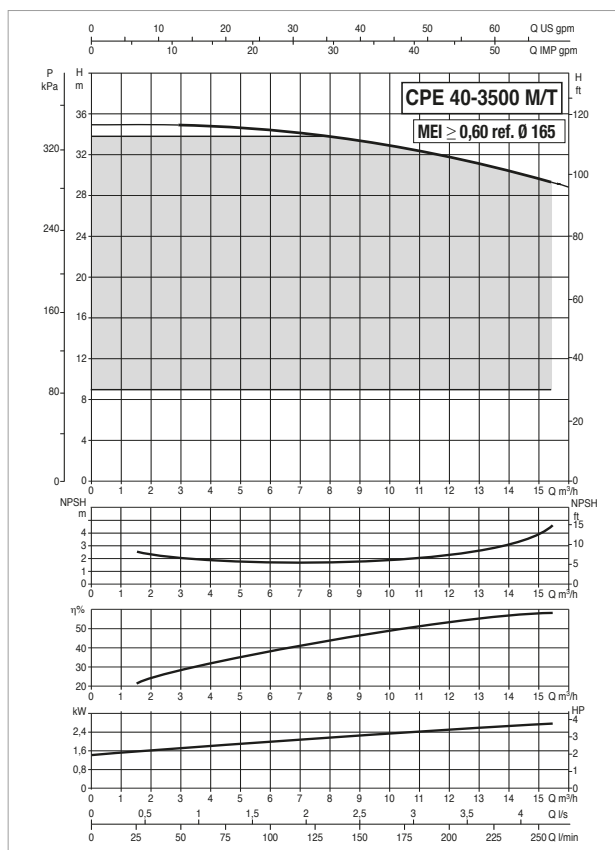
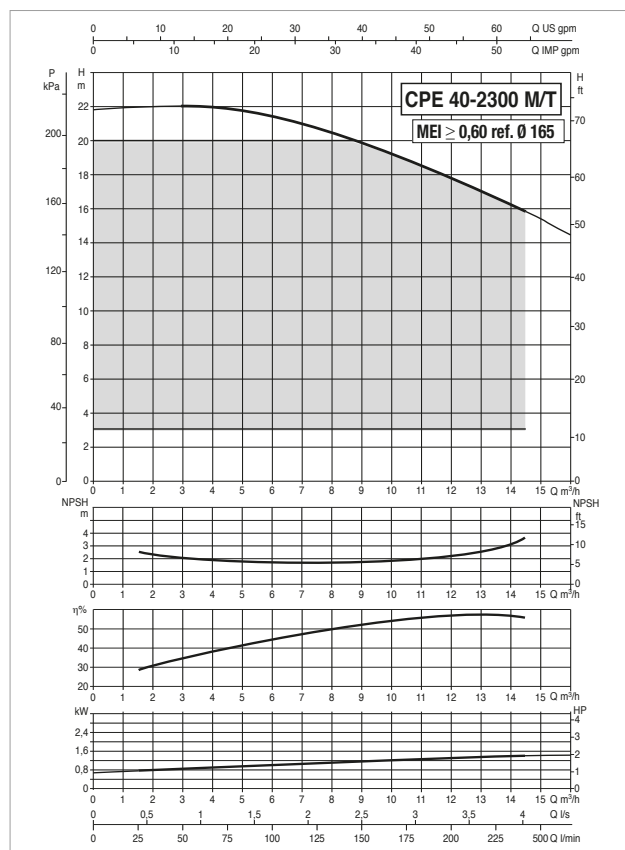
MODEL	Q= m ³ /h	6	7,5	9	10,5	12	13,5	15	18	21	24	27	30	36	42	48	54	60	180	210
	Q= l/min	100	125	150	175	200	225	250	300	350	400	450	500	600	700	800	900	1000	3000	3500
DCPE 40/1650 M MCE11/C IE2	H (m)	16,5	15,5	14,5	13,5	12,3	11	9,5	6											
DCPE 40/2450 M MCE15/C IE2		24,5	24	23,5	23	22	21	20	16,5	13										
DCPE 40/2450 T MCE30/C IE2		24,5	24	23,5	23	22	21	20	16,5	13										
DCPE 50/1550 M MCE15/C IE2								15,5	15	14,1	13	11,8	10,5	7						
DCPE 50/1550 T MCE30/C IE2								15,5	15	14,1	13	11,8	10,5	7						
DCPE 50/2450 T MCE30/C IE2								24,5	24	23,5	23	22	20,5	17						
DCPE 50/3650 T MCE55/C IE2								36,5	35,5	34,5	33,5	32,5	31	27						

SELECTION TABLE - DCP-GE - 2 POLES

MODEL	Q= m ³ /h	0	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	102	114	120	150	180	210
	Q= l/min	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1700	1900	2000	2500	3000	3500
DCP-GE 65-1470/A/BAQE/1.5M MCE11/C	H (m)	14,4	14,2	13,8	13,1	12,0	10,6	9,0	7,0	5,3													
DCP-GE 65-1470/A/BAQE/1.5 T MCE30/C		14,4	14,2	13,8	13,1	12,0	10,6	9,0	7,0	5,3													
DCP-GE 65-2280/A/BAQE/3 T MCE30/C		22,3			21,1	19,9	18,4	16,8	14,7	12,5	10,2												
DCP-GE 65-2640/A/BAQE/4 T MCE55/C		25,9			24,6	23,7	22,2	20,7	18,8	16,4	14,0	11,4											
DCP-GE 65-3400/A/BAQE/5.5 T MCE55/C		33,3			32,5	31,4	29,7	27,4	25,0	21,7	18,2												
DCP-GE 65-4100/A/BAQE/7.5T MCE110/C		40,2			39,6	39,0	37,4	35,7	33,4	30,7	27,5	23,9	20,1										
DCP-GE 65-4700/A/BAQE/11 T MCE110/C		46,4				44,3	43,6	42,6	41,3	39,6	38,1	35,9	33,6	31,3									
DCP-GE 65-5500/A/BAQE/15 T MCE150/C		54,3				54,7	53,9	52,1	51,2	49,4	48,0	45,6	43,7	41,3	38,4	36,1							
DCP-GE 80-1400/A/BAQE/2.2 M MCE30/C		13,7			14,3	13,7	13,0	12,3	11,4	10,3	9,1	7,8	6,5	5,2	4,0								
DCP-GE 80-1400/A/BAQE/2.2 T MCE30/C		13,7			14,3	13,7	13,0	12,3	11,4	10,3	9,1	7,8	6,5	5,2	4,0								
DCP-GE 80-2050/A/BAQE/4T MCE55/C		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/A/BAQE/5.5 T MCE55/C		23,5			24,5	24,4	23,9	23,1	22,1	20,8	19,6	17,9	16,3	14,8	13,0	11,2	7,1						
DCP-GE 80-2770/A/BAQE/7.5 T MCE110/C		27,1							26,6	26,0	25,3	24,3	22,8	21,9	20,5	19,3	16,2	13,0	11,3				
DCP-GE 80-3250/A/BAQE/11 T MCE110/C		31,9							31,2	30,5	29,7	28,5	26,7	25,6	24,0	22,6	19,1	15,2	13,2				
DCP-GE 80-4000/A/BAQE/15 T MCE150/C		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/A/BAQE/4 T MCE55/C		16,0					15,8	15,2	14,5	13,6	12,8	11,8	10,8	9,6	8,4	7,3	5,1	3,0					
DCP-GE 100-1950/A/BAQE/5.5 T MCE55/C		19,5					20,1	19,8	19,2	18,5	17,7	16,5	15,5	14,5	13,3	11,8	9,0	6,0	4,5				
DCP-GE 100-2350/A/BAQE/7.5 T MCE110/C		23,5					24,5	24,4	24,0	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/A/BAQE/11 T MCE110/C		23,6														21,9	21,0	19,7	19,1	15,5	13,4	8,2	
DCP-GE 100-3050/A/BAQE/15 T MCE150/C		30,0														28,9	27,9	26,5	25,8	21,8	17,0	12,5	

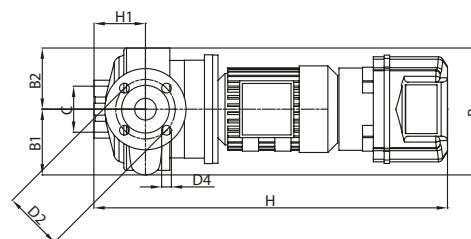
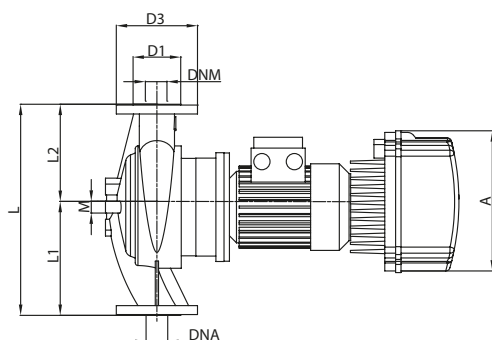
CPE 40 2 POLI - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -10 °C to +130°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.

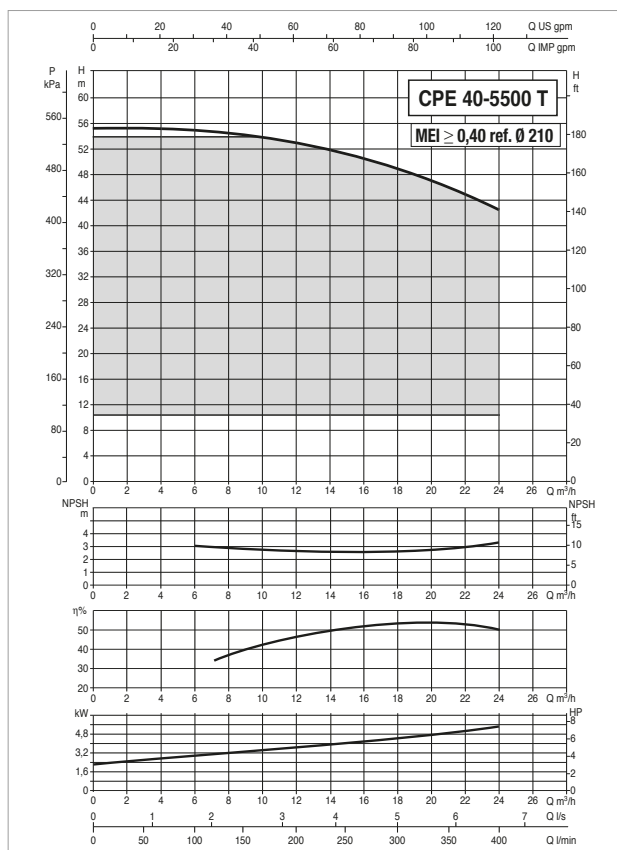
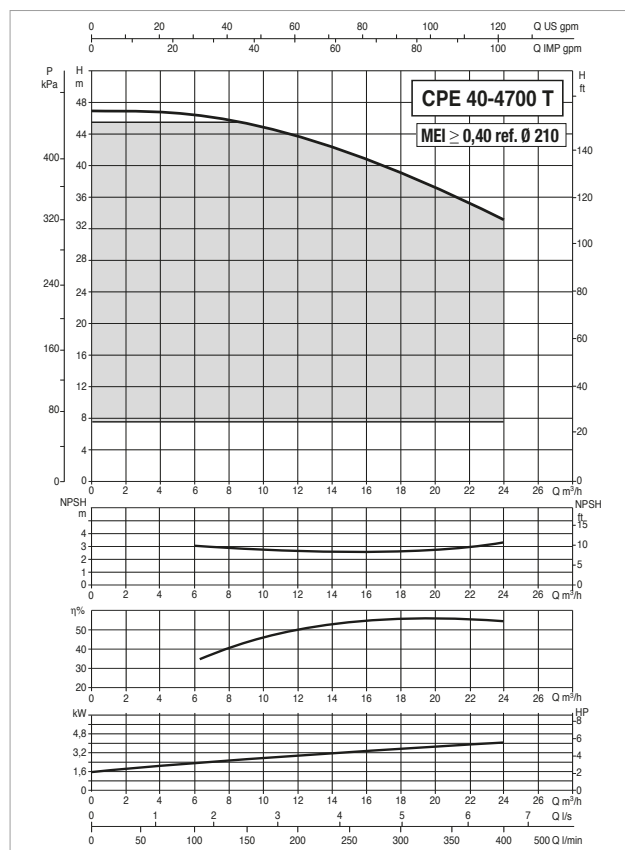


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CPE 40/2300 M MCE11/C IE2	1 x 220-240 V ~	2 poles	2905	1,57	1,10	1,5	12,0
CPE 40/2300 T MCE30/C IE2	3 x 400 V ~	2 poles	2905	1,57	1,10	1,5	t.b.d.
CPE 40/3500 M MCE22/C IE2	1 x 220-240 V ~	2 poles	2895	2,69	2,20	3,0	19,2
CPE 40/3500 T MCE30/C IE2	3 x 400 V ~	2 poles	2895	2,94	2,20	3,0	7,0

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																		L/A	L/B	H		
CPE 40/2300 M MCE11/C IE2	262	231	118	113	85	88	110	150	4X18	663	95	390	200	190	12	40	40	500	270	810	0,11	49
CPE 40/2300 T MCE30/C IE2	262	231	118	113	85	88	110	150	4X18	663	95	390	200	190	12	40	40	500	270	810	0,11	49
CPE 40/3500 M MCE22/C IE2	262	231	118	113	85	88	110	150	4X18	663	95	390	200	190	12	40	40	500	270	810	0,11	52
CPE 40/3500 T MCE30/C IE2	262	231	118	113	85	88	110	150	4X18	663	95	390	200	190	12	40	40	500	270	810	0,11	52

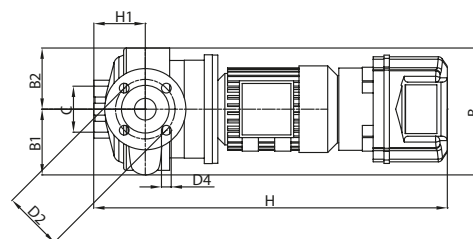
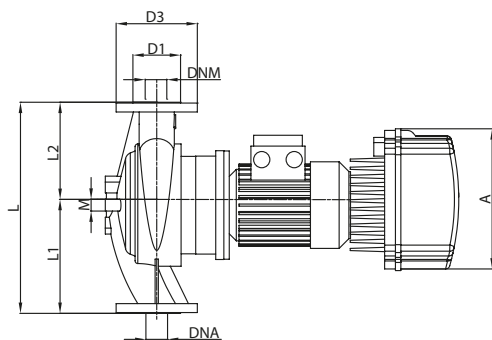
CPE 40 2 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -10 °C to +130°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.

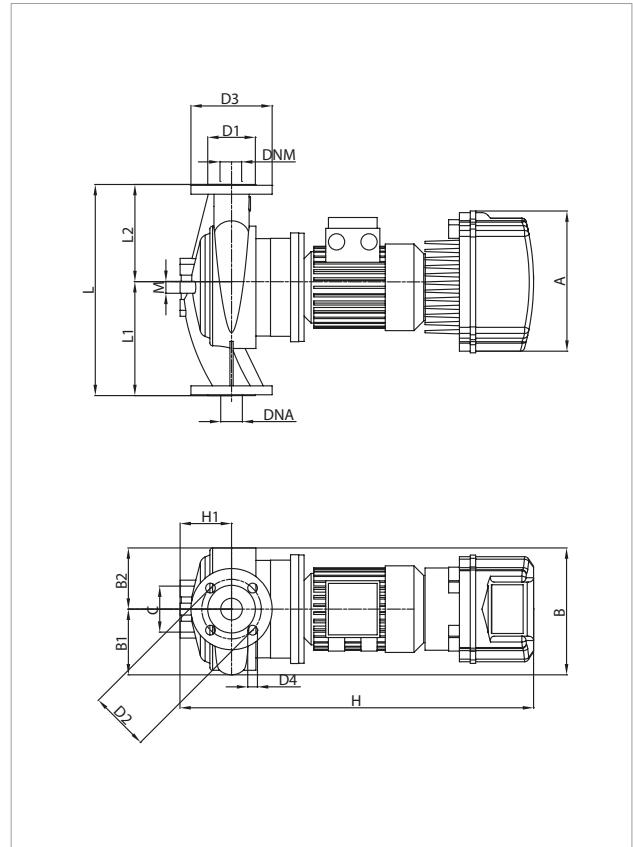
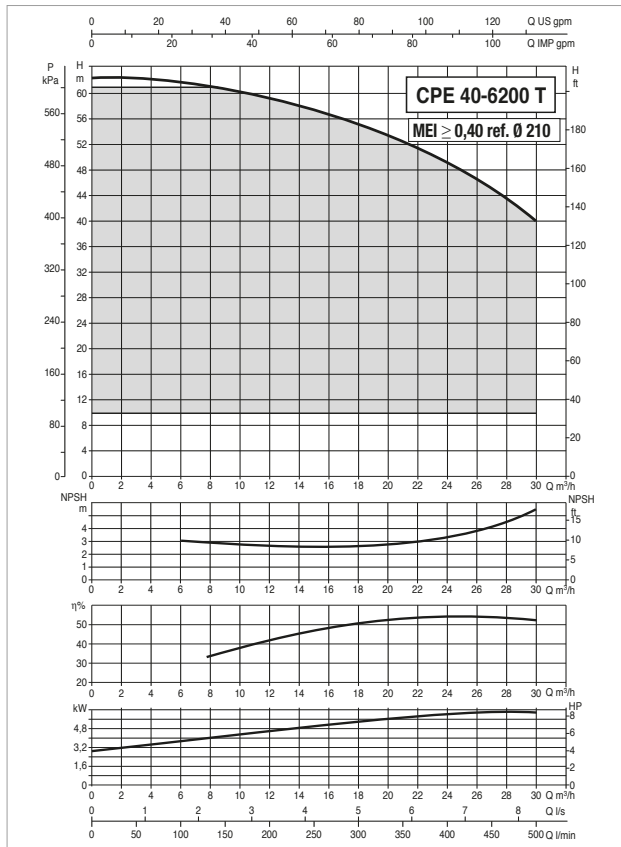


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CPE 40/4700 T MCE55/C IE2	3 x 400 V ~	2 poles	2900	5,11	4,00	5,5	11,1
CPE 40/5500 T MCE55/C IE2	3 x 400 V ~	2 poles	2900	6,90	5,50	7,5	14,2

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																		L/A	L/B	H		
CPE 40/4700 T MCE55/C IE2	353	286	159	127	-	88	110	150	4X18	735	100	380	200	180	-	40	40	650	400	945	0,25	58
CPE 40/5500 T MCE55/C IE2	353	286	159	127	-	88	110	150	4X18	735	100	380	200	180	-	40	40	650	400	945	0,25	63

CPE 40 2 POLI - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -10 °C to +130°C - Maximum ambient temperature: +40°C



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

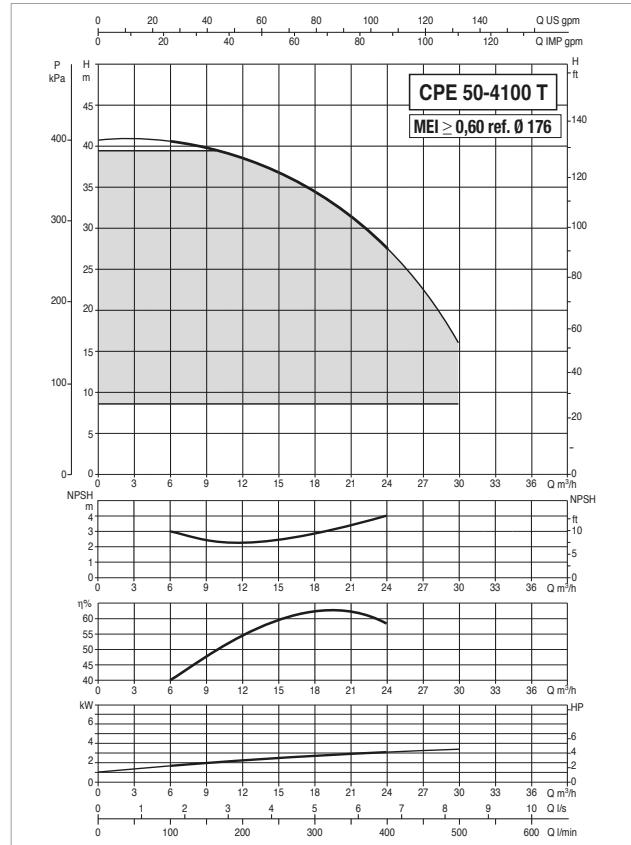
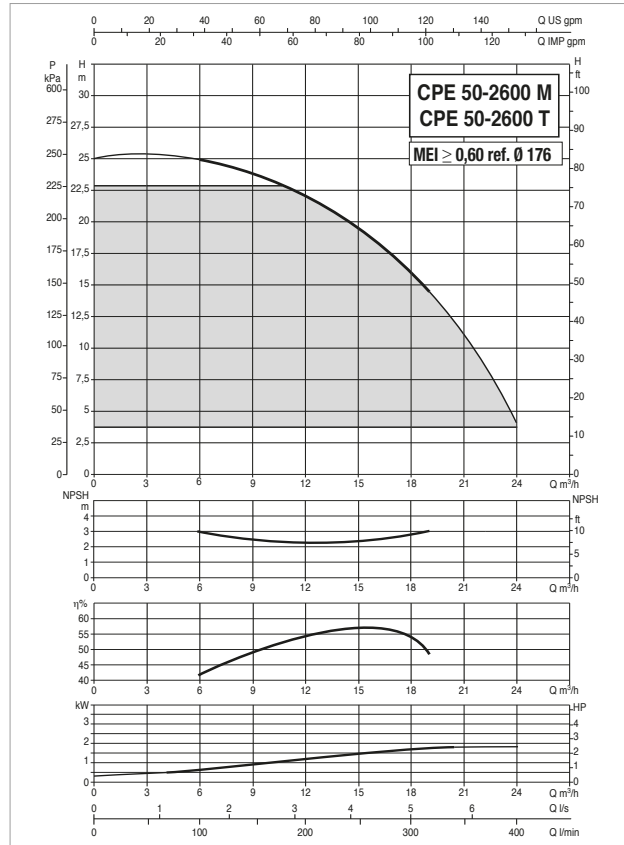
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CPE 40/6200 T MCE110/C IE2	3 x 400 V ~	2 poles	2900	9,64	7,50	10,0	19,9

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m ³)	WEIGHT kg
																		L/A	L/B	H		
CPE 40/6200 T MCE110/C IE2	426	286	159	127	-	88	110	150	4X18	785	100	380	200	180	-	40	40	650	400	945	0,25	64

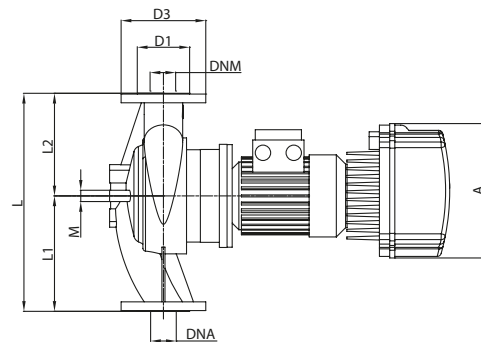
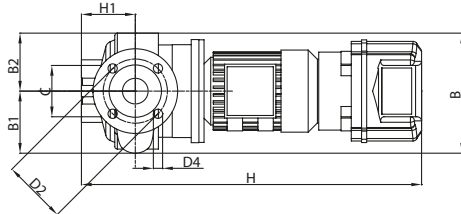
CPE 50 2 POLI - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -10 °C to +130 °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.

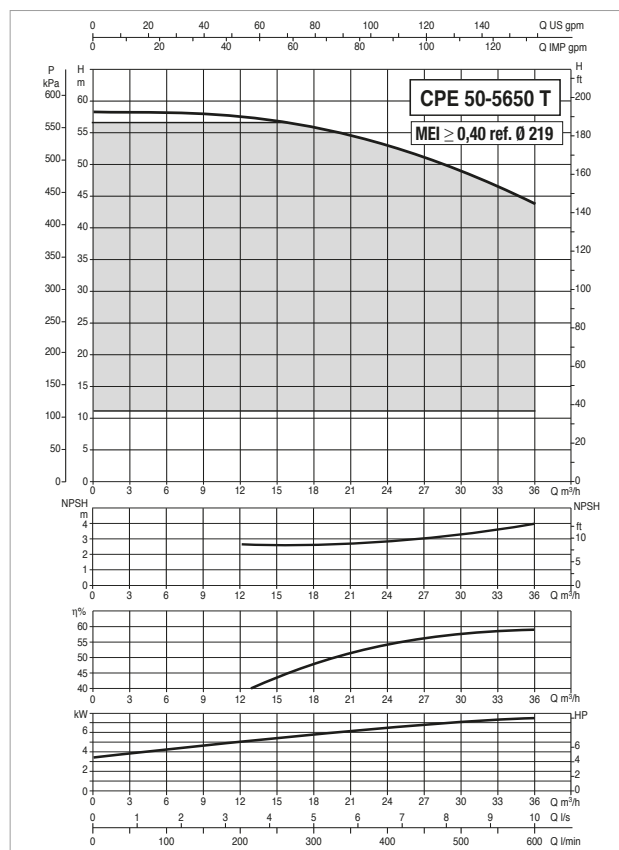
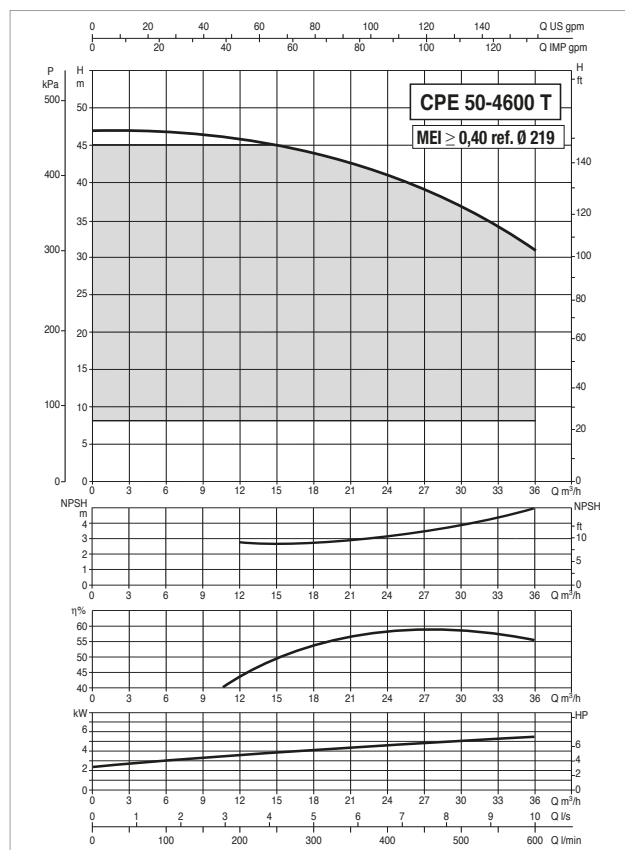


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CPE 50/2600 M MCE15/C IE2	1 x 220-240 V ~	2 poles	2894	1,95	1,50	2,0	14,4
CPE 50/2600 T MCE 30/C IE2	3 x 400 V ~	2 poles	2894	1,95	1,50	2,0	t.b.d.
CPE 50/4100 T MCE30/C IE2	3 x 400 V ~	2 poles	2916	3,91	4,00	5,5	8,4

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																		L/A	L/B	H		
CPE 50/2600 M MCE15/C IE2	262	233	120	113	100	102	125	165	4X18	663	105	425	225	200	12	50	50	500	270	810	0,11	49
CPE 50/2600 T MCE 30/C IE2	262	233	120	113	100	102	125	165	4X18	663	105	425	225	200	12	50	50	500	270	810	0,11	49
CPE 50/4100 T MCE30/C IE2	353	233	120	113	100	102	125	165	4X18	737	105	425	225	200	12	50	50	500	270	810	0,11	62

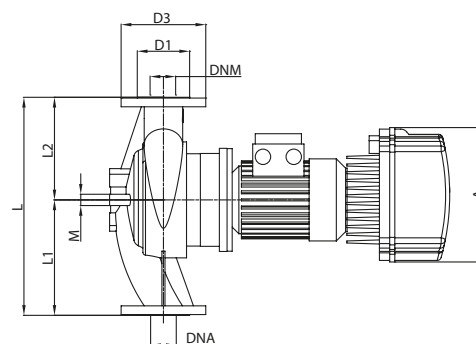
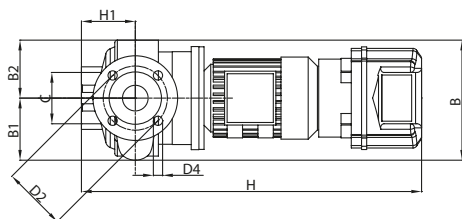
CPE 50 2 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -10 °C to +130°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.

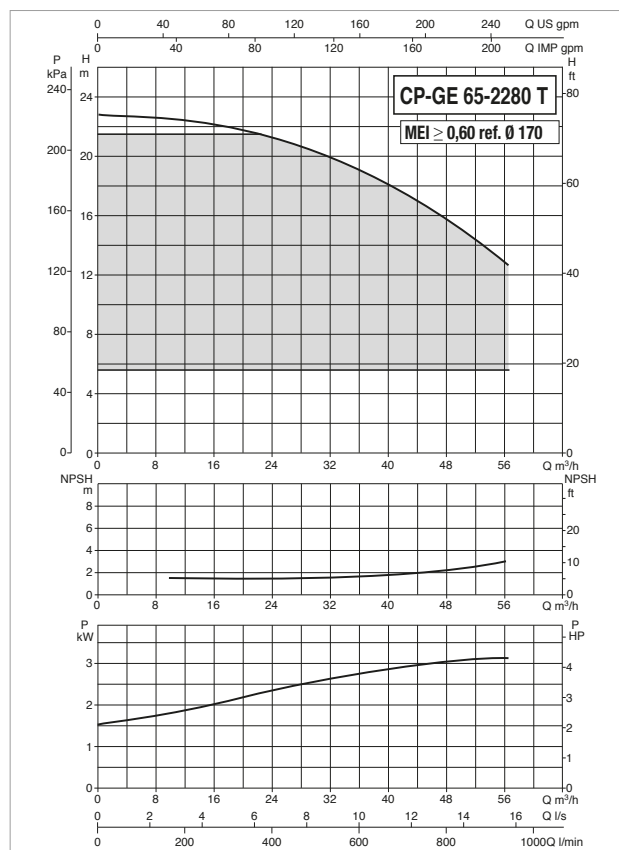
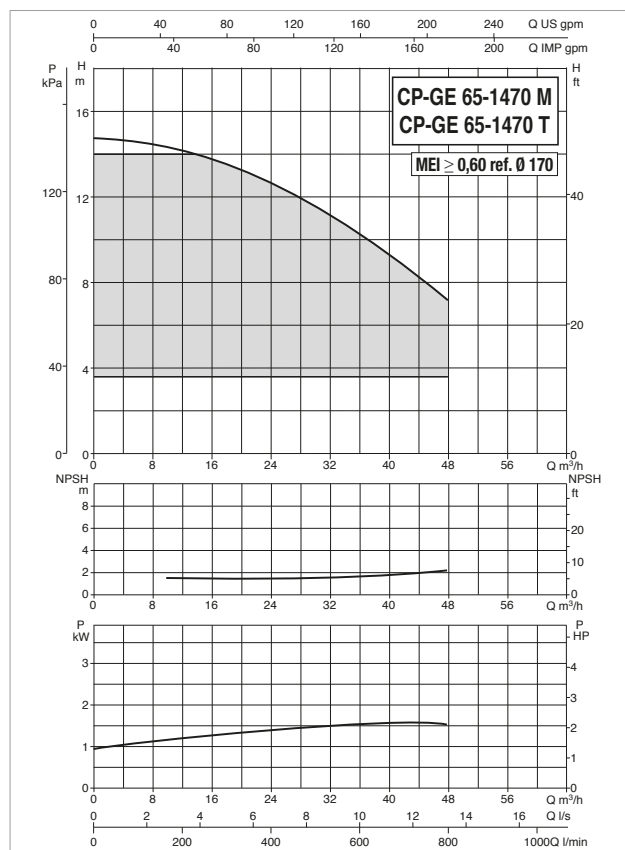


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CPE 50/4600 T MCE55/C IE2	3 x 400 V ~	2 poles	2900	6,90	5,50	7,5	14,2
CPE 50/5650 T MCE110/C IE2	3 x 400 V ~	2 poles	2900	9,64	7,50	10,0	19,9

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
	L/A	L/B	L/H																			
CPE 50/4600 T MCE55/C IE2	353	290	159	131	-	102	125	165	4X18	745	105	400	220	180	-	50	50	650	400	945	0,25	64
CPE 50/5650 T MCE110/C IE2	426	341	170,5	170,5	-	102	125	165	4X18	745	105	400	220	180	-	50	50	650	400	945	0,25	72

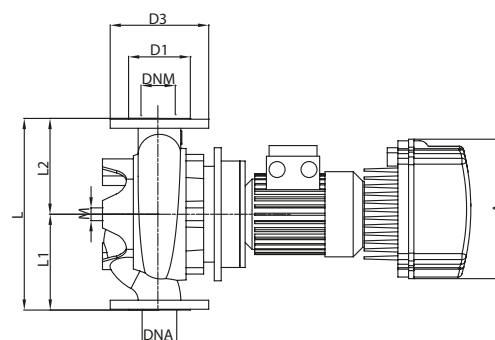
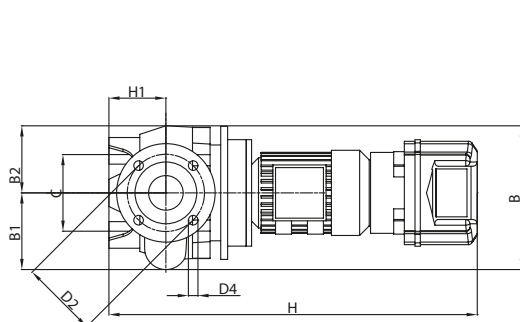
CP-GE 65 2 POLES - , ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.

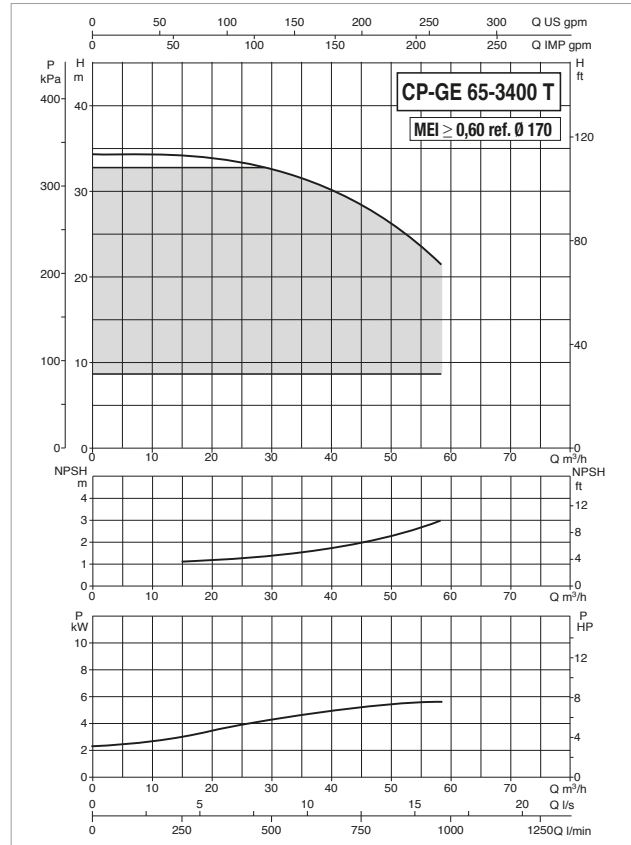
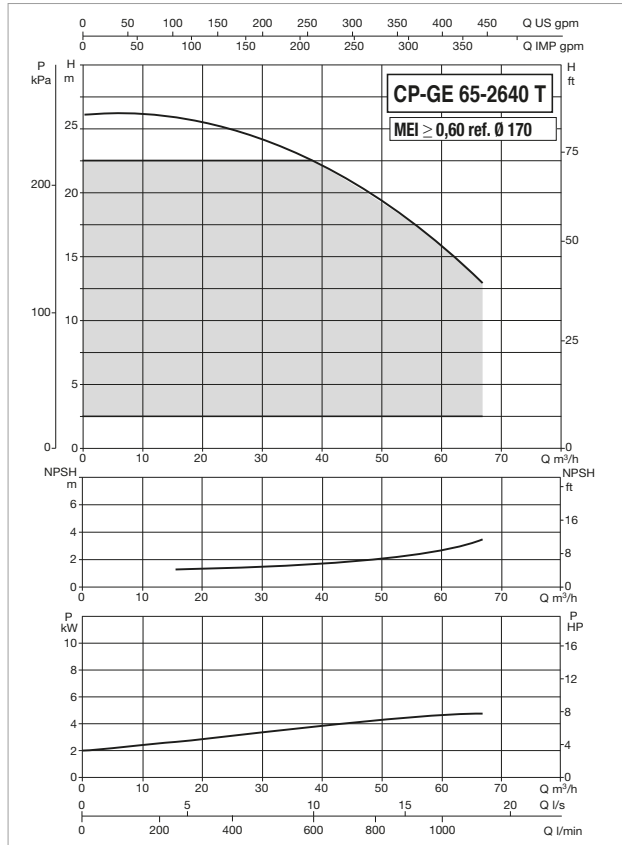


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CP-GE 65-1470/A/BAQE/ 1.5 M MCE11/C IE2	1 x 220-240 V ~	2 poles	2883	1,96	1,5	2,0	14,5
CP-GE 65-1470/A/BAQE/ 1.5 T MCE30/C IE2	3 x 400 V ~	2 poles	2883	1,96	1,5	2,0	t.b.d.
CP-GE 65-2280/A/BAQE/ 3 T MCE30/C IE2	3 x 400 V ~	2 poles	2882	3,55	3	4,0	7,2

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
	L/A	L/B	H																			
CP-GE 65-1470/A/BAQE/ 1.5 M MCE11/C IE2	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 MCE30/C IE2	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 65-2280/A/BAQE/ 3 T MCE30/C IE2	353	270	144	126	144	122	145	185	4X18	808	105	360	180	180	16	65	65	650	400	945	0,25	88

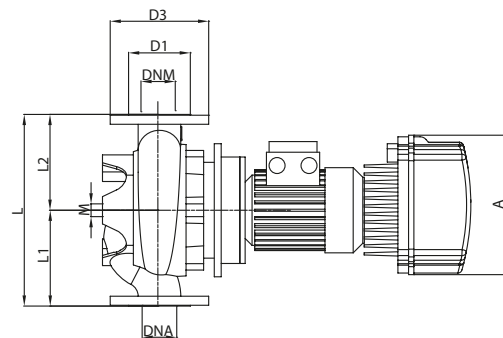
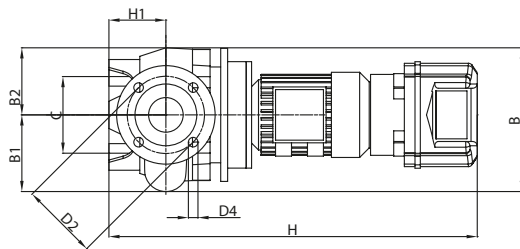
CP-GE 65 2 POLES - , ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.



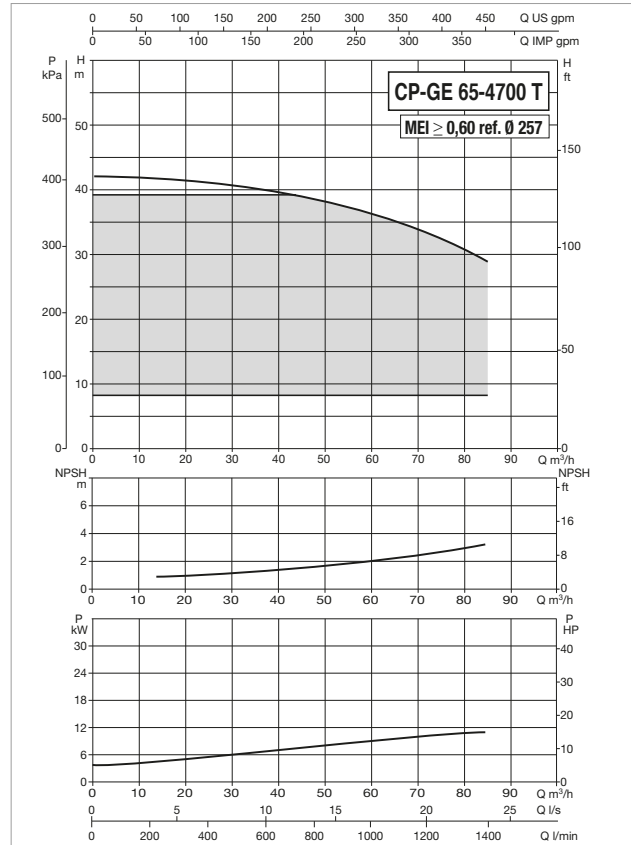
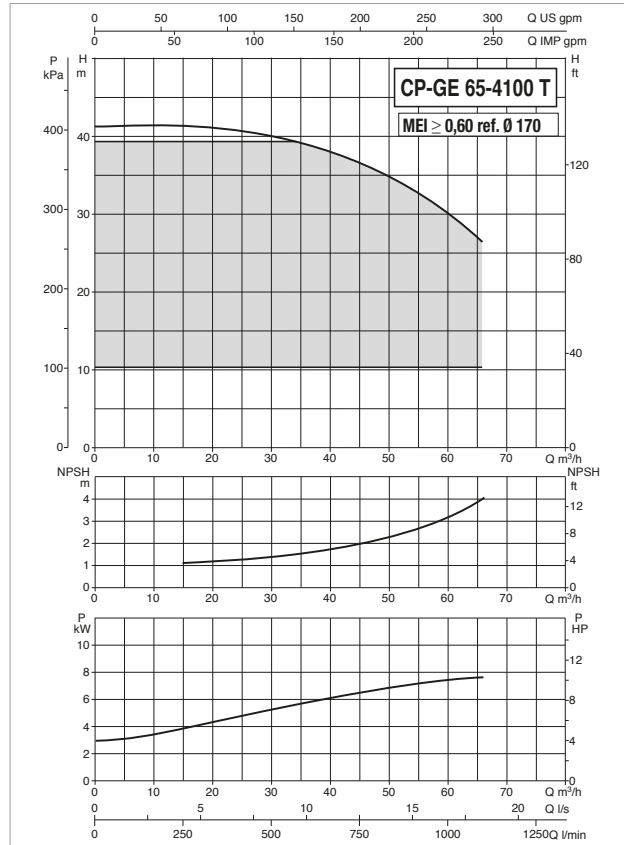
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CP-GE 65-2640/A/BAQE/ 4 T MCE55/C IE2 *	3 x 400 V ~	2 poles	2910	4,92	4	5,5	10,0
CP-GE 65-3400/A/BAQE/ 5.5 T MCE55/C IE2	3 x 400 V ~	2 poles	2913	6,94	5,5	7,7	13,7

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
																		L/A	L/B	H		
CP-GE 65-2640/A/BAQE/ 4 T MCE55/C IE2	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 MCE55/C IE2	353	270	144	126	144	122	145	185	4X18	936	105	360	180	180	16	65	65	650	400	945	0,25	128

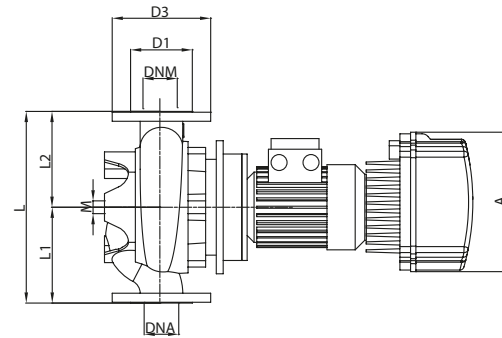
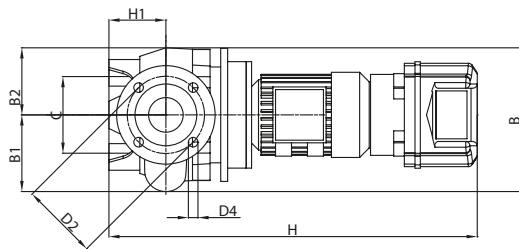
CP-GE 65 2 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.



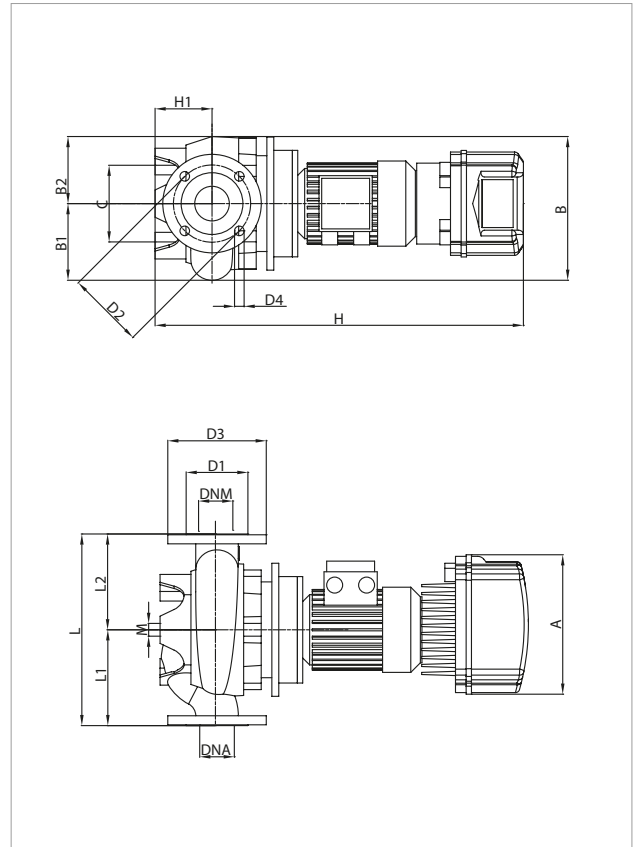
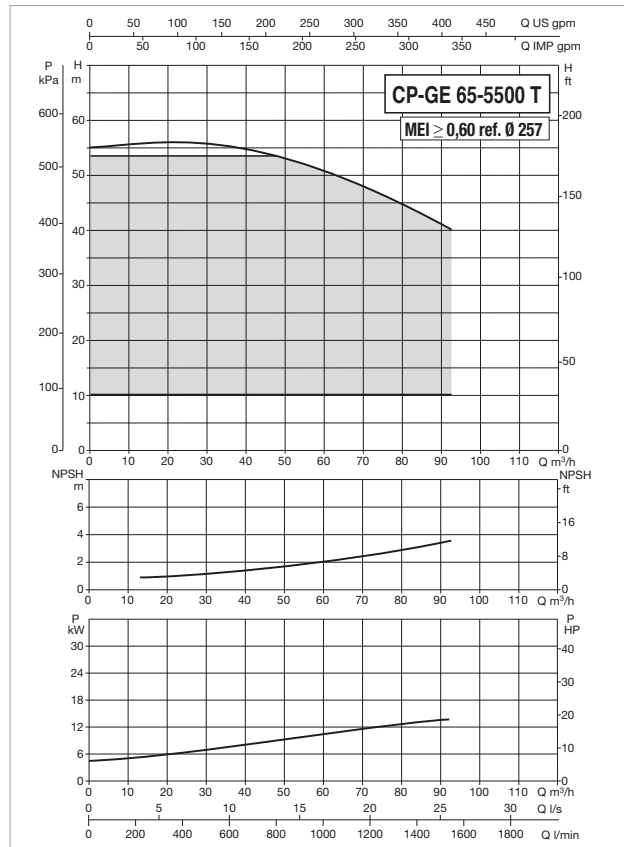
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CP-GE 65-4100/A/BAQE/ 7.5 T MCE110/C IE2 *	3 x 400 V ~	2 poles	2900	9,07	7,5	10,0	17,8
CP-GE 65-4700/A/BAQE/ 11 T MCE110/C IE2	3 x 400 V ~	2 poles	2940	14,75	11	15,0	28,6

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOL. (m ³)	WEIGHT kg
	L/A	L/B	H																			
CP-GE 65-4100/A/BAQE/ 7.5 T MCE110/C IE2	426	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 MCE110/C IE2	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 HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.

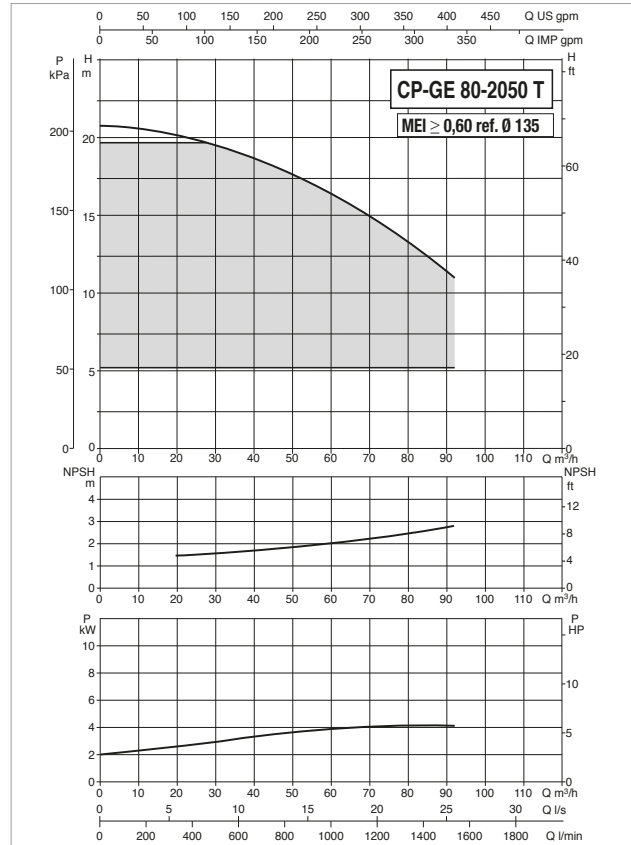
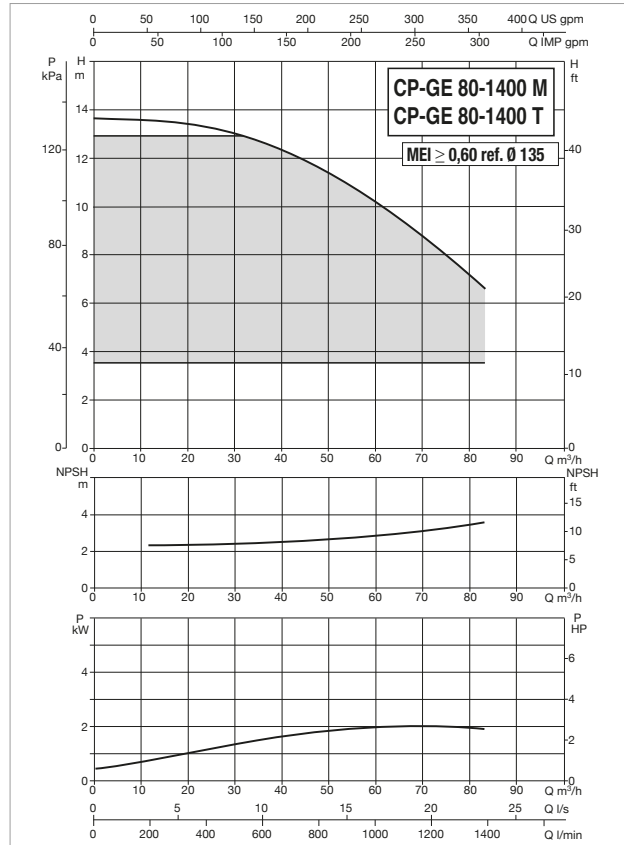
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CP-GE 65-5500/A/BAQE/ 15 T MCE150/C IE2 *	3 x 400 V ~	2 poles	2943	18,07	15	20,0	35,1

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOL. (m ³)	WEIGHT kg
																		L/A	L/B	H		
CP-GE 65-5500/A/BAQE/ 15 T MCE150/C IE2	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

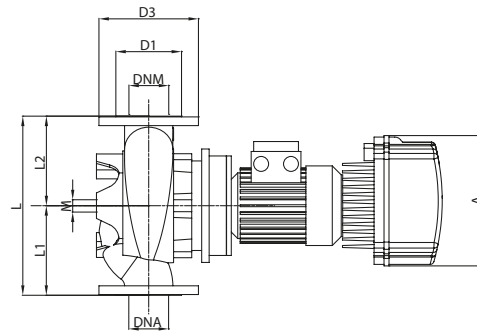
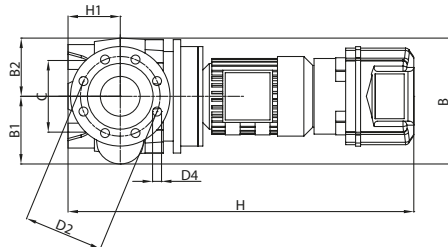
CP-GE 80 2 POLES - , ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.

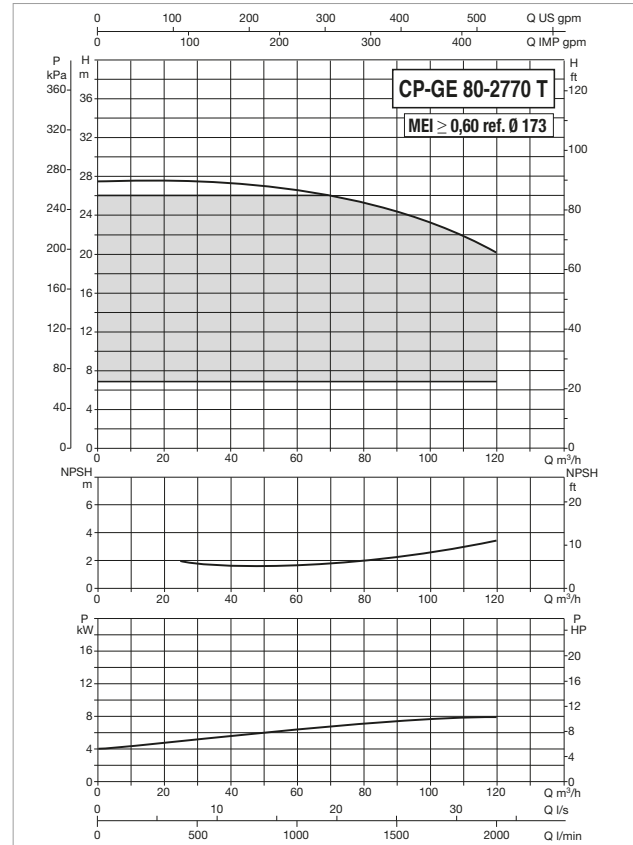
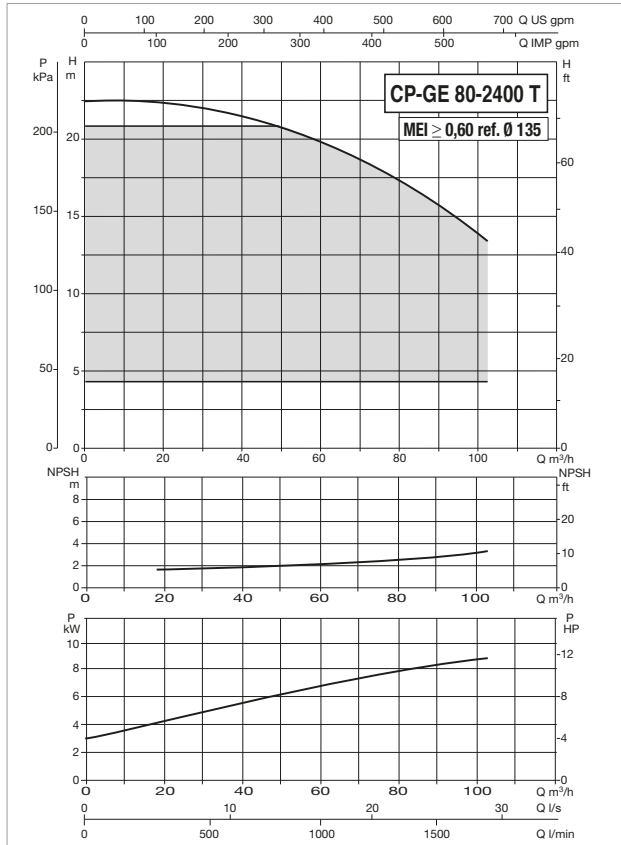


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CP-GE 80-1400/A/BAQE/ 2.2 M MCE22/C IE2	1 x 220-240 V ~	2 poles	2874	2,94	2,2	3,0	20,7
CP-GE 80-1400/A/BAQE/ 2.2 T MCE30/C IE2	3 x 400 V ~	2 poles	2874	2,94	2,2	3,0	t.b.d.
CP-GE 80-2050/A/BAQE/ 4 T MCE55/C IE2	3 x 400 V ~	2 poles	2914	5,46	4	5,5	10,9

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
																		L/A	L/B	H		
CP-GE 80-1400/A/BAQE/ 2.2 M MCE22/C IE2	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 80-1400/A/BAQE/ 2.2 T MCE30/C IE2	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 MCE55/C IE2	353	267	135	125	144	138	160	200	8X18	765	105	360	180	180	16	80	80	650	400	945	0,25	99

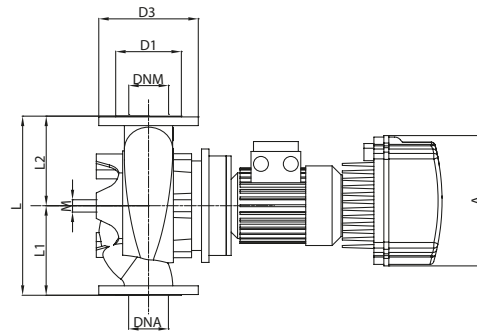
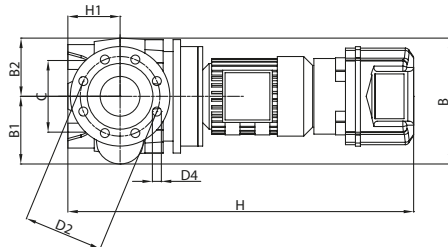
CP-GE 80 2 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.



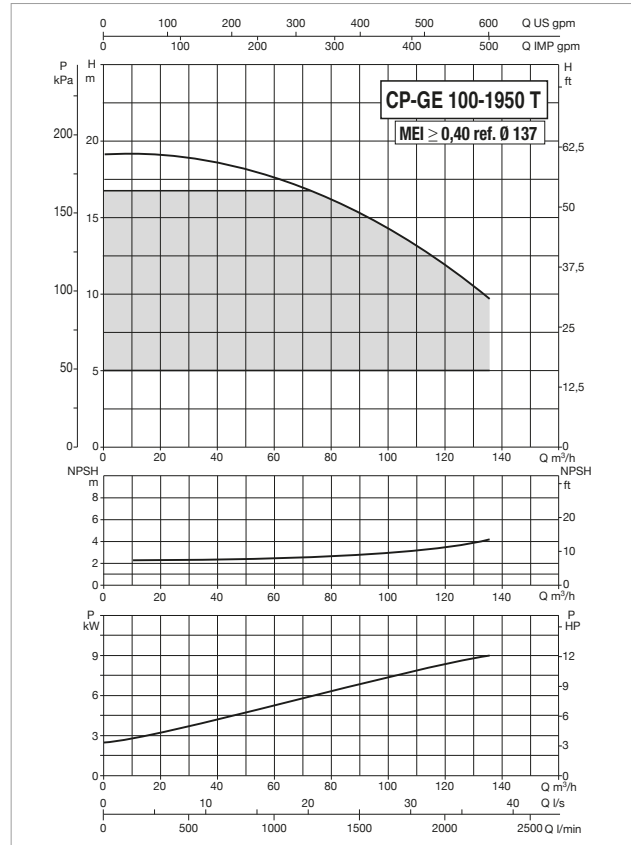
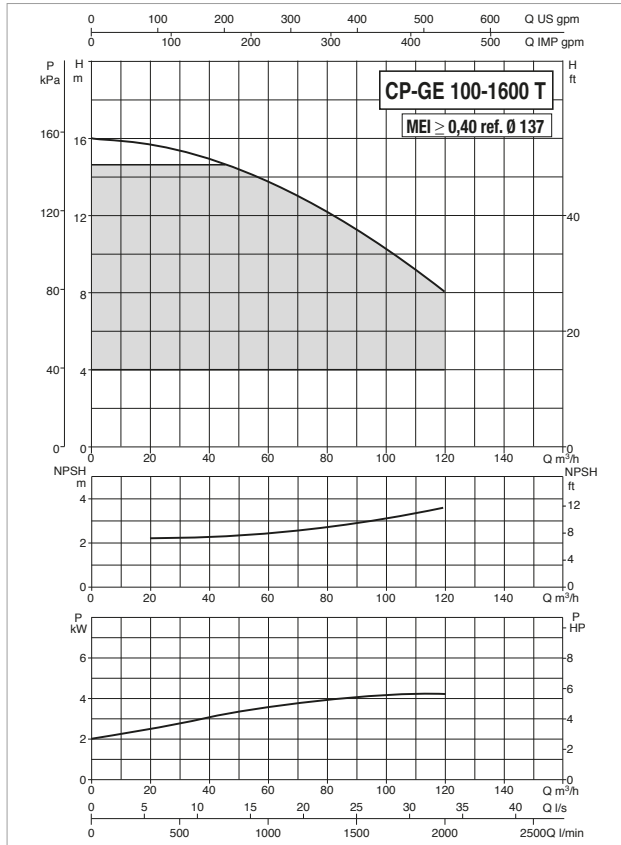
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CP-GE 80-2400/A/BAQE/ 5.5 T MCE55/C IE2 *	3 x 400 V ~	2 poles	2910	6,69	5,5	7,5	13,3
CP-GE 80-2770/A/BAQE/ 7.5 T MCE110/C IE2 *	3 x 400 V ~	2 poles	2905	9,61	7,5	10,0	18,8

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOL. (m ³)	WEIGHT kg
																		L/A	L/B	H		
CP-GE 80-2400/A/BAQE/ 5.5 T MCE55/C IE2	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 MCE110/C IE2	426	341	178	151	144	138	160	200	8X18	1038	115	440	220	220	16	80	80	650	400	945	0,25	88

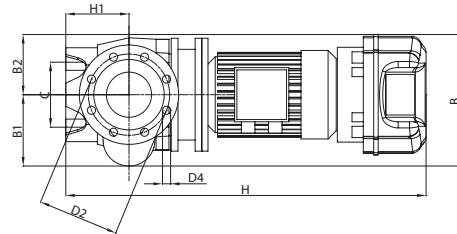
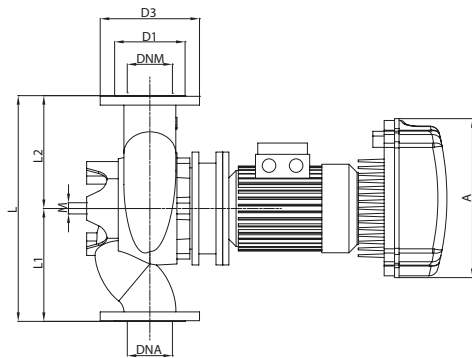
CP-GE 100 2 POLES - , ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.

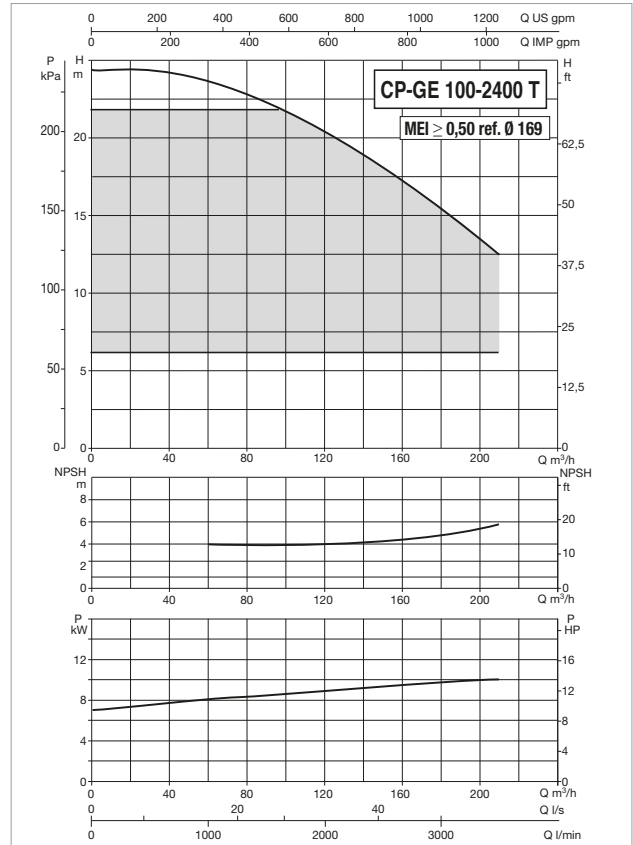
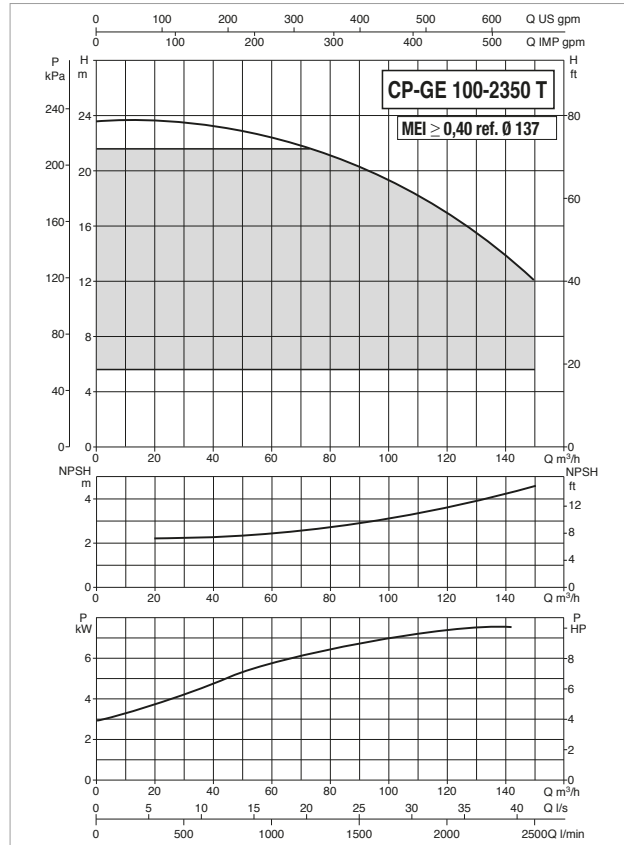


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CP-GE 100-1600/A/BAQE/ 4 T MCE55/C IE2	3 x 400 V ~	2 poles	2918	5,58	4	5,5	11,2
CP-GE 100-1950/A/BAQE/ 5.5 T MCE55/C IE2	3 x 400 V ~	2 poles	2918	7,34	5,5	7,5	14,4

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
																		L/A	L/B	H		
CP-GE 100-1600/A/BAQE/ 4 T MCE55/C IE2	353	341	158	126	144	158	180	220	8x18	898	140	500	250	250	16	100	100	650	400	945	0,25	86
CP-GE 100-1950/A/BAQE/ 5.5 T MCE55/C IE2	353	341	158	150	144	158	180	220	8x18	1026	140	500	250	250	16	100	100	650	400	945	0,25	92

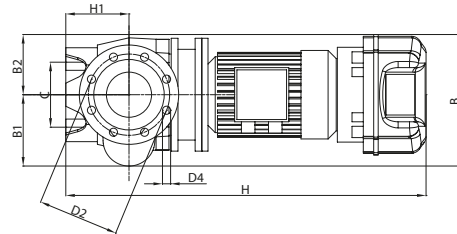
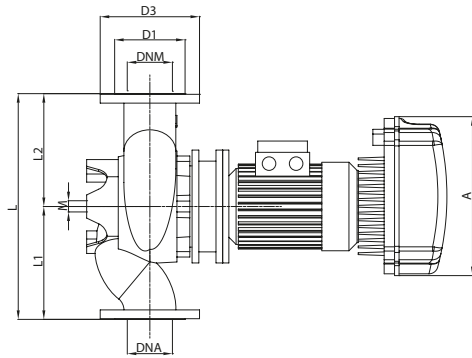
CP-GE 100 2 POLES - , ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.



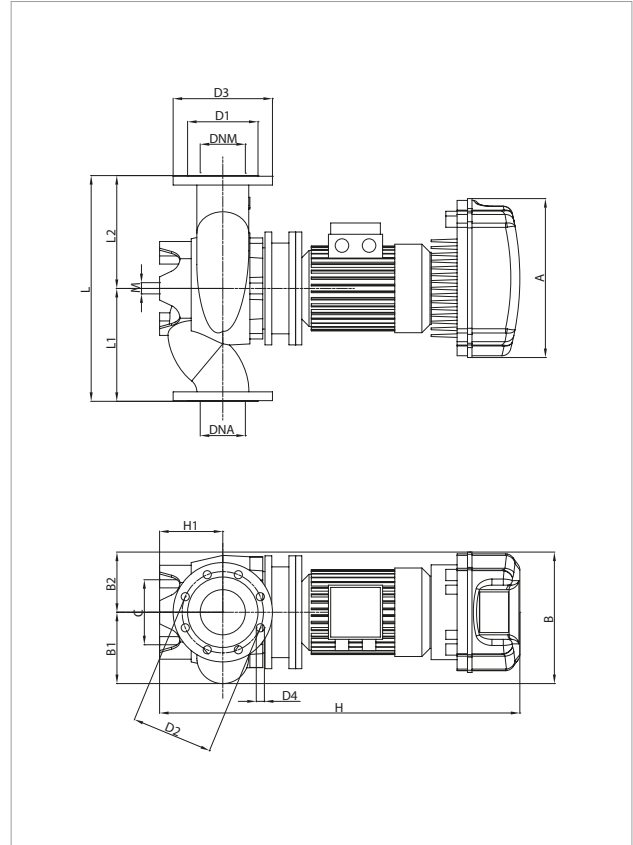
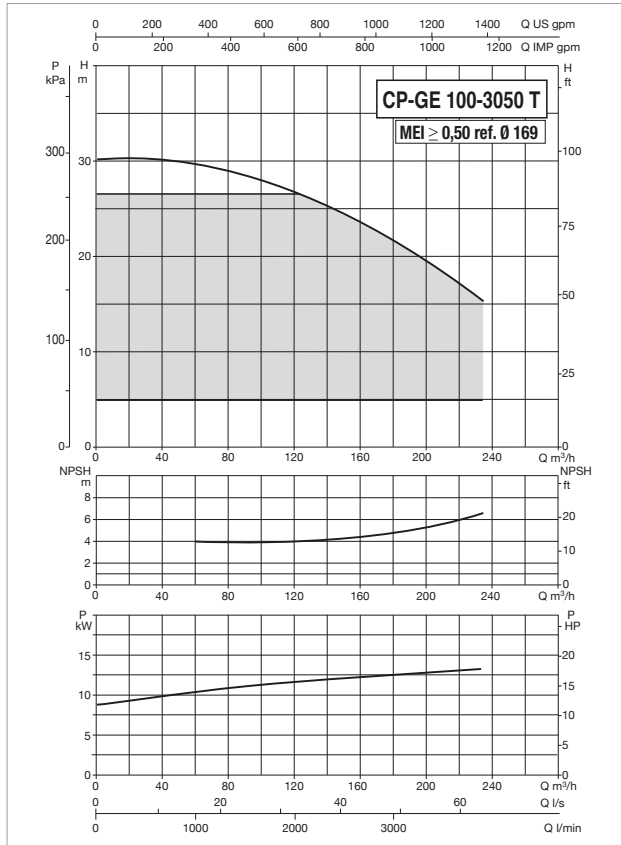
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CP-GE 100-2350/A/BAQE/ 7.5 T MCE110/C IE2 *	3 x 400 V ~	2 poles	2906	9,69	7,5	10,0	18,9
CP-GE 100-2400/A/BAQE/ 11 T MCE110/C IE2	3 x 400 V ~	2 poles	2940	14,59	11	15,0	28,3

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
																		L/A	L/B	H		
CP-GE 100-2350/A/BAQE/ 7.5 T MCE110/C IE2	426	341	158	150	144	158	180	220	8x18	1064	140	500	250	250	16	100	100	700	600	970	0,41	110
CP-GE 100-2400/A/BAQE/ 11 T MCE110/C IE2	426	346	193	153	230	158	180	220	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 HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - SINGLE, FLANGED, WITH MCE/C INVERTER

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.

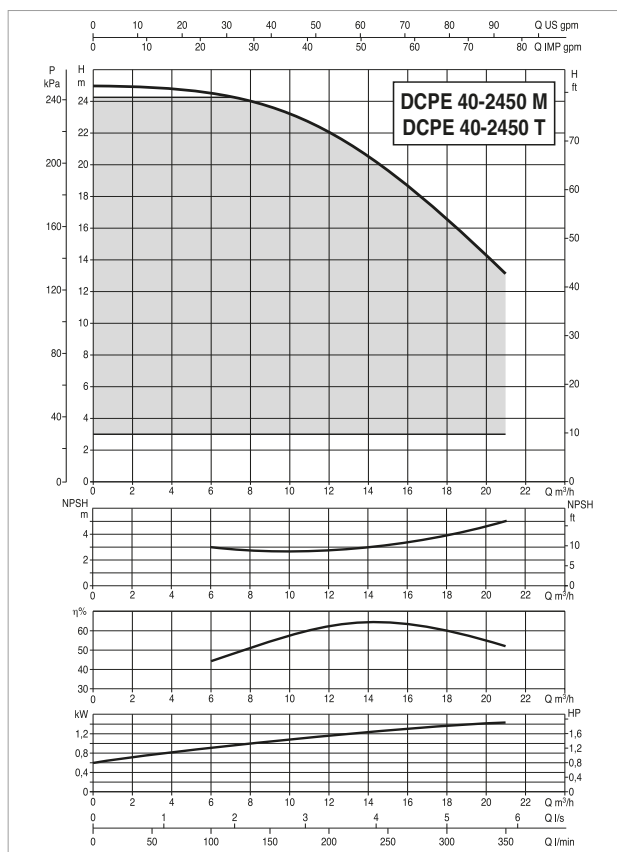
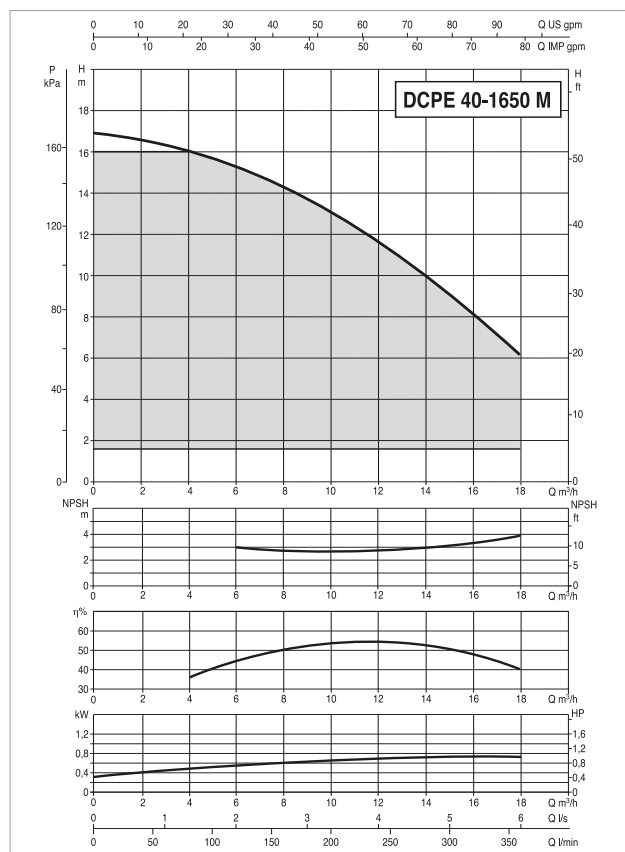
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
CP-GE 100-3050/A/BAQE/ 15 T MCE150/C IE2 *	3 x 400 V ~	2 poles	2941	17,79	15	20,0	34,6

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

MODEL	A	B	B1	B2	C	D1	D2	D3	D4	H	H1	L	L1	L2	M	DNA	DNM	PACKING DIMENSIONS			VOL. (m ³)	WEIGHT kg
																		L/A	L/B	H		
CP-GE 100-3050/A/BAQE/ 15 T MCE150/C IE2	426	346	193	153	230	158	180	220	8x18	1092	140	550	275	275	16	100	100	700	600	970	0,41	159

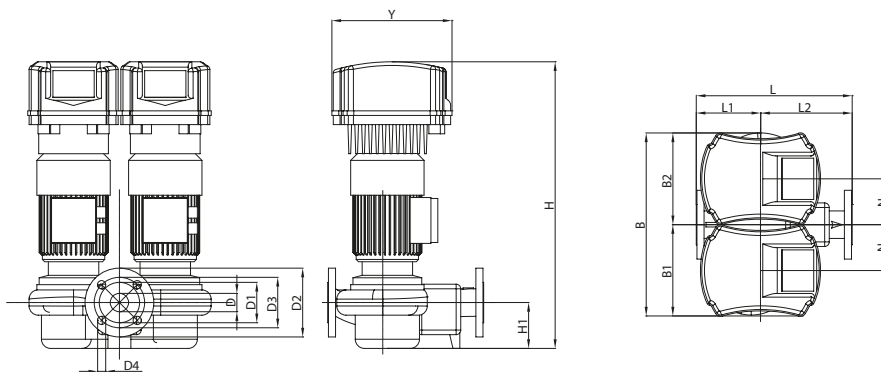
DCPE 40 2 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -10 °C to +130°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.

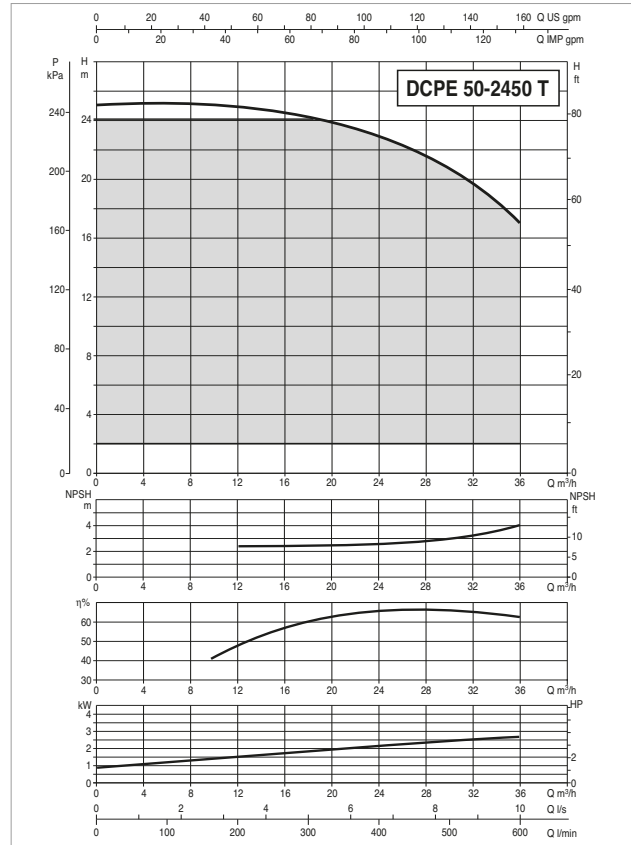
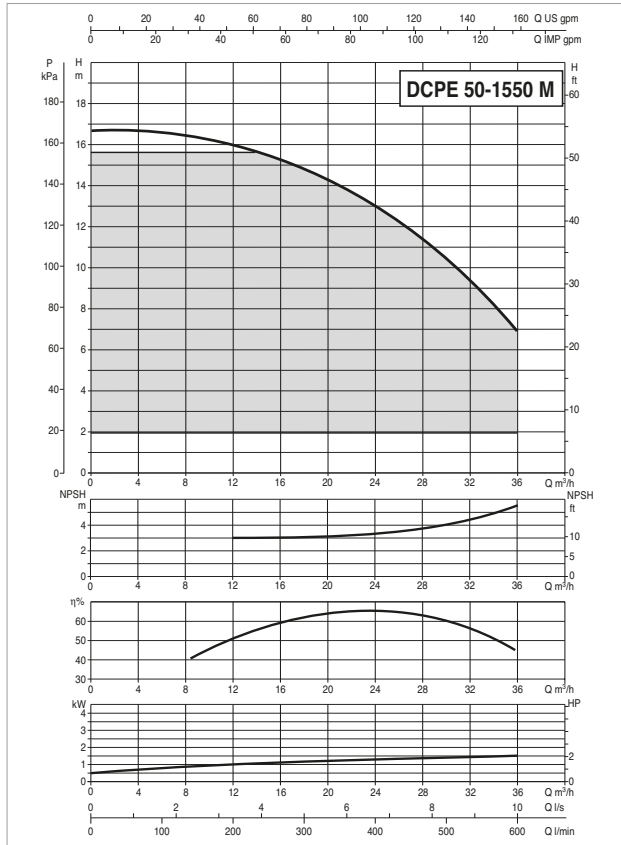


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCPE 40/1650 M MCE11/C IE2	1 x 220-240 V ~	2 poles	2900	1,10	0,75	1,0	9,0
DCPE 40/2450 M MCE15/C IE2	1 x 220-240 V ~	2 poles	2900	2,17	1,5	2,0	15,8
DCPE 40/2450 T MCE30/C IE2	3 x 400 V ~	2 poles	2900	2,17	1,5	2,0	t.b.d.

MODEL	L	L1	L2	B	B1	B2	H	H1	N	D	D1	D2	D3	D4	Y	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																L/A	L/B	H		
DCPE 40/1650 M MCE11/C IE2	340	130	210	400	200	200	625	100	100	40 PN16	88	150	110		262	520	400	710	0,15	54
DCPE 40/2450 M MCE15/C IE2	340	130	210	400	200	200	625	100	100	40 PN16	88	150	110	4 HOLES Ø18	262	520	400	710	0,15	58
DCPE 40/2450 T MCE30/C IE2	340	130	210	400	200	200	625	100	100	40 PN16	88	150	110		262	520	400	710	0,15	58

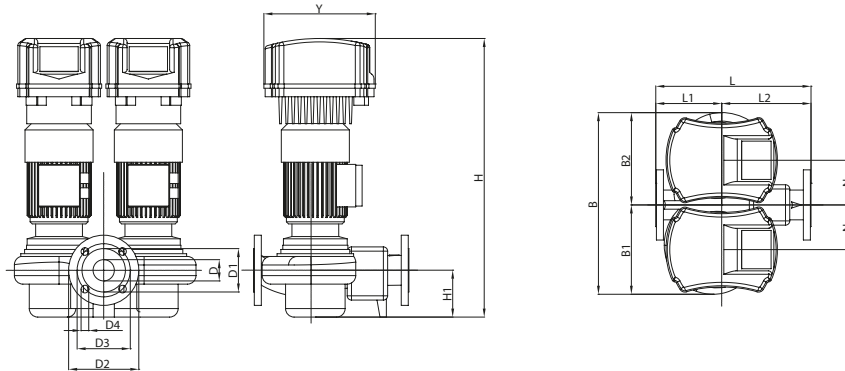
DCPE 50 2 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -10 °C to +130°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.



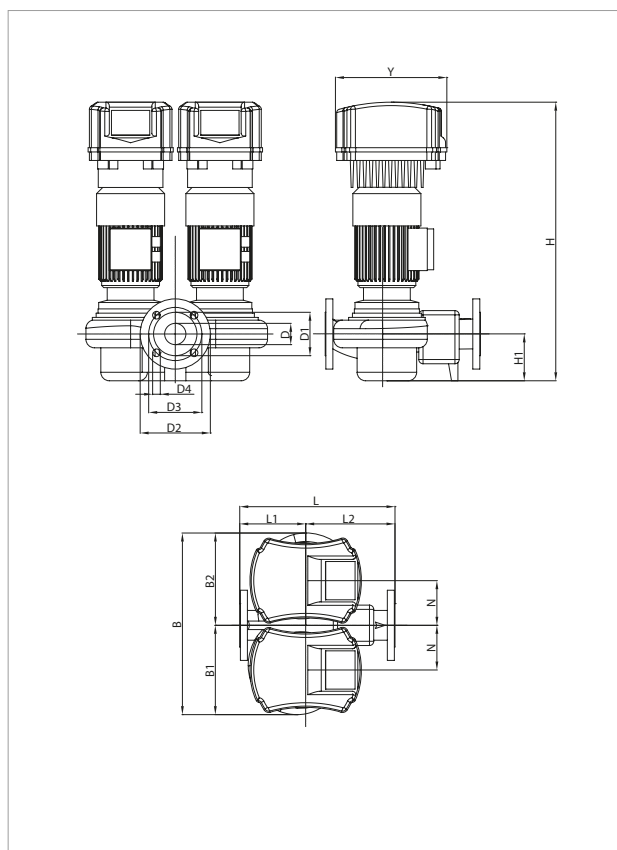
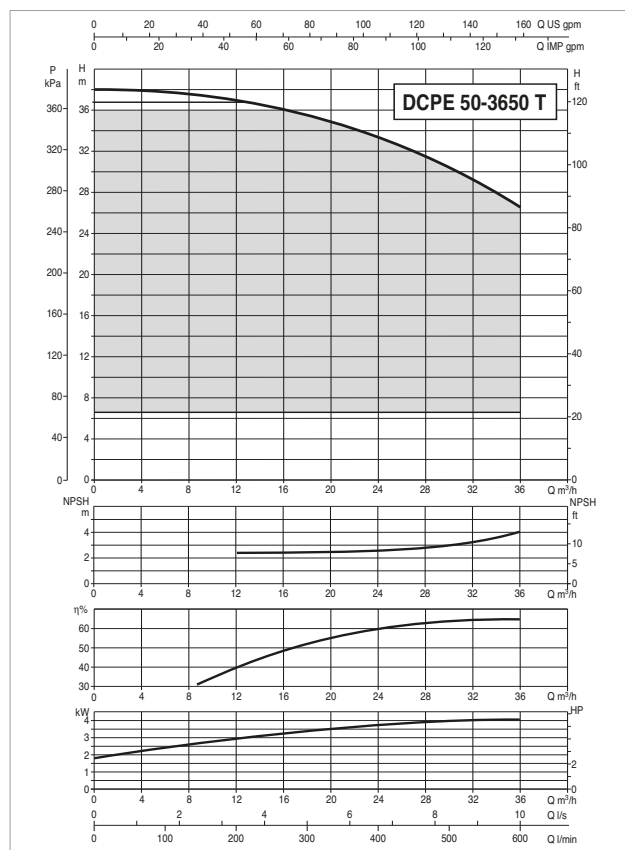
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCPE 50/1550 M MCE15/C IE2	1 x 220-240 V ~	2 poles	2900	2,17	1,5	2,0	15,8
DCPE 50/1550 T MCE30/C IE2	3 x 400 V ~	2 poles	2900	2,17	1,5	2,0	t.b.d.
DCPE 50/2450 T MCE30/C IE2 *	3 x 400 V ~	2 poles	2900	3,72	3,0	4,0	6,8

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

MODEL	L	L1	L2	B	B1	B2	H	H1	N	D	D1	D2	D3	D4	Y	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
																L/A	L/B	H		
DCPE 50/1550 M MCE15/C IE2	365	145	220	427	217	210	655	110	105	50 PN16	102	165	125	4 HOLES Ø18	262	520	400	710	0,15	60
DCPE 50/1550 T MCE30/C IE2	365	145	220	427	217	210	655	110	105	50 PN16	102	165	125		262	520	400	710	0,15	60
DCPE 50/2450 T MCE30/C IE2	365	145	220	427	217	210	655	110	105	50 PN16	102	165	125		353	520	400	710	0,15	75

DCPE 50 2 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -10 °C to +130°C - Maximum ambient temperature: +40°C



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

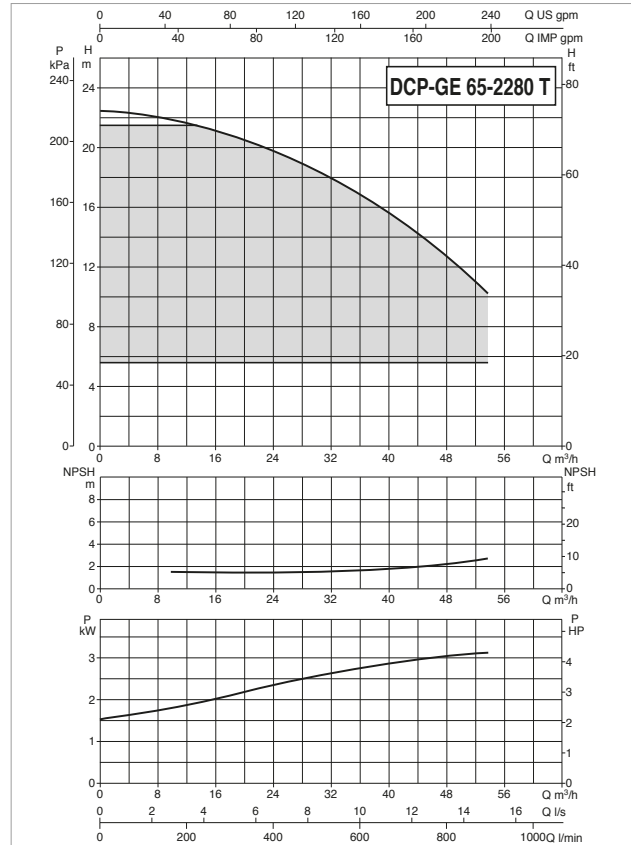
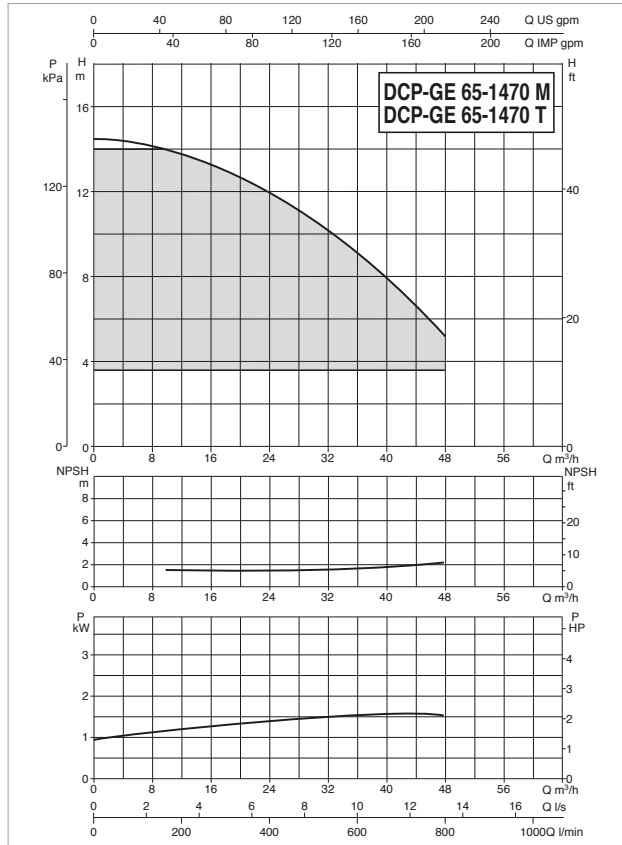
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCPE 50/3650 T MCE55/C IE2	3 x 400 V ~	2 poles	2900	5,11	4,0	5,5	9,6

MODEL	L	L1	L2	B	B1	B2	H	H1	N	D	D1	D2	D3	D4	Y	PACKING DIMENSIONS			VOLUME (m ³)	WEIGHT kg
																L/A	L/B	H		
DCPE 50/3650 T MCE55/C IE2	410	170	240	480	235	245	735	110	120	50 PN16	102	165	125	4 HOLES Ø18	353	700	600	970	0,41	95

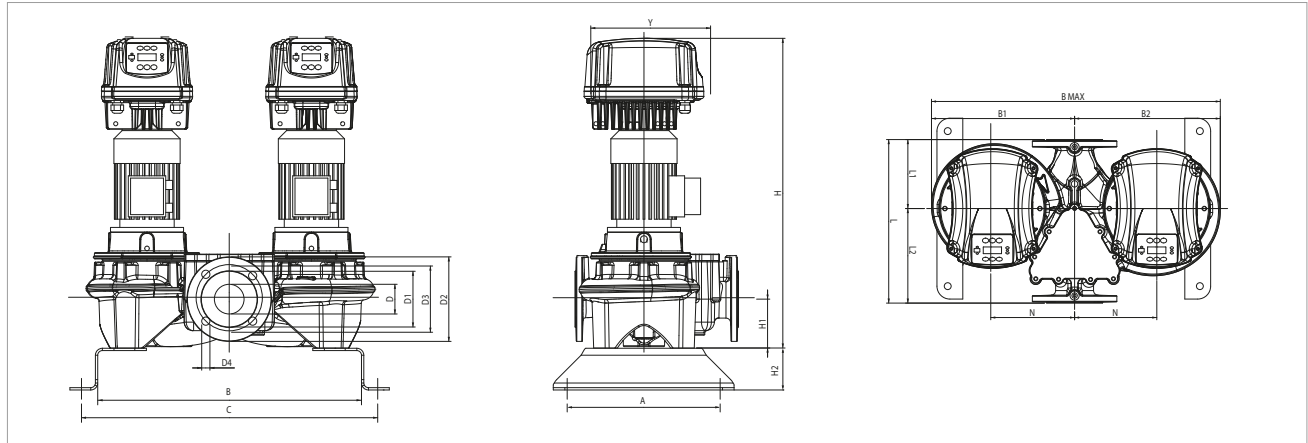
DCP-GE 65 2 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



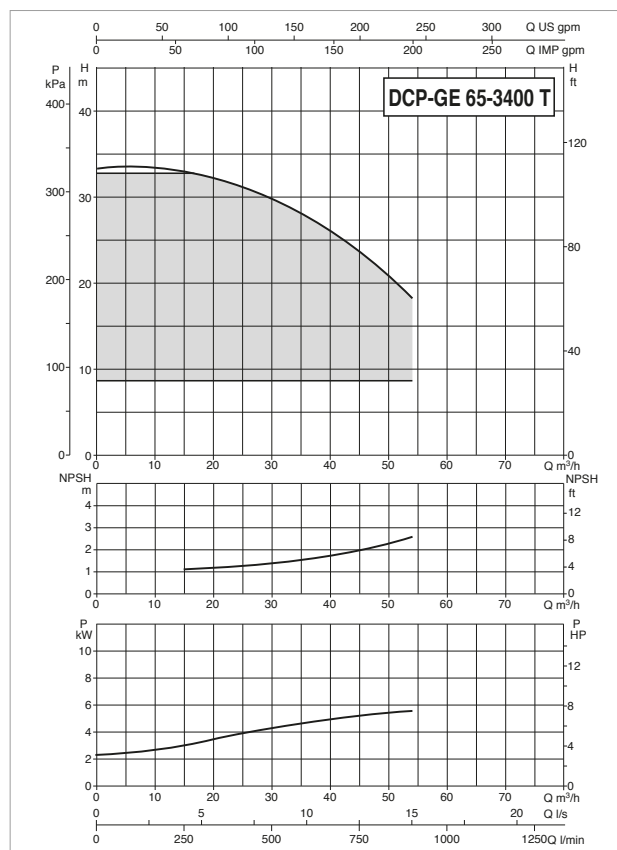
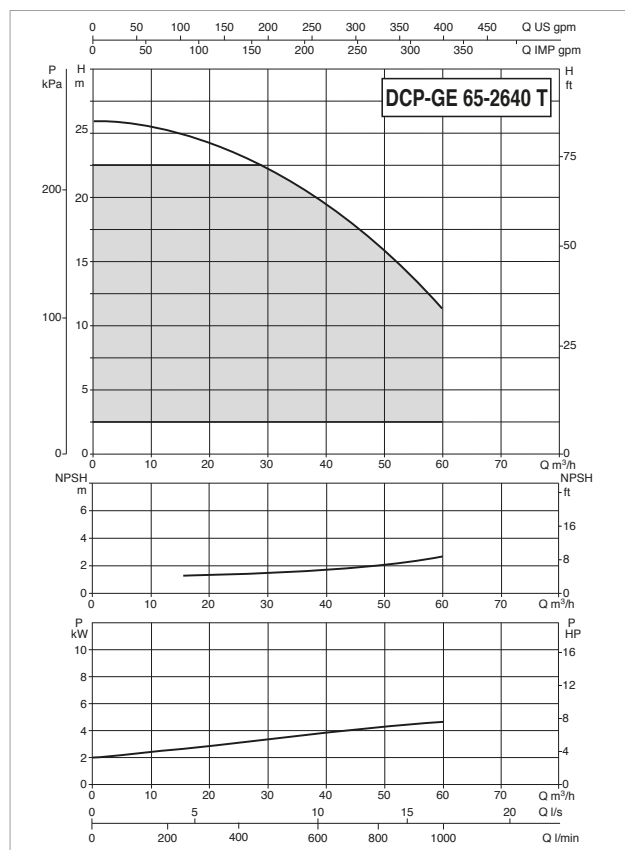
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCP-GE 65-1470/A/BAQE/ 1.5 M MCE11/C IE2	1 x 220-240 V ~	2 poles	2883	1,96	1,5	2,0	14,5
DCP-GE 65-1470/A/BAQE/ 1.5 T MCE30/C IE2	3 x 400 V ~	2 poles	2883	1,96	1,5	2,0	t.b.d.
DCP-GE 65-2280/A/BAQE/ 3 T MCE30/C IE2 *	3 x 400 V ~	2 poles	2882	3,55	3	4,0	7,2

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
																					L/A	L/B	H		
DCP-GE 65-1470/A/BAQE/ 1.5 M MCE11/C IE2	330	569	639	315	320	635	122	185	145	18	4	262	745	107	100	358	151	207	M16	180	405	700	848	0,24	150
DCP-GE 65-1470/A/BAQE/ 1.5 T MCE30/C IE2	330	569	639	315	320	635	122	185	145	18		262	748	107	100	358	151	207	M16	180	405	700	848	0,24	148
DCP-GE 65-2280/A/BAQE/ 3 T MCE30/C IE2	330	569	639	315	320	635	122	185	145	18		352	828	107	100	358	151	207	M16	180	405	750	925	0,28	193

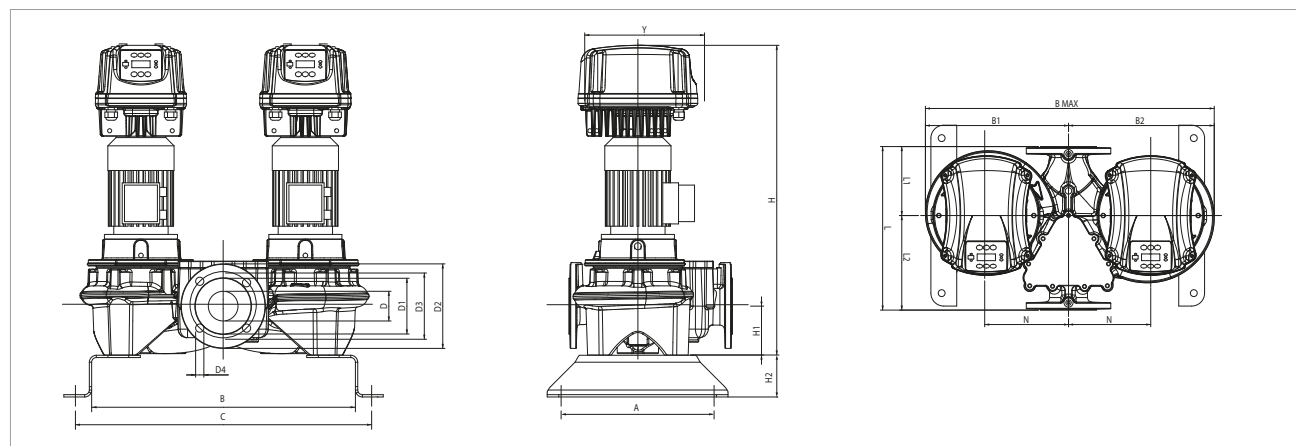
DCP-GE 65 2 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



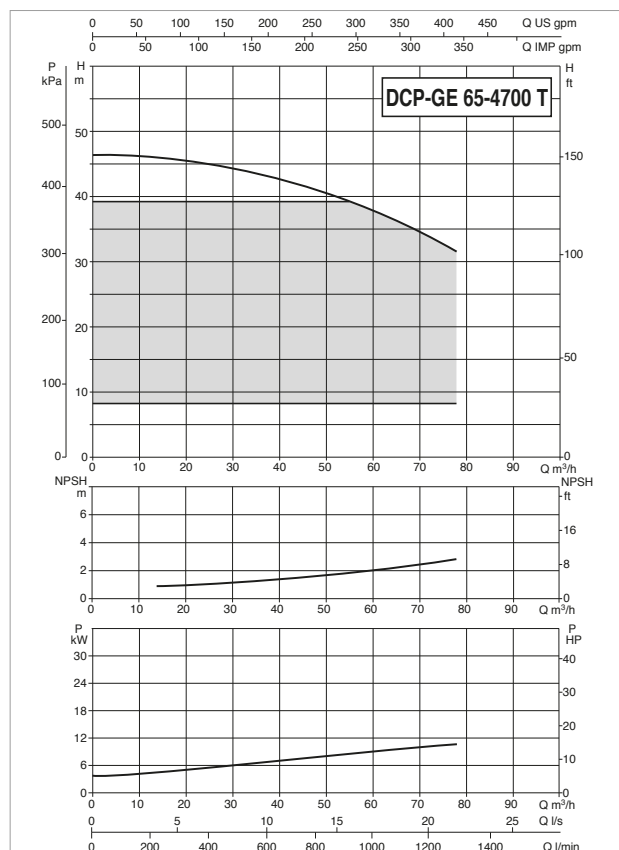
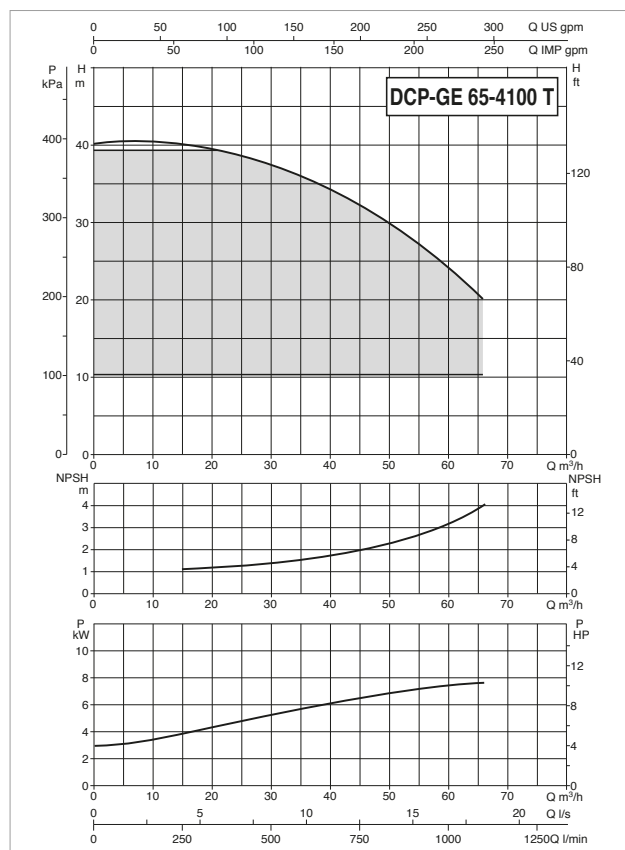
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCP-GE 65-2640/A/BAQE/ 4 T MCE55/C IE2 *	3 x 400 V ~	2 poles	2910	4,92	4	5,5	10,0
DCP-GE 65-3400/A/BAQE/ 5.5 T MCE55/C IE2 *	3 x 400 V ~	2 poles	2913	6,94	5,5	7,7	13,7

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
	L/A	L/B	H																						
DCP-GE 65-2640/A/BAQE/ 4 T MCE55/C IE2	330	569	639	315	320	635	122	185	145	18	4	352	843	107	100	358	151	207	M16	180	405	700	943	0,27	206
DCP-GE 65-3400/A/BAQE/ 5.5 T MCE55/C IE2	330	569	639	324	329	653	122	185	145	18		352	932	107	100	358	151	207	M16	180	405	700	1032	0,29	272

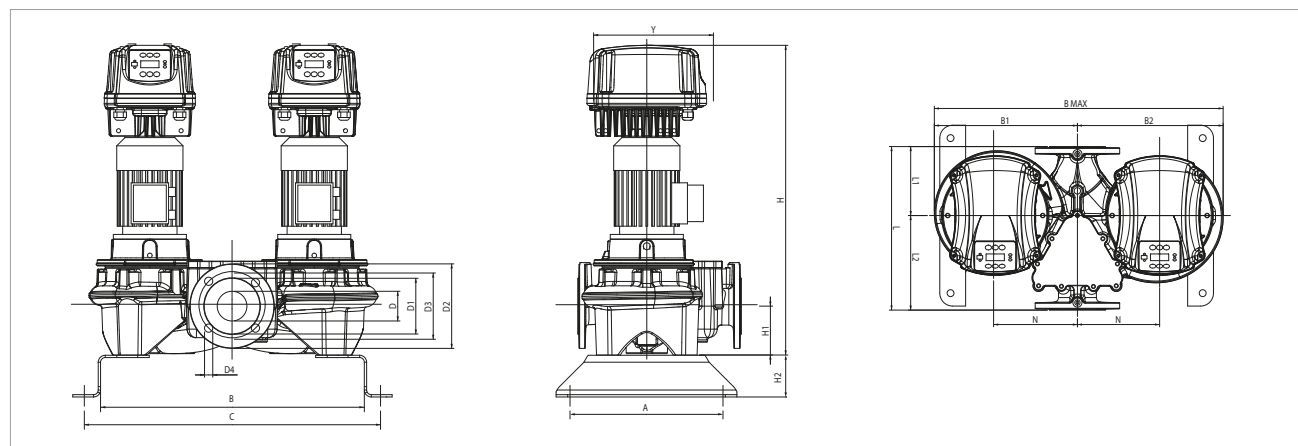
DCP-GE 65 2 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



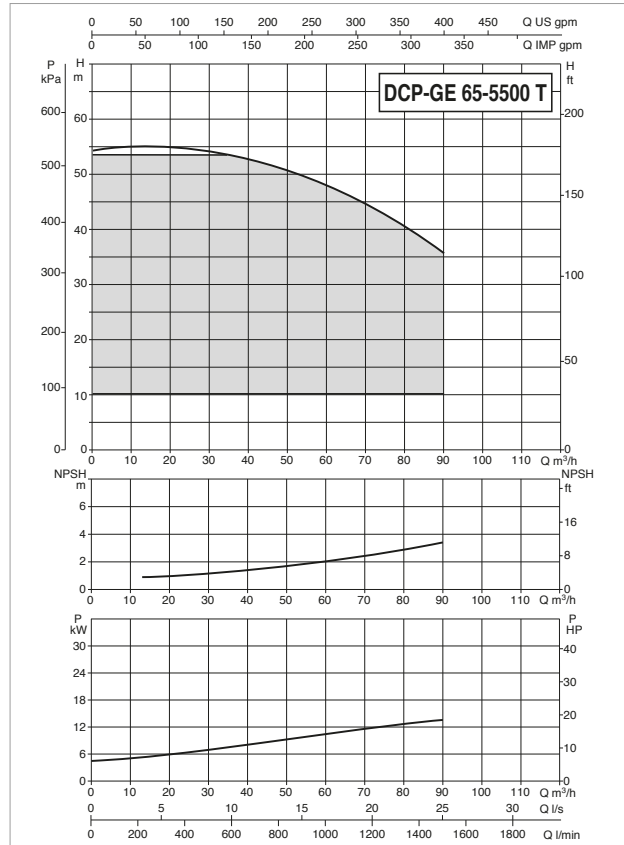
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCP-GE 65-4100/A/BAQE/ 7.5 T MCE110/C IE2 *	3 x 400 V ~	2 poles	2900	9,07	7,5	10,0	17,8
DCP-GE 65-4700/A/BAQE/ 11 T MCE110/C IE2	3 x 400 V ~	2 poles	2940	14,75	11	15,0	28,6

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
																					L/A	L/B	H		
DCP-GE 65-4100/A/BAQE/ 7.5 T MCE110/C IE2	330	569	639	324	329	653	122	185	145	18	4	425	980	107	100	358	151	207	M17	180	405	700	1080	0,31	284
DCP-GE 65-4700/A/BAQE/ 11 T MCE110/C IE2	330	649	719	389	397	786	122	185	145	18		425	1139	125	100	475	177	298	M16	220	475	782	1239	0,46	423

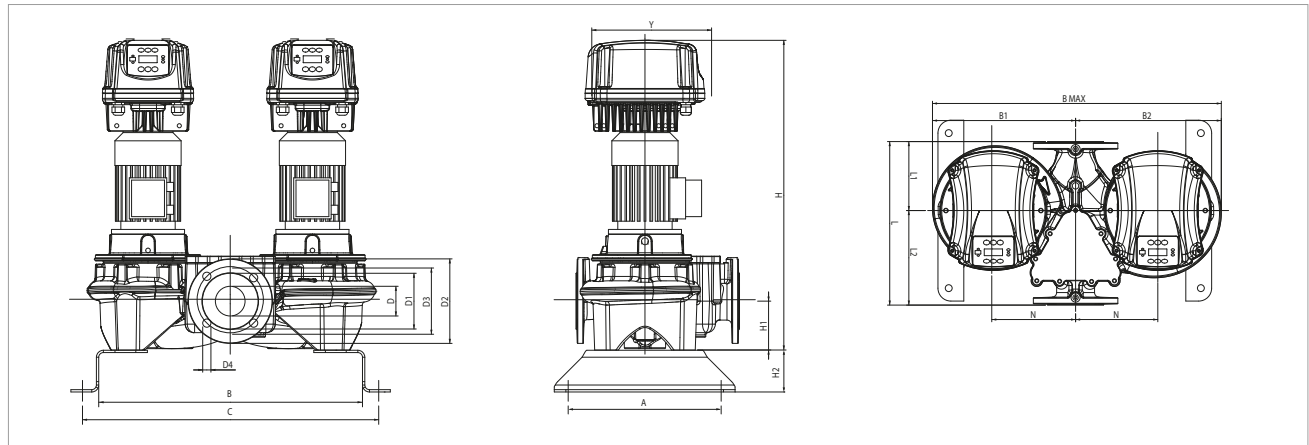
DCP-GE 65 2 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



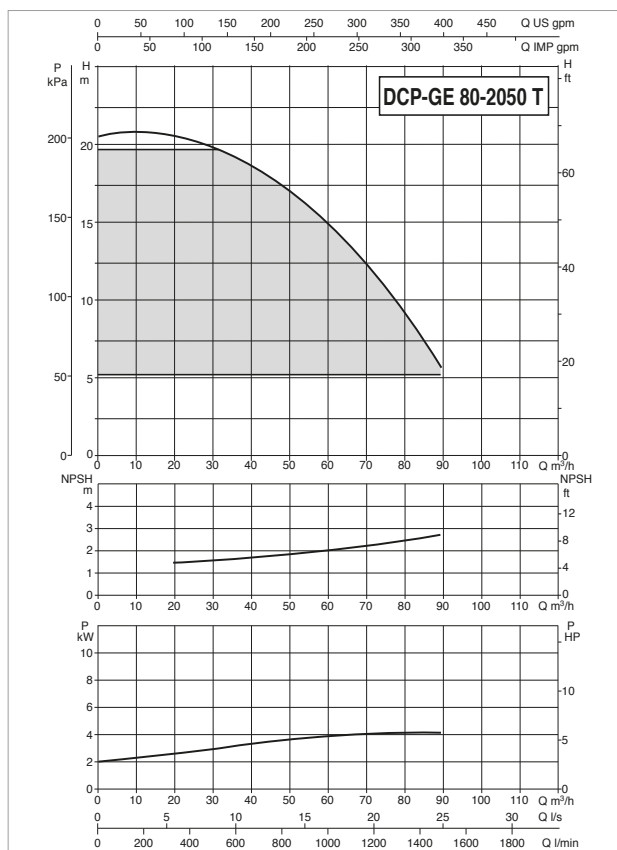
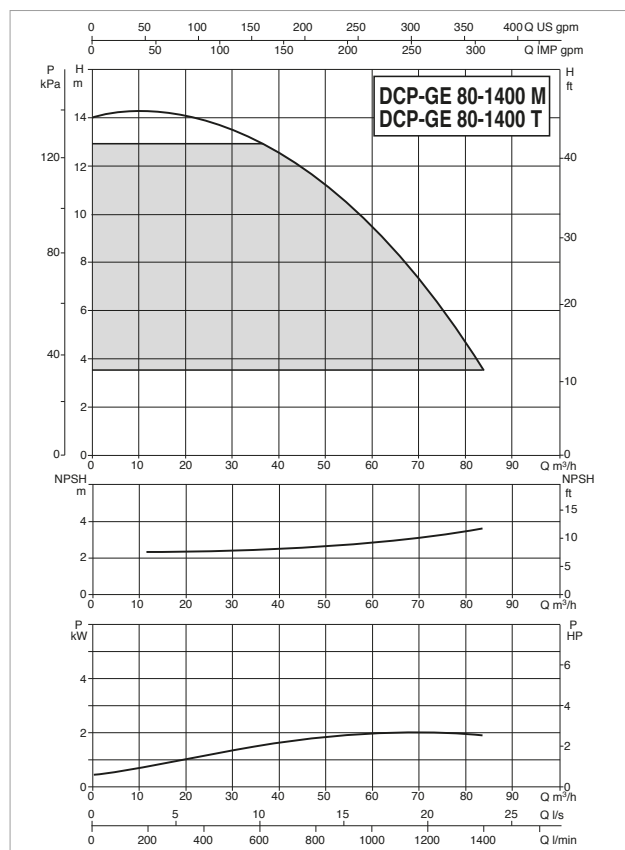
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCP-GE 65-5500/A/BAQE/ 15 T MCE150/C IE2 *	3 x 400 V ~	2 poles	2943	18,07	15	20,0	35,1

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m ³)	WEIGHT kg
																					L/A	L/B	H		
DCP-GE 65-5500/A/BAQE/ 15 T MCE150/C IE2	330	649	719	389	397	786	122	185	145	18	4	425	1139	125	100	475	177	298	M16	220	475	782	1239	0,46	459

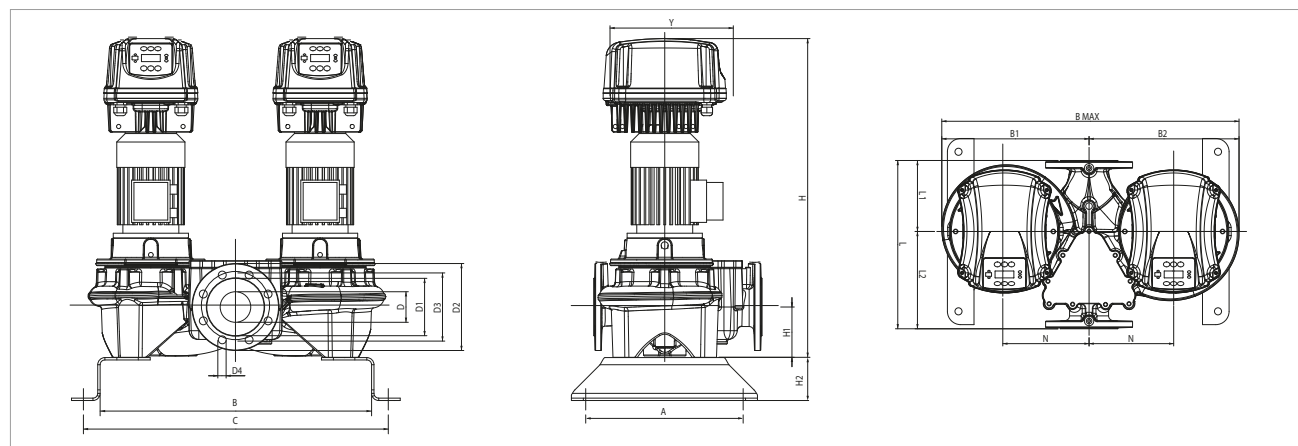
DCP-GE 80 2 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

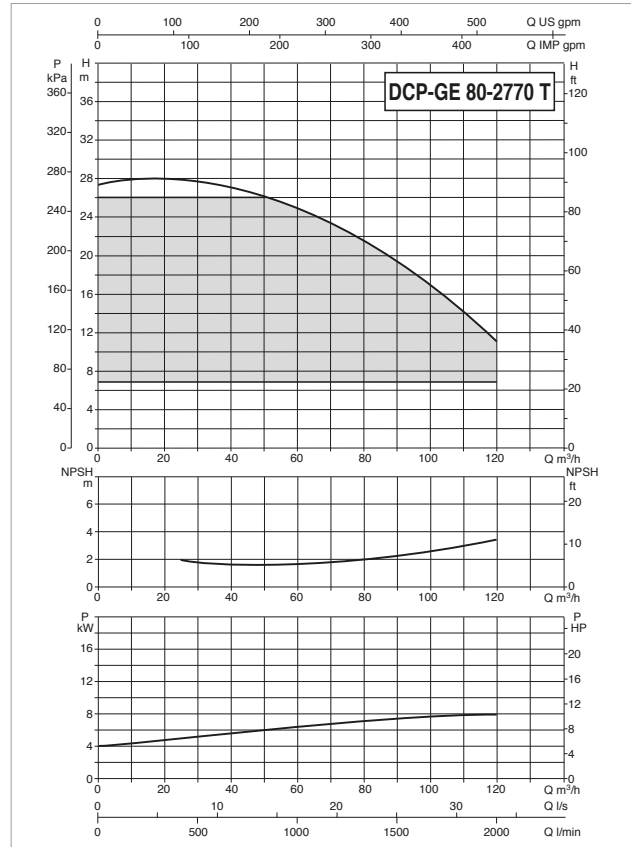
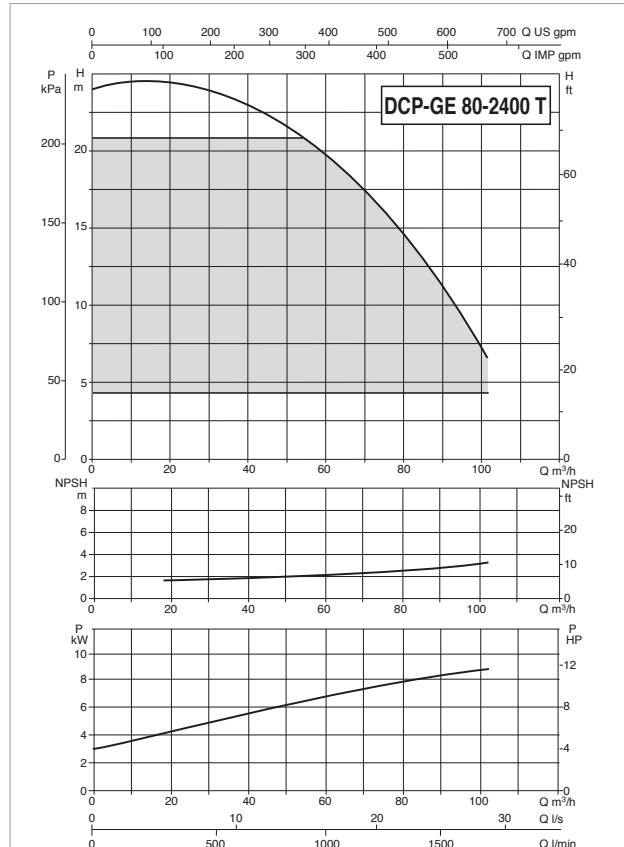


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCP-GE 80-1400/A/BAQE/ 2.2 M MCE22/C IE2	1 x 220-240 V ~	2 poles	2874	2,94	2,2	3,0	20,7
DCP-GE 80-1400/A/BAQE/ 2.2 T MCE30/C IE2	3 x 400 V ~	2 poles	2874	2,94	2,2	3,0	t.b.d.
DCP-GE 80-2050/A/BAQE/ 4 T MCE55/C IE2	3 x 400 V ~	2 poles	2914	5,46	4	5,5	10,9

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
																					L/A	L/B	H		
DCP-GE 80-1400/A/BAQE/ 2.2 M MCE22/C IE2	330	580	650	305	310	615	137	200	160	18	8	352	781,5	115	100	360	165	195	M16	180	360	710	882	0,23	177
DCP-GE 80-1400/A/BAQE/ 2.2 T MCE30/C IE2	330	580	650	305	310	615	137	200	160	18	8	352	781,5	115	100	360	165	195	M16	180	360	710	882	0,23	179
DCP-GE 80-2050/A/BAQE/ 4 T MCE55/C IE2	330	580	650	305	310	615	137	200	160	18	8	352	854,5	115	100	360	165	195	M16	180	360	710	955	0,24	195

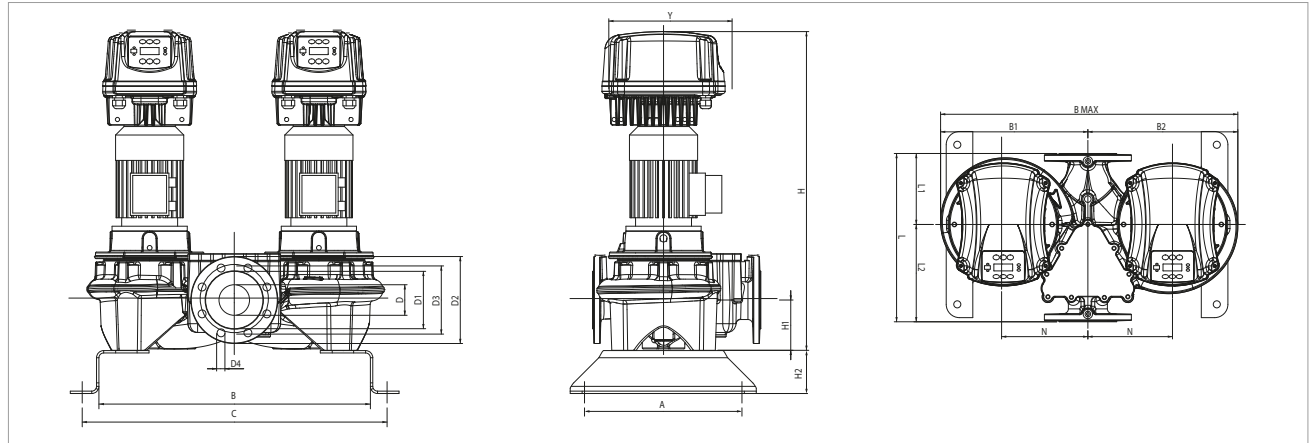
DCP-GE 80 2 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



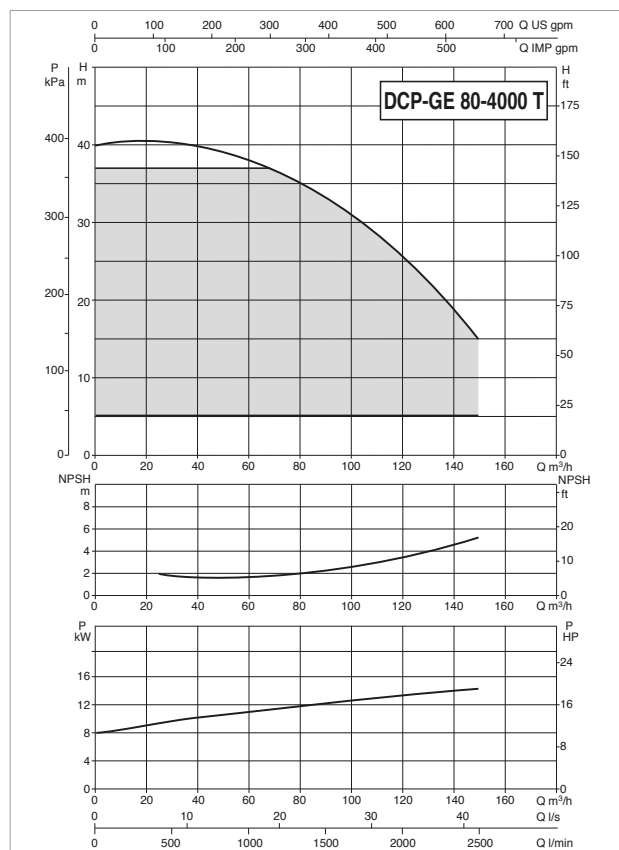
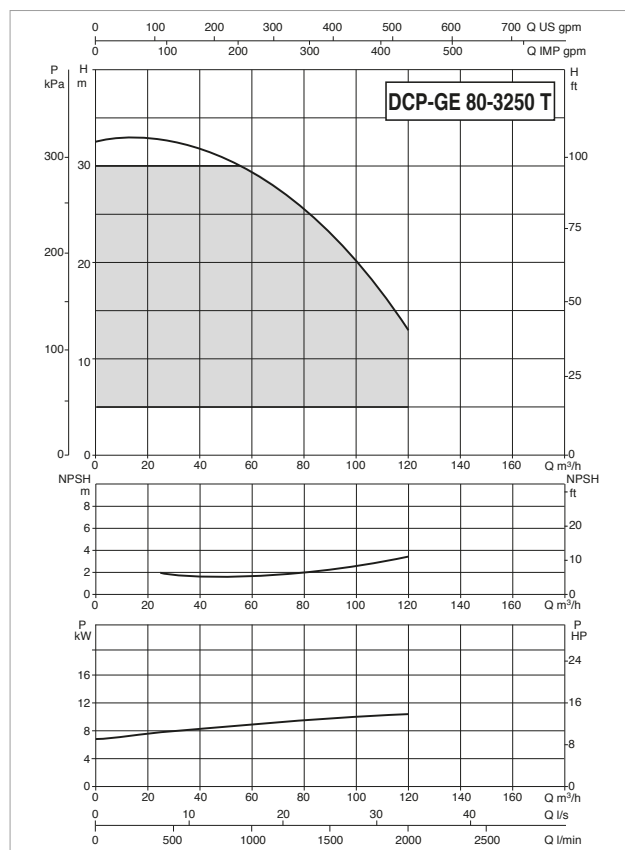
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCP-GE 80-2400/A/BAQE/ 5.5 T MCE55/C IE2 *	3 x 400 V ~	2 poles	2910	6,69	5,5	7,5	13,3
DCP-GE 80-2770/A/BAQE/ 7.5 T MCE110/C IE2 *	3 x 400 V ~	2 poles	2905	9,61	7,5	10,0	18,8

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS L/A L/B H	VOL. (m³)	WEIGHT kg
DCP-GE 80-2400/A/BAQE/ 5.5 T MCE55/C IE2	330	580	650	327	332	659	137	200	160	18	8	352	943,5	115	100	360	165	195	M16	180	360 710 1044	0,27	264
DCP-GE 80-2770/A/BAQE/ 7.5 T MCE110/C IE2	330	620	690	355	365	750	137	200	160	18	8	425	992	115	100	440	165	195	M16	180	440 750 1092	0,36	186

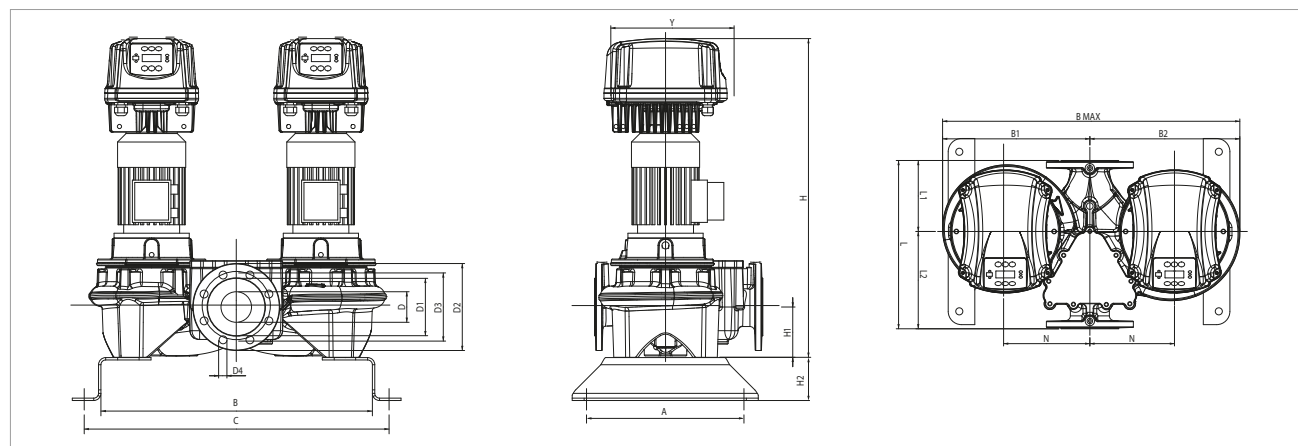
DCP-GE 80 2 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



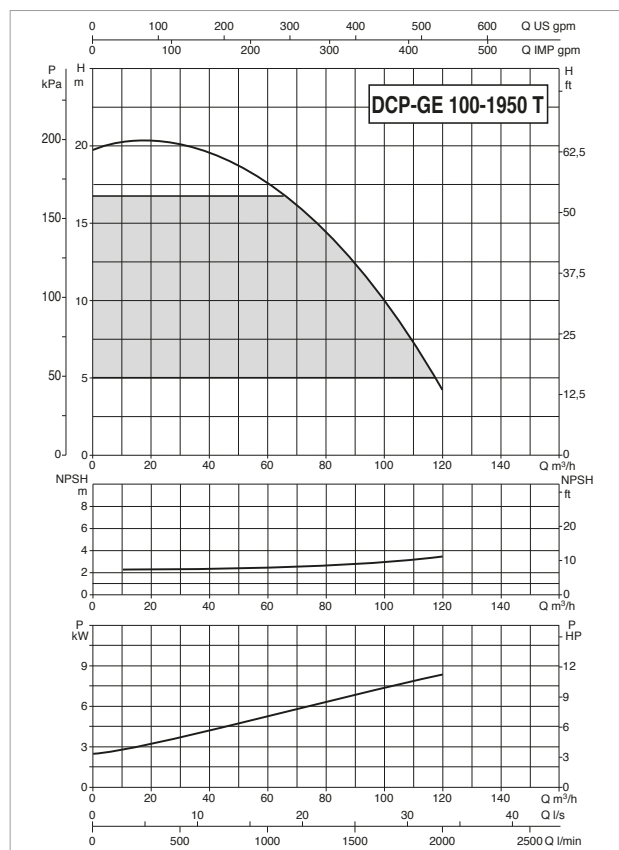
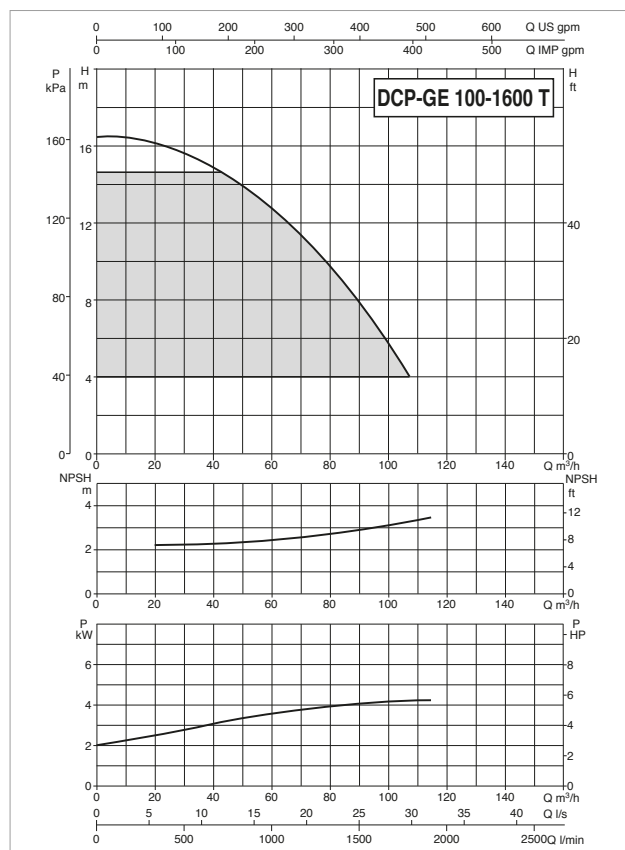
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCP-GE 80-3250/A/BAQE/ 11 T MCE110/C IE2	3 x 400 V ~	2 poles	2932	13,39	11	15,0	26,0
DCP-GE 80-4000/A/BAQE/ 15 T MCE150/C IE2 *	3 x 400 V ~	2 poles	2945	18,42	15	20,0	35,7

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
DCP-GE 80-3250/A/BAQE/ 11 T MCE110/C IE2	330	620	690	364	374	768	137	200	160	18	8	425	1137	115	100	440	165	195	M16	180	440	768	1237	0,42	204
DCP-GE 80-4000/A/BAQE/ 15 T MCE150/C IE2	330	620	690	364	374	768	137	200	160	18	8	425	1137	115	100	440	165	195	M16	180	440	768	1237	0,42	214

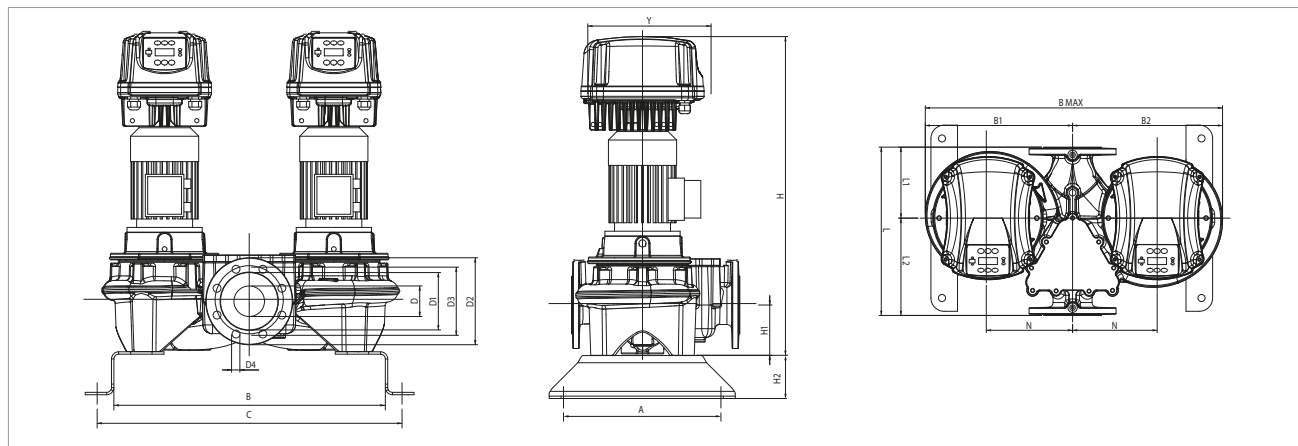
DCP-GE 100 2 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

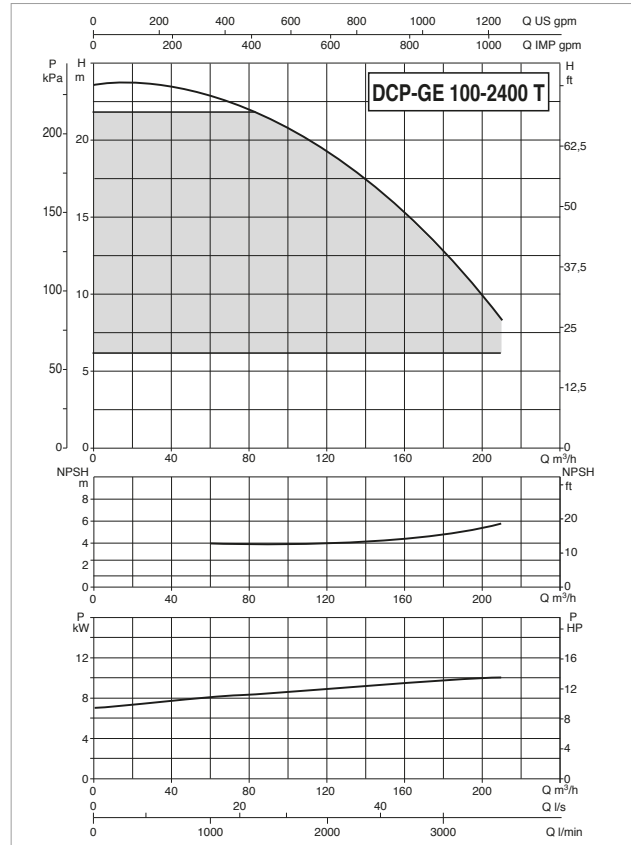
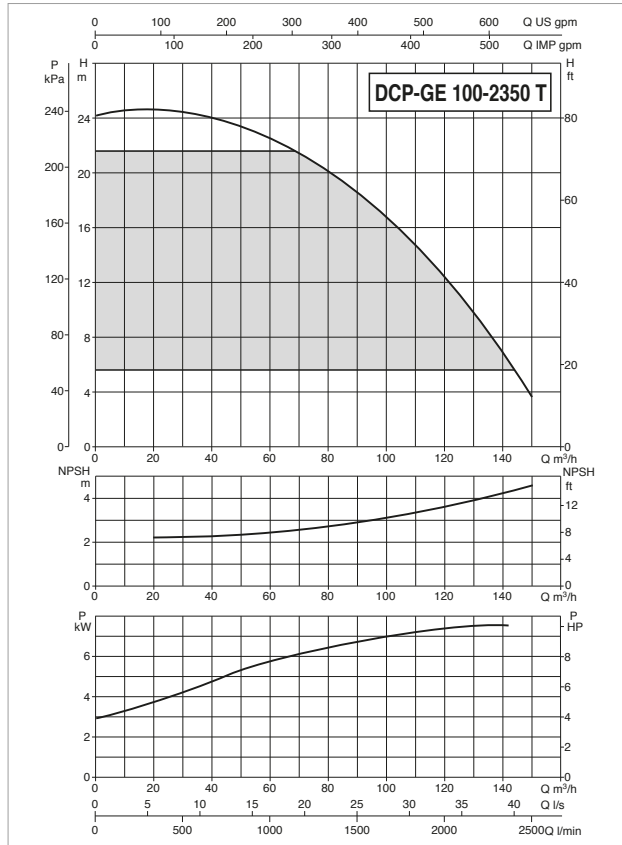


MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCP-GE 100-1600/A/BAQE/ 4 T MCE55/C IE2	3 x 400 V ~	2 poles	2918	5,58	4	5,5	11,2
DCP-GE 100-1950/A/BAQE/ 5.5 T MCE55/C IE2	3 x 400 V ~	2 poles	2918	7,34	5,5	7,5	14,4

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
																					L/A	L/B	H		
DCP-GE 100-1600/A/BAQE/ 4 T MCE55/C IE2	362	637	717	330	345	675	137	200	160	18	8	352	882,5	140	100	500	280	340	M16	300	500	777	983	0,38	183
DCP-GE 100-1950/A/BAQE/ 5.5 T MCE55/C IE2	362	637	717	335	350	685	137	200	160	18	8	352	970,5	140	100	500	280	340	M16	300	500	777	1071	0,42	197

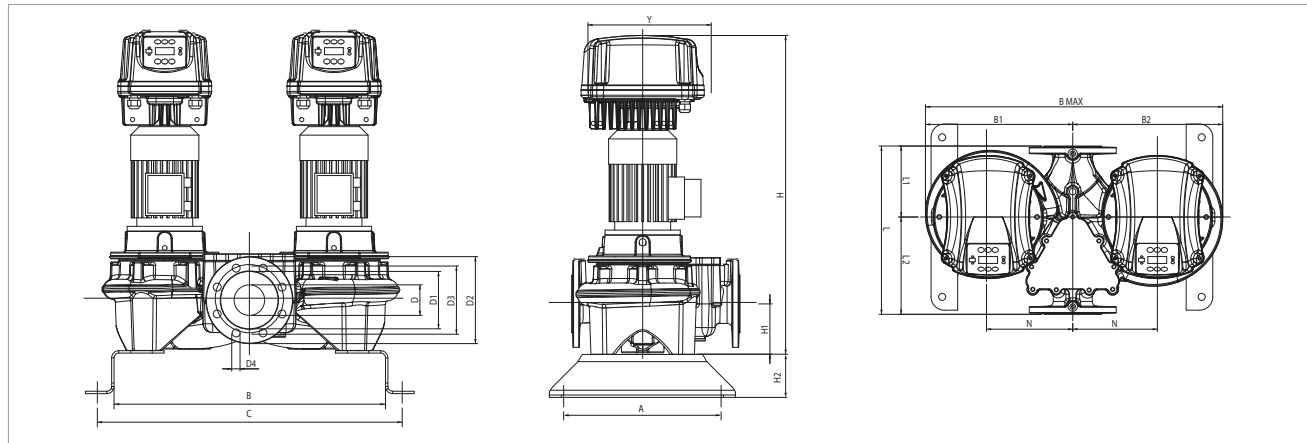
DCP-GE 100 2 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



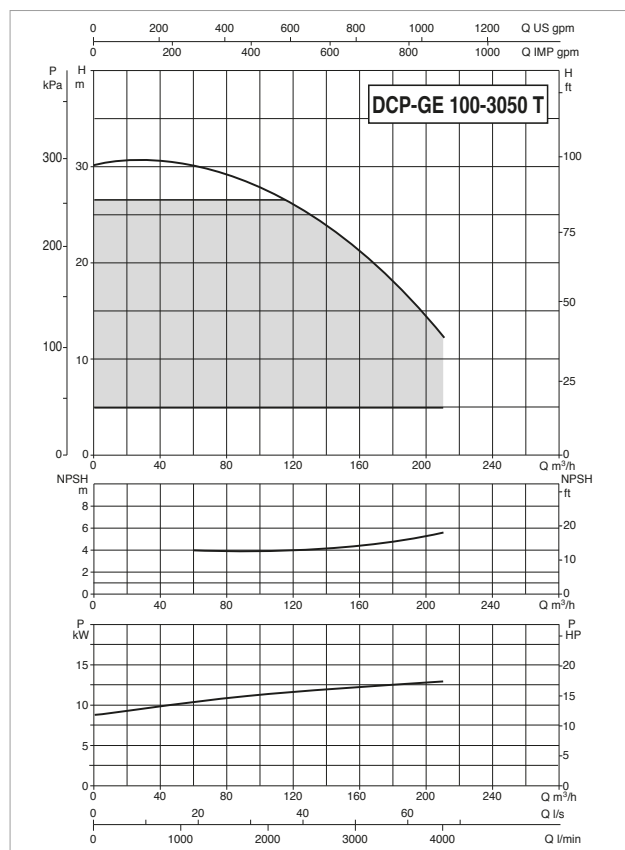
MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCP-GE 100-2350/A/BAQE/ 7.5 T MCE110/C IE2 *	3 x 400 V ~	2 poles	2906	9,69	7,5	10,0	18,9
DCP-GE 100-2400/A/BAQE/ 11 T MCE110/C IE2	3 x 400 V ~	2 poles	2940	14,59	11	15,0	28,3

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
																					L/A	L/B	H		
DCP-GE 100-2350/A/BAQE/ 7.5 T MCE110/C IE2	362	637	717	335	350	685	137	200	160	18	8	425	1018,5	140	100	500	280	340	M16	300	500	777	1119	0,43	230
DCP-GE 100-2400/A/BAQE/ 11 T MCE110/C IE2	362	733	813	395	410	805	156	220	180	18	8	425	1159	140	100	550	191	309	M16	200	550	873	1259	0,60	273

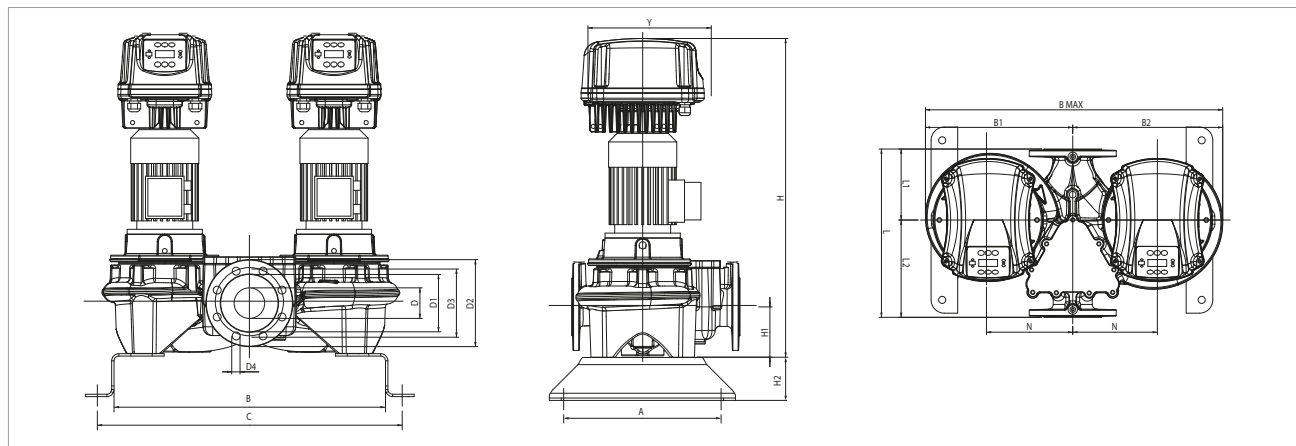
DCP-GE 100 2 POLES - ELECTRONIC IN-LINE PUMPS FOR HEATING, AIR CONDITIONING, REFRIGERATION, SOLAR, AND SANITARY SYSTEMS - TWIN, FLANGED, WITH MCE/C INVERTER

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 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.



MODEL	ELECTRICAL DATA						
	POWER INPUT 50-60 Hz	MOTOR TYPE	n r.p.m.	P1 MAX W	P2 NOMINAL		In A
					kW	HP	
DCP-GE 100-3050/A/BAQE/ 15 T MCE150/C IE2 *	3 x 400 V ~	2 poles	2941	17,79	15	20,0	34,6

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

MODEL	A	B	C	B1	B2	B max	D1	D2	D3	D4	no. of holes	Y	H	H1	H2	L	L1	L2	M	N	PACKING DIMENSIONS			VOL. (m³)	WEIGHT kg
																					L/A	L/B	H		
DCP-GE 100-3050/A/BAQE/ 15 T MCE150/C IE2	362	733	813	395	410	805	156	220	180	18	8	425	1159	140	100	550	191	309	M16	200	550	873	1259	0,60	352

KCE / KCVE

COMPOSITE MATERIAL CENTRIFUGAL ELECTRONIC PUMPS



TECHNICAL DATA

Operating range: from 3 to 45 m³/h

Maximum head: 24 m.

Maximum operating pressure: 6.5 bar

Pumped liquid temperature range: from -10 to +55 °C.

Maximum glycol percentage: up to 40%

Installation: fixed or portable, horizontal position.

Pumped liquid: clean, free of solids and abrasives, chemically neutral, with properties similar to water.

Maximum ambient temperature: 40 °C

Special versions on request:

other power input voltages and/or frequencies

Motor protection: IP55

Insulation class: F (copper wire with H class insulation)

Standard voltage: single-phase 1x220-240 V / 50-60 Hz

Special version on request:

three-phase 3x400 V / 50 Hz or three-phase 3x460 V / 60 Hz

APPLICATIONS

Pumping of water or other non-aggressive, non-explosive liquids, free from solid particles or fibres.

Particularly suited for pumping water containing glycol for air conditioning systems.

PLUS

Versatile: thanks to the use of the MCE 22/C inverters, it offers performance features capable of automatically adapting to the different needs of the systems, keeping a consistent differential pressures. In addition, thanks to the high quality construction materials and the oversized motors, the KCE and KCVE series can be used to pump liquid containing up to 40% glycol.

Reliable: all the components have been sized to guarantee a minimum life time of at least 50,000 hours of operation (with the exception of the bearings and the mechanical seals, for which the average life guaranteed is 25,000 hours in the most demanding conditions).

Rust-proof: all the components in contact with the liquid are made of thermoplastic material (polypropylene or noryl reinforced), and the pump shaft is made of stainless steel (AISI 304).

Flexible: possibility of rotating the pump body at 90 ° for better installation flexibility.

CONSTRUCTION FEATURES OF THE PUMP

Complete hydraulics (pump body, seal holder flange, impeller, diffuser) made of fibreglass reinforced technopolymer, shaft extension in contact with the liquid made of AISI 304 stainless steel.

Silicon carbide/graphite mechanical seal, EPDM O rings

CONSTRUCTION FEATURES OF THE MOTOR

Continuous service external ventilation asynchronous motor (S1), 2 poles.

Sealed ball bearings, water and humidity resistant.

Motor construction in accordance with EN 60335-2-41.

CONSTRUCTION FEATURES OF THE ELECTRONICS: MCE/C INVERTER

MCE/C inverters are the latest technological achievement of the DAB inverter range. They represent a new generation of inverters for use with circulation pumps, and set themselves apart due to ease of use, power, simplicity of installation and management. MCE/C inverters have been designed for managing circulation pumps. By allowing a simple adjustment of the differential pressure, they give the possibility of adjusting the performance of the circulation pump to the actual system requirements. They are fitted on the fan cover of the motor. This makes the installation of the pump with MCE/C particularly easy and quick. The protection class of the MCE/C is IP55. The ease of programming is guaranteed by the use of a simple and intuitive interface, similar to Dialogue electronic circulators, and a graphic display. MCE/C inverters have a double micro-processor construction that guarantees maximum efficiency and reliability.

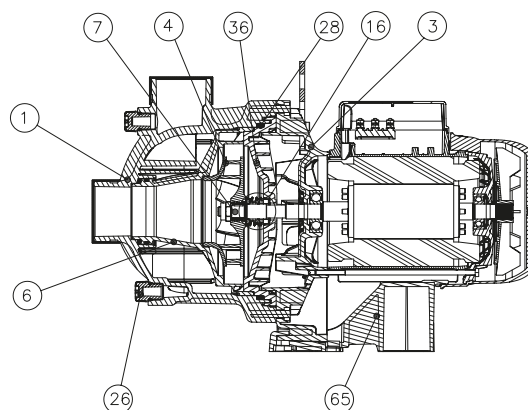
A reliable and sturdy construction, together with a modern and innovative design, complete the product, also in terms of aesthetic value. MCE/C inverters protect the motor and the pump, and increase their life, by eliminating hammering effects and making the pump rotate at the minimum number of rotations capable of meeting the requirements of the user. In addition, electric pumps controlled by the MCE/C inverter are environmentally friendly. In fact, by ensuring that the pump only uses the power that is strictly necessary for meeting the needs of the users, electricity consumption is strongly reduced when compared with fixed speed pumps. It is possible to create twin units by using the appropriate cable for the connection of MCE/C inverters.

KCE / KCVE

COMPOSITE MATERIAL CENTRIFUGAL ELECTRONIC PUMPS

MATERIALS

N.	PARTS	MATERIALS
1	PUMP BODY	FIBREGLASS REINFORCED TECHNOPOLYMER
3	SUPPORT	DIE-CAST ALUMINIUM ALLOY
4	IMPELLER	FIBREGLASS REINFORCED TECHNOPOLYMER
6	DIFFUSER	FIBREGLASS REINFORCED TECHNOPOLYMER
7	SHAFT	AISI 304 STAINLESS STEEL IN CONTACT WITH THE LIQUID
16	MECHANICAL SEAL	SILICON CARBIDE/GRAPHITE
26	CAP	FIBREGLASS REINFORCED TECHNOPOLYMER
28	O-RING	EPDM
36	SEAL HOLDING DISC	FIBREGLASS REINFORCED TECHNOPOLYMER
65	BASE	FIBREGLASS REINFORCED TECHNOPOLYMER



– Legend:
(example)

	KCV	E	300	T	MCE	30	C
KC = 2" M-GAS threaded ports	_____	_____	_____	_____	_____	_____	_____
KCV = 2" Victaulic threaded ports	_____	_____	_____	_____	_____	_____	_____
E = motor complete with MCE/C inverter	_____	_____	_____	_____	_____	_____	_____
Nominal power in hp x 100	_____	_____	_____	_____	_____	_____	_____
Three-phase motor	_____	_____	_____	_____	_____	_____	_____
MCE = DAB inverter	_____	_____	_____	_____	_____	_____	_____
30 = P. max in Kw x 10	_____	_____	_____	_____	_____	_____	_____
C = Circulation version	_____	_____	_____	_____	_____	_____	_____

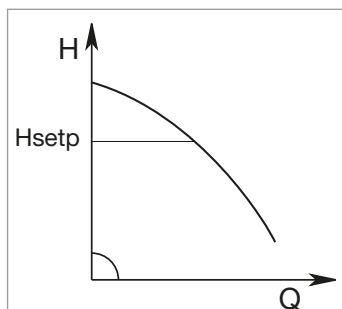
MCE/C INVERTER

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 - ΔP -c constant differential pressure adjustment mode

The ΔP -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.



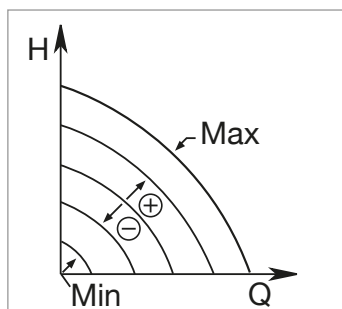
This adjustment is particularly indicated for the following systems:

- 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.

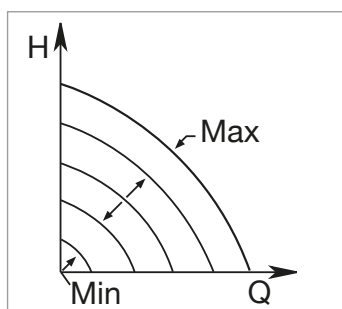


2.2 - Adjustment of the constant curve with external analogue signal

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.

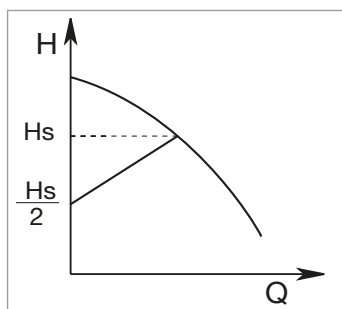
This mode can be set using the control panel on the MCE cover.



3 - ΔP -v * proportional differential pressure adjustment mode

With ΔP -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.

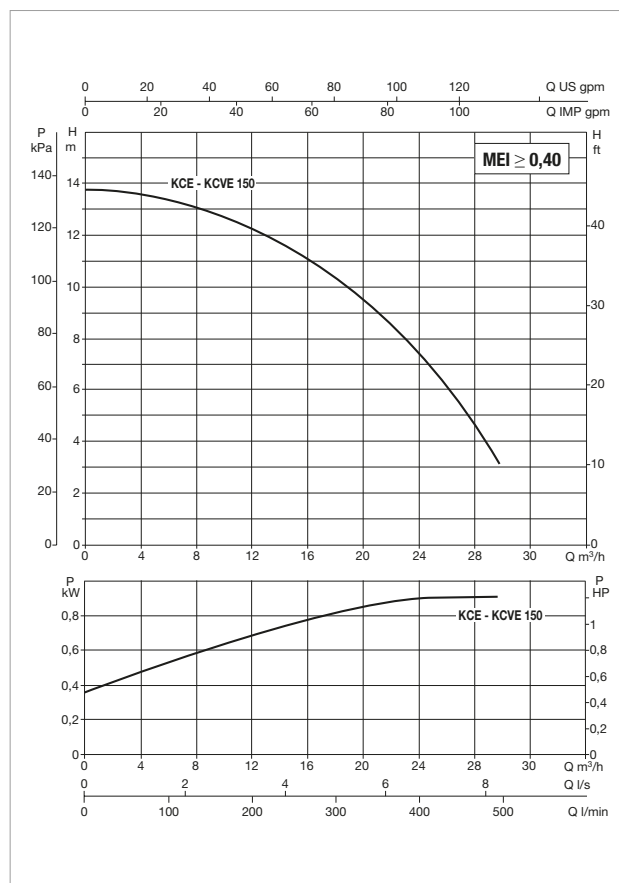
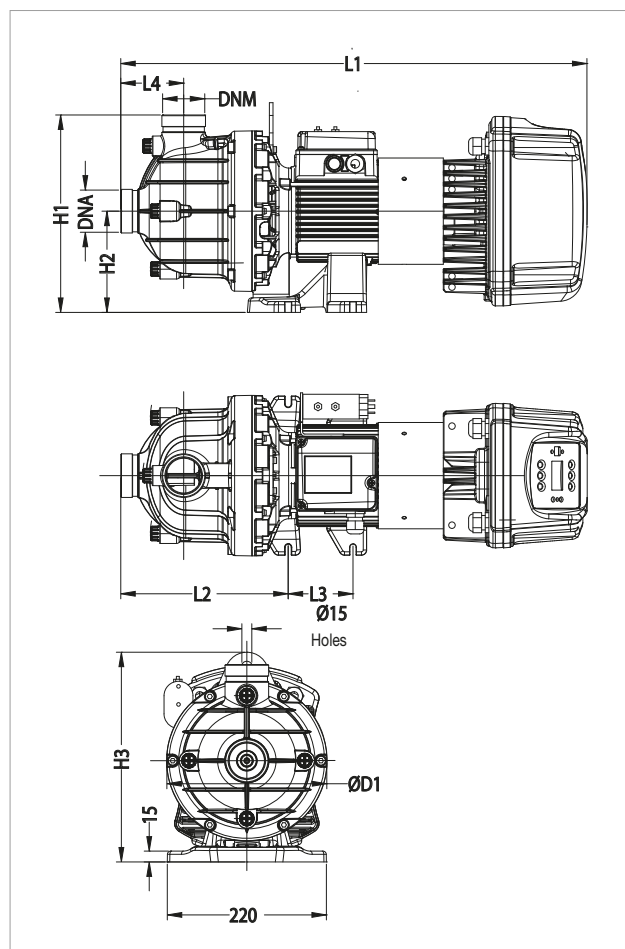
* in order to know the availability of the function on specific models contact our customer service.



For more information refer to the technical appendix.

KCE / KCVE 150 - COMPOSITE MATERIAL CENTRIFUGAL ELECTRONIC PUMPS FOR AIR CONDITIONING AND REFRIGERATION SYSTEMS - SINGLE, THREADED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -10 °C to +55°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.

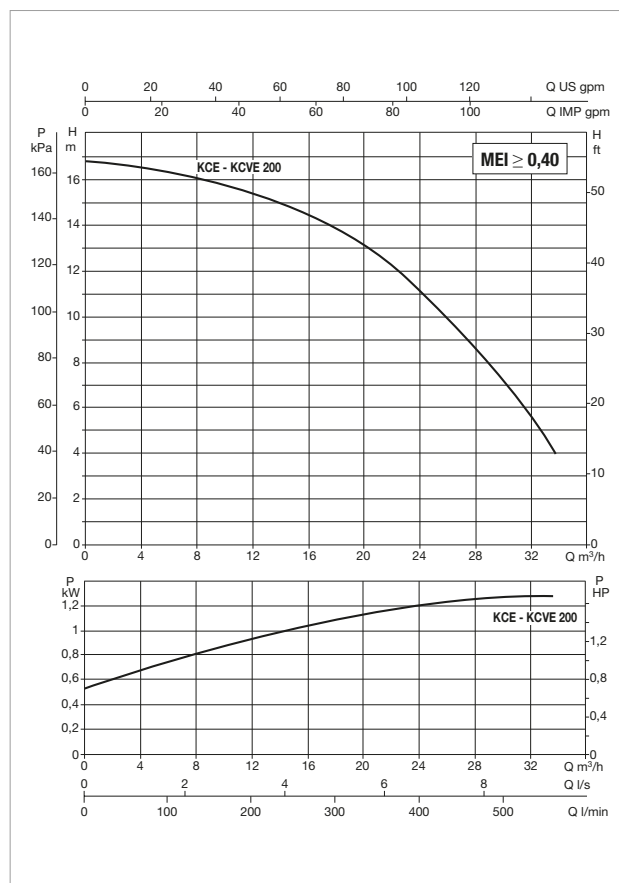
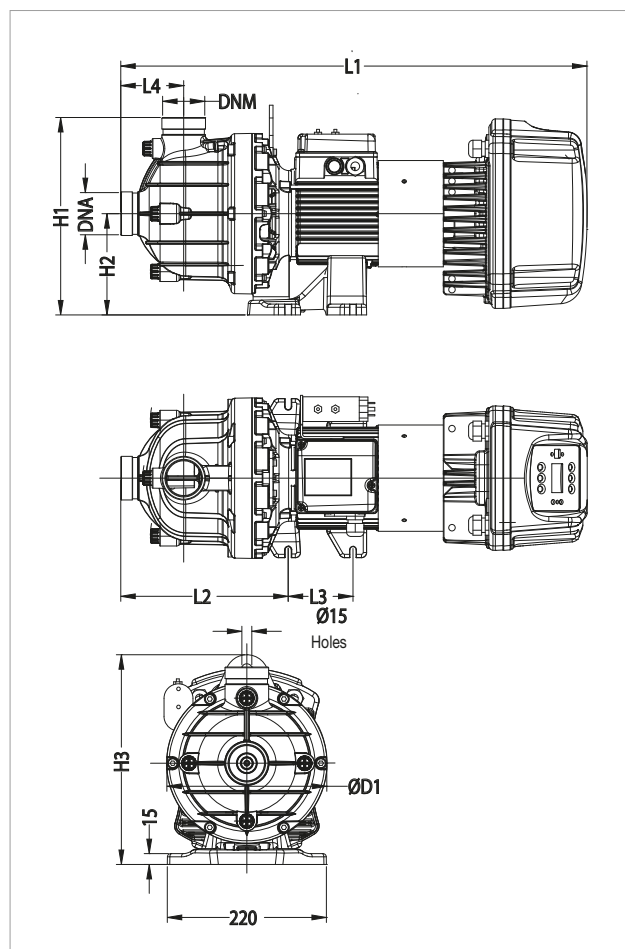
MODEL	Q=m³/h	0	10	15	20	25
	Q=l/min	0	167	250	333	417
KCE / KCVE 150 T	H (m)	13,6	12,8	11,5	9,5	6,5

MODEL	ELECTRICAL DATA				
	POWER INPUT 50-60 Hz	P1 MAX W	P2 NOMINAL	In A	PUMP CONFIGURATION
			kW		
KCE 150 M MCE11/C IE2	1x220-240 V ~	1,27	0,80	10,1	230D
KCE 150 T MCE30/C IE2	3 x 400 V ~	1,27	0,80	t.b.d.	230D
KCVE 150 M MCE11/C IE2	1x220-240 V ~	1,27	0,80	10,1	230D
KCVE 150 T MCE30/C IE2	3 x 400 V ~	1,27	0,80	t.b.d.	230D

MODEL	L1	L2	L3	L4	H1	H2	H3	D1	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
											L/A	L/B	H		
KCE 150 M MCE11/C IE2	639	231	90	87	273	140	290	222	2" M-GAS	2" M-GAS	670	420	601	0,17	30,8
KCE 150 T MCE30/C IE2	639	231	90	87	273	140	290	222	2" M-GAS	2" M-GAS	670	420	601	0,17	30,8
KCVE 150 M MCE11/C IE2	639	231	90	87	273	140	290	222	2" Victaulic	2" Victaulic	670	420	601	0,17	30,8
KCVE 150 T MCE30/C IE2	639	231	90	87	273	140	290	222	2" Victaulic	2" Victaulic	670	420	601	0,17	30,8

KCE / KCVE 200 - COMPOSITE MATERIAL CENTRIFUGAL ELECTRONIC PUMPS FOR AIR CONDITIONING AND REFRIGERATION SYSTEMS - SINGLE, THREADED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -10 °C to +55°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.

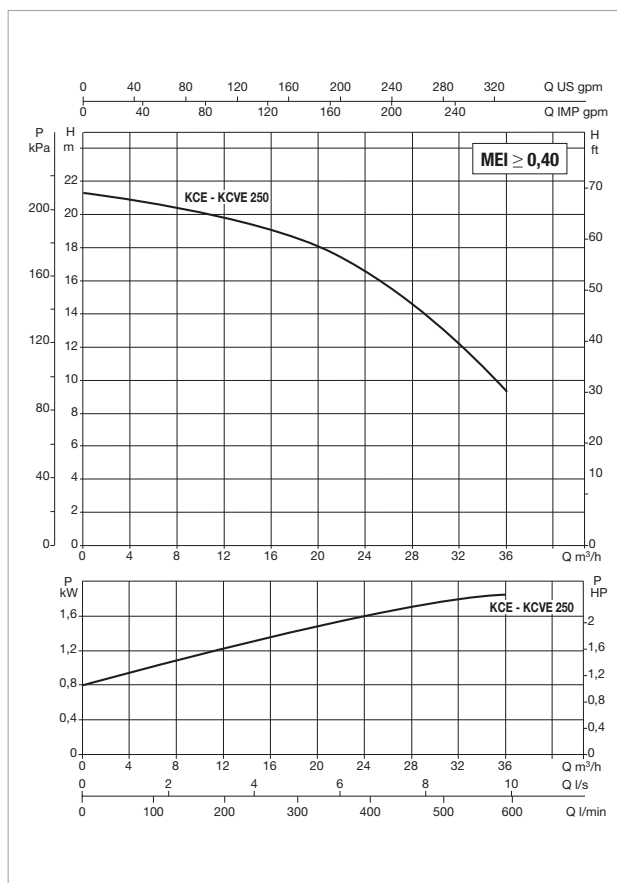
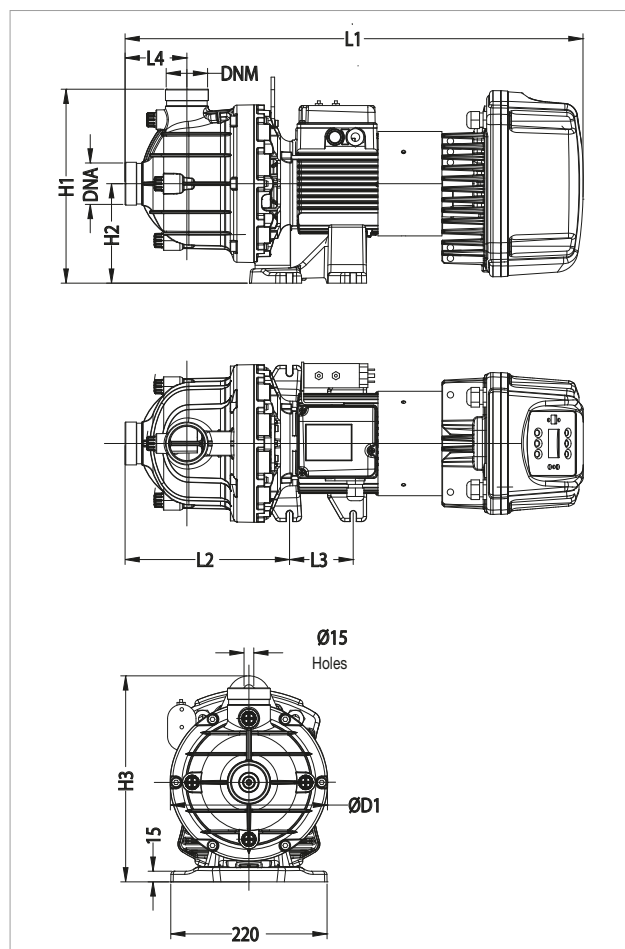
MODEL	Q=m³/h	0	10	15	20	25	30
	Q=l/min	0	167	250	333	417	500
KCE / KCVE 200 T	H (m)	16,8	15,7	15	14	11,8	9

MODEL	ELECTRICAL DATA				
	POWER INPUT 50-60 Hz	P1 MAX W	P2 NOMINAL	In A	PUMP CONFIGURATION
			kW		
KCE 200 M MCE15/C IE2	1x220-240 V ~	1,40	1,10	10,9	230D
KCE 200 T MCE30/C IE2	3 x 400 V ~	1,40	1,10	t.b.d.	230D
KCVE 200 M MCE15/C IE2	1x220-240 V ~	1,40	1,10	10,9	230D
KCVE 200 T MCE30/C IE2	3 x 400 V ~	1,40	1,10	t.b.d.	230D

MODEL	L1	L2	L3	L4	H1	H2	H3	D1	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
											L/A	L/B	H		
KCE 200 M MCE15/C IE2	639	231	74	87	273	140	290	222	2" M-GAS	2" M-GAS	670	420	601	0,17	30,8
KCE 200 T MCE30/C IE2	639	231	74	87	273	140	290	222	2" M-GAS	2" M-GAS	670	420	601	0,17	30,8
KCVE 200 M MCE15/C IE2	639	231	74	87	273	140	290	222	2" Victaulic	2" Victaulic	670	420	601	0,17	30,8
KCVE 200 T MCE30/C IE2	639	231	74	87	273	140	290	222	2" Victaulic	2" Victaulic	670	420	601	0,17	30,8

KCE / KCVE 250 - COMPOSITE MATERIAL CENTRIFUGAL ELECTRONIC PUMPS FOR AIR CONDITIONING AND REFRIGERATION SYSTEMS - SINGLE, THREADED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -10 °C to +55°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.

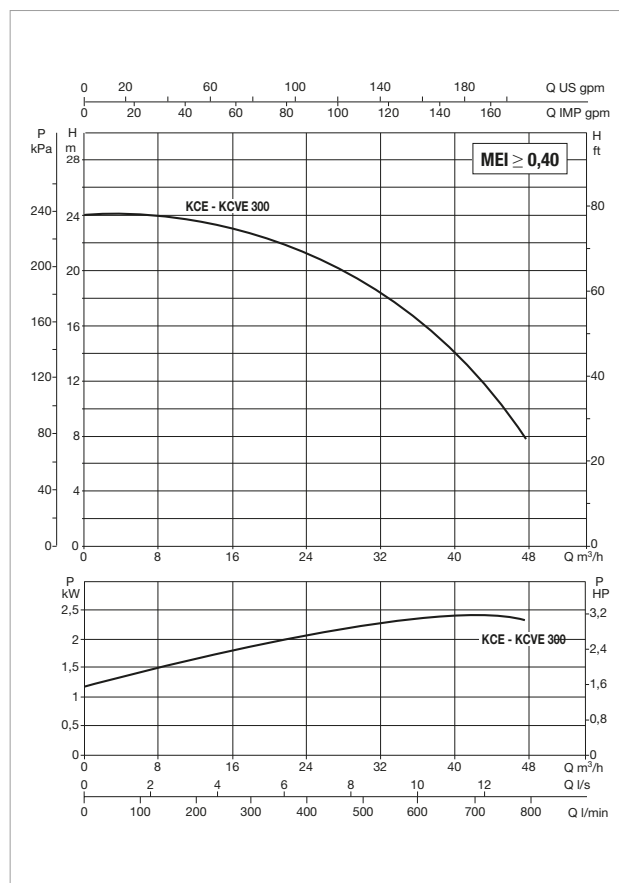
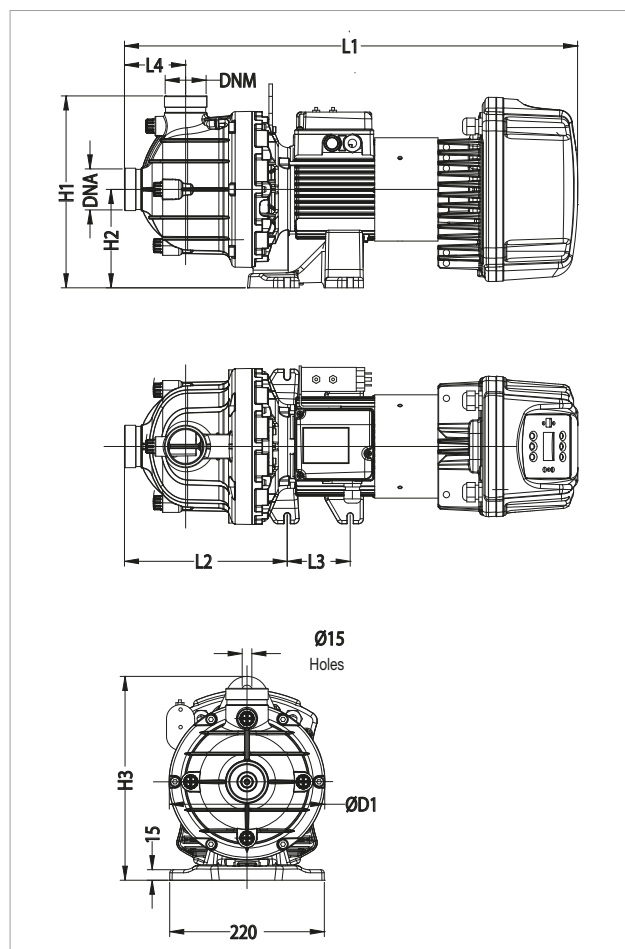
MODEL	Q=m³/h	0	10	15	20	25	30
	Q=l/min	0	167	250	333	417	500
KCE / KCVE 250 T	H (m)	21	20	19,1	17,7	15,5	12

MODEL	ELECTRICAL DATA				
	POWER INPUT 50-60 Hz	P1 MAX W	P2 NOMINAL	In A	PUMP CONFIGURATION
			kW		
KCE 250 M MCE22/C IE2	1x220-240 V ~	2,03	1,84	14,9	230D
KCE 250 T MCE30/C IE2	3 x 400 V ~	2,03	1,84	t.b.d.	230D
KCVE 250 M MCE22/C IE2	1x220-240 V ~	2,03	1,84	14,9	230D
KCVE 250 T MCE30/C IE2	3 x 400 V ~	2,03	1,84	t.b.d.	230D

MODEL	L1	L2	L3	L4	H1	H2	H3	D1	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
											L/A	L/B	H		
KCE 250 M MCE22/C IE2	713	231	74	87	273	140	290	222	2" M-GAS	2" M-GAS	670	420	601	0,17	32,5
KCE 250 T MCE30/C IE2	713	231	74	87	273	140	290	222	2" M-GAS	2" M-GAS	670	420	601	0,17	32,5
KCVE 250 M MCE22/C IE2	713	231	74	87	273	140	290	222	2" Victaulic	2" Victaulic	670	420	601	0,17	32,5
KCVE 250 T MCE30/C IE2	713	231	74	87	273	140	290	222	2" Victaulic	2" Victaulic	670	420	601	0,17	32,5

KCE / KCVE 300 - COMPOSITE MATERIAL CENTRIFUGAL ELECTRONIC PUMPS FOR AIR CONDITIONING AND REFRIGERATION SYSTEMS - SINGLE, THREADED, WITH MCE/C INVERTER

Pumped liquid temperature range: from -10 °C to +55°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	Q=m³/h	0	15	20	25	30	40
	Q=l/min	0	250	333	417	500	667
KCE / KCVE 300 T	H (m)	24,3	23,4	22,5	21,3	19,5	13,9

MODEL	ELECTRICAL DATA				
	POWER INPUT 50-60 Hz	P1 MAX W	P2 NOMINAL	In A	PUMP CONFIGURATION
			kW		
KCE 300 T MCE30/C IE2	3 x 400 V ~	2,90	2,20	6,8	400S
KCVE 300 T MCE30/C IE2	3 x 400 V ~	2,90	2,20	6,8	400S

MODEL	L1	L2	L3	L4	H1	H2	H3	D1	DNA	DNM	PACKING DIMENSIONS			VOLUME (m³)	WEIGHT kg
											L/A	L/B	H		
KCE 300 T MCE30/C IE2	763	282	177	114	355	170	320	300	2" M-GAS	2" M-GAS	670	420	601	0,17	32,5
KCVE 300 T MCE30/C IE2	763	282	177	114	355	170	320	300	2" Victaulic	2" Victaulic	670	420	601	0,17	32,5

NOTES

HYDRAULIC EFFICIENCY

EU 547/2012 REGULATION - MEI

GENERAL INFORMATION

The MEI index (Minimum Efficiency Index) was issued with the objective of defining a performance threshold value applicable to all the water pumps found on the market. The MEI index takes into account the size of the pump, its specific speed, and its speed of rotation. The regulation applies to centrifugal pumps used for pumping clean waters included in the following categories:

- Axial suction pumps with support (ESOB)
- Horizontal monobloc axial suction pumps (ESCC)
- In-line monobloc axial suction pumps (ESCCI)
- Multistage vertical pumps (MS-V)
- Multistage submerged pumps (MSS)

MEI is a dimensionless indicator for hydraulic performance, and a measure of the quality of the sizing of the pump in relation to the performance. The higher the MEI value, the better is the sizing of the pump in relation to the performance, and the lower is the annual energy consumption due to the use of the pump. In theory, the upper limit of the MEI values is open, and only depends on physical and technological limitations.

The minimum efficiency index (MEI) is based on the maximum diameter of the impeller.

The value of reference for the more efficient water pumps is $MEI \geq 0,70$.

The efficiency of a pump with turned impeller is generally lower to that of a pump with full impeller diameter. The turning of the impeller adapts the pump to a fixed point of operation, resulting in lower energy consumption.

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

The information on the efficiency of reference can be found at the address: www.dabpumps.com. In alternative contact your local sales representatives.

The $MEI=0,7$ and $MEI=0,4$ efficiency charts for the different types of pumps can be found at the website: www.europump.org/efficiencycharts

		PUMP MODEL	IMPELLER	MEI	η_{PL}	η_{BEP}	η_{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	η_{PL}	η_{BEP}	η_{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	η_{PL}	η_{BEP}	η_{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	η_{PL}	η_{BEP}	η_{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	η_{PL}	η_{BEP}	η_{OL}
DN 40	2p	CPE 40/6200	Full	$\geq 0,40$	51,5	54,0	52,9
		CPE 40/5500	Turned		50,5	53,0	52,0
		CPE 40/4700	Turned		49,0	52,0	51,3
		CPE 40/3500	Full	$\geq 0,60$	53,5	56,6	56,3
		CPE 40/2300	Turned		52,1	54,7	54,0
		DCPE 40/2450 T	Full	$\geq 0,40$	57,3	60,8	60,4
		DCPE 40/1650 T	Turned		51,0	53,1	52,6
	4p	CME 40-1450	Full	$\geq 0,40$	51,5	55,0	54,0
		CME 40-870	Full	$\geq 0,60$	52,7	55,5	55,1
		DCME 40-620 T	Full	$\geq 0,40$	61,8	64,5	64,1

		PUMP MODEL	IMPELLER	MEI	η_{PL}	η_{BEP}	η_{OL}
DN 50	2p	CPE 50/5650	Full	$\geq 0,40$	55,1	58,0	57,2
		CPE 50/4600	Turned		52,6	56,3	55,1
		CPE 50/4100	Full	$\geq 0,60$	54,1	57,1	56,7
		CPE 50/2600	Turned		47,2	51,7	51,1
		DCP 50/2450 T	Full	$\geq 0,40$	63,8	67,4	66,6
		DCP 50/1550 T	Turned		61,8	65,0	64,5
		DCP 50/3650 T	Full	$\geq 0,40$	61,8	67,1	64,0
	4p	CME 50-1420	Full	$\geq 0,40$	57,0	59,0	58,0
		CME 50-1000	Full	$\geq 0,60$	50,0	52,8	52,3
		DCME 50-880 T	Full	$\geq 0,40$	57,2	60,2	59,6
		DCME 50-460 T	Turned	$\geq 0,40$	59,9	62,3	61,8

		PUMP MODEL	IMPELLER	MEI	η_{PL}	η_{BEP}	η_{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

HYDRAULIC EFFICIENCY

EU 547/2012 REGULATION - MEI

		PUMP MODEL	IMPELLER	MEI	η_{PL}	η_{BEP}	η_{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

		PUMP MODEL	IMPELLER	MEI	η_{PL}	η_{BEP}	η_{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	$\geq 0,60$	65,1	70,9	69,9

HYDRAULIC EFFICIENCY

EU 547/2012 REGULATION - MEI

		PUMP MODEL	IMPELLER	MEI	η_{PL}	η_{BEP}	η_{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	η_{PL}	η_{BEP}	η_{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

PUMP MODEL	IMPELLER	MEI	η_{PL}	η_{BEP}	η_{OL}
KCE/KCVE 300	Full	$\geq 0,40$	65,5	71,8	70,4
KCE/KCVE 250	Full	$\geq 0,40$	63,4	66,9	66,5
KCE/KCVE 200	Turned		59,3	63,9	62,9
KCE/KCVE 150	Turned		58,9	62,5	61,4

ACCESSORIES

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
 DN50 PN10 COUNTERFLANGE KIT  DN80 - PN16 COUNTERFLANGE KIT	DN 40 - PN 10 COUNTERFLANGE KIT	KLPE 40/600 - DKLPE 40/60 KLPE 40/1200 - DKLPE 40/1200	2,4	180
	DN50 PN10 COUNTERFLANGE KIT	KLME50/600 - DKLME 50/600 KLPE 50/1200 - DKLPE 50/1200	3,2	180
	DN65 PN10 COUNTERFLANGE KIT	KLME 65/600 - DKLME 65/600 KLPE 65/1200 - DKLPE 65/1200	4,0	180
	DN80 PN10 COUNTERFLANGE KIT	KLME 80/600 - DKLME 80/600 KLPE 80/1200 - DKLPE 80/1200	4,8	180
	DN 40 - PN 16 COUNTERFLANGE KIT	CME 40 - CPE 40	5,3	90
	DN50 - PN16 COUNTERFLANGE KIT	CME 50 - CPE 50	6,3	90
	DN65 - PN16 COUNTERFLANGE KIT	CME 65 - CM-GE 65 - CP-GE 65	7,5	90
	DN 80 - PN 16 COUNTERFLANGE KIT	CM-GE 80 - CP-GE 80	9,5	64
	DN100 - PN16 COUNTERFLANGE KIT	CM-GE 100 - CP-GE 100	10,9	64
	DN125 - PN16 COUNTERFLANGE KIT	CM-GE 125 - CP-GE 125	14,5	40
	DN150 - PN16 COUNTERFLANGE KIT	CM-GE 150 - CP-GE 150	18,6	40

* The counter flange kit includes: two counter flanges, nuts and bolts.

TECHNICAL APPENDIX

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/dm³ or kg/l, remembering that 1 dm³ equals 1 litre.

PRESSURE

Pressure means weight per unit of area (e.g. kg/cm²), 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/cm² (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/cm², 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 ³) | = 00,7 x 0,001 x 30 x 100 = 2,1 kg/cm ² |
| b) with water (specific weight 1,0 kg/dm ³) | = 00,1 x 0,001 x 30 x 100 = 3,0 kg/cm ² |
| c) with mercury (specific weight 13,6 kg/dm ³) | = 13,6 x 0,001 x 30 x 100 = 40,8 kg/cm ² |

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 (m³/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.)

γ = the specific weight of the liquid

The delivered power (P3) is calculated using one of the following equations:

$$P3 = \frac{\gamma \text{ (kg/dm}^3\text{)} \times Q \text{ (l/s)} \times H \text{ (m.c.l.)}}{75} \text{ in HP}$$

$$P3 = \frac{\gamma \text{ (kg/dm}^3\text{)} \times Q \text{ (m}^3\text{/h)} \times H \text{ (m.c.l.)}}{270} \text{ in HP}$$

$$P3 = \frac{\gamma \text{ (kg/dm}^3\text{)} \times Q \text{ (l/s)} \times H \text{ (m.c.l.)}}{102} \text{ in kW}$$

$$P3 = \frac{\gamma \text{ (kg/dm}^3\text{)} \times Q \text{ (l/min)} \times H \text{ (m.c.l.)}}{4500} \text{ in HP}$$

$$P3 = \frac{\gamma \text{ (kg/dm}^3\text{)} \times Q \text{ (m}^3\text{/h)} \times H \text{ (m.c.l.)}}{367} \text{ in kW}$$

$$P3 = \frac{\gamma \text{ (kg/dm}^3\text{)} \times Q \text{ (l/min)} \times H \text{ (m.c.l.)}}{6120} \text{ in kW}$$

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^2

$2g = 2 \times 9,81 = 19,62 \text{ m/s}^2$

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.
η	= OUTPUT POWER (RELATION BETWEEN DEVELOPED POWER AND ABSORBED POWER P_2/P_1).
p	= NUMBER OF POLES OF THE MOTOR.
C_n	= 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

$$C_n = \frac{P_2 (\text{kW}) \times 1000}{1.027 \times n^{1/\min}} \text{ in kgm}$$

$$C_n = \frac{P_2 (\text{HP}) \times 736}{1.027 \times n^{1/\min}} \text{ in kgm}$$

$$C_n = \frac{702 \times \text{HP}}{n^{1/\min}} \text{ in decaNewtonmetres}$$

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 μF .

V = applied voltage.

Example:

The current absorbed by a 14 μF capacitor connected to a 220 Volt - 50 Hz power input is:

$$I = \frac{6,28 \times 50 \times 14 \times 220}{1.000.000} = 0,96 \text{ Amperes}$$

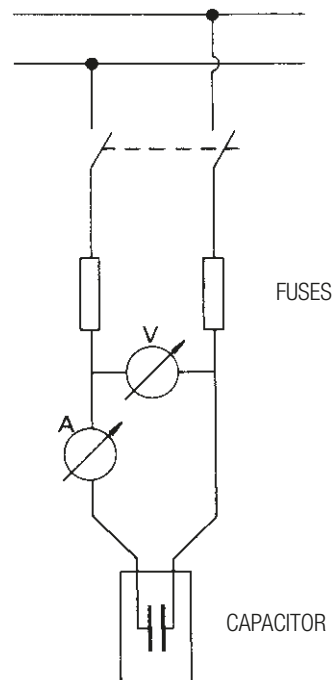
The approximate capacity of a capacitor is determined by:

$$C = \frac{I}{6,28 \times F \times V} \times 1,000,000$$

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 Δ 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 Δ 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	m³/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				HAZEN WILLIAMS CALCULATION FORMULA (UNI 9489 13.3.6)			
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									
I/s	I/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		HAZEN WILLIAMS CALCULATION FORMULA (UNI 9489 13.3.3.6)						3,77	2,65	1,5
										11,83	5,02	1,26
66,67	4000	240								5,03	3,53	2
										20,15	8,55	2,14
83,33	5000	300									4,42	2,5
											12,93	3,23

White numbers: Load losses in m. for every 100 m of pipework

Green numbers: Water speed in m/sec

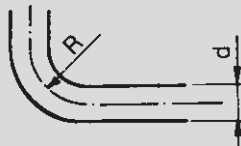
The table refers to galvanised pipework.

For other materials multiply as follows:

- 0,6 PVC pipes.
- 0,7 aluminium pipes.
- 0,8 laminated steel and stainless steel.

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:

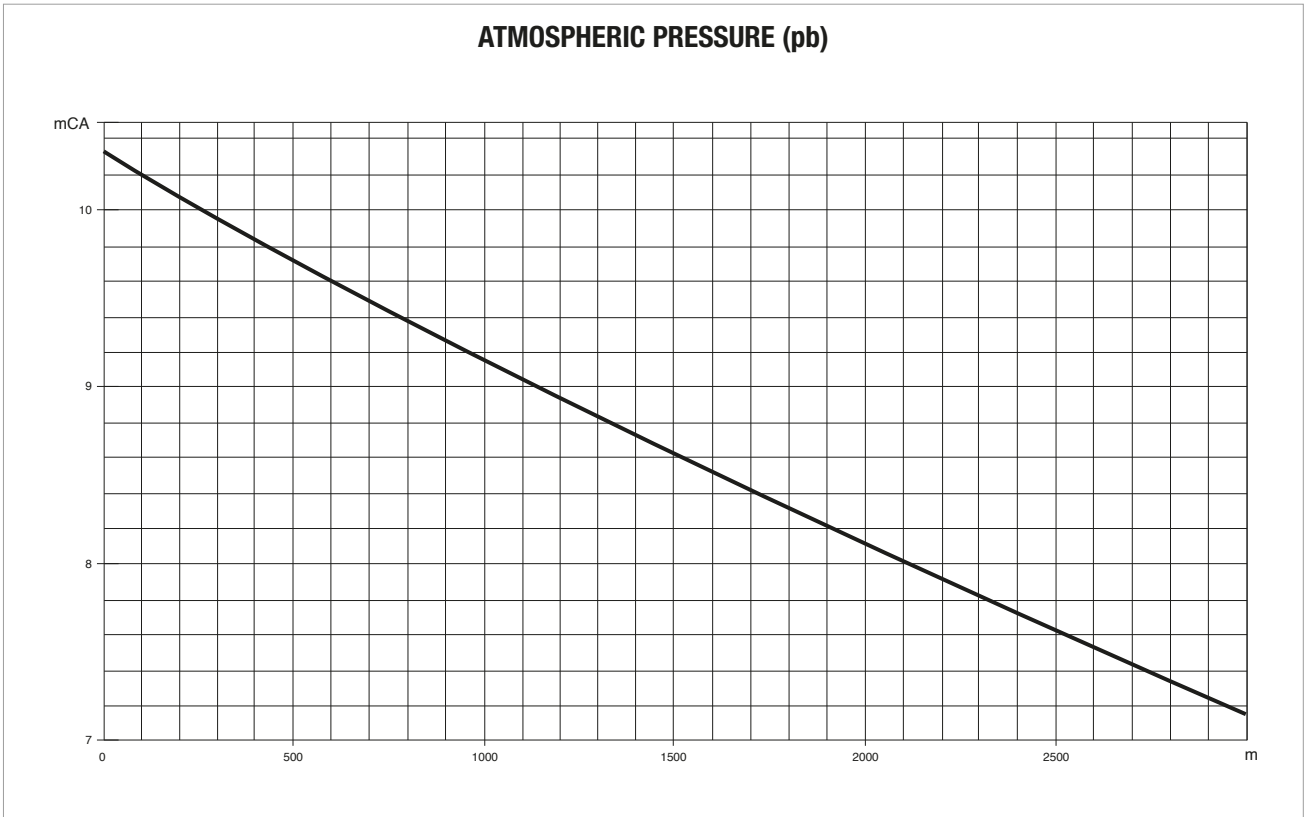
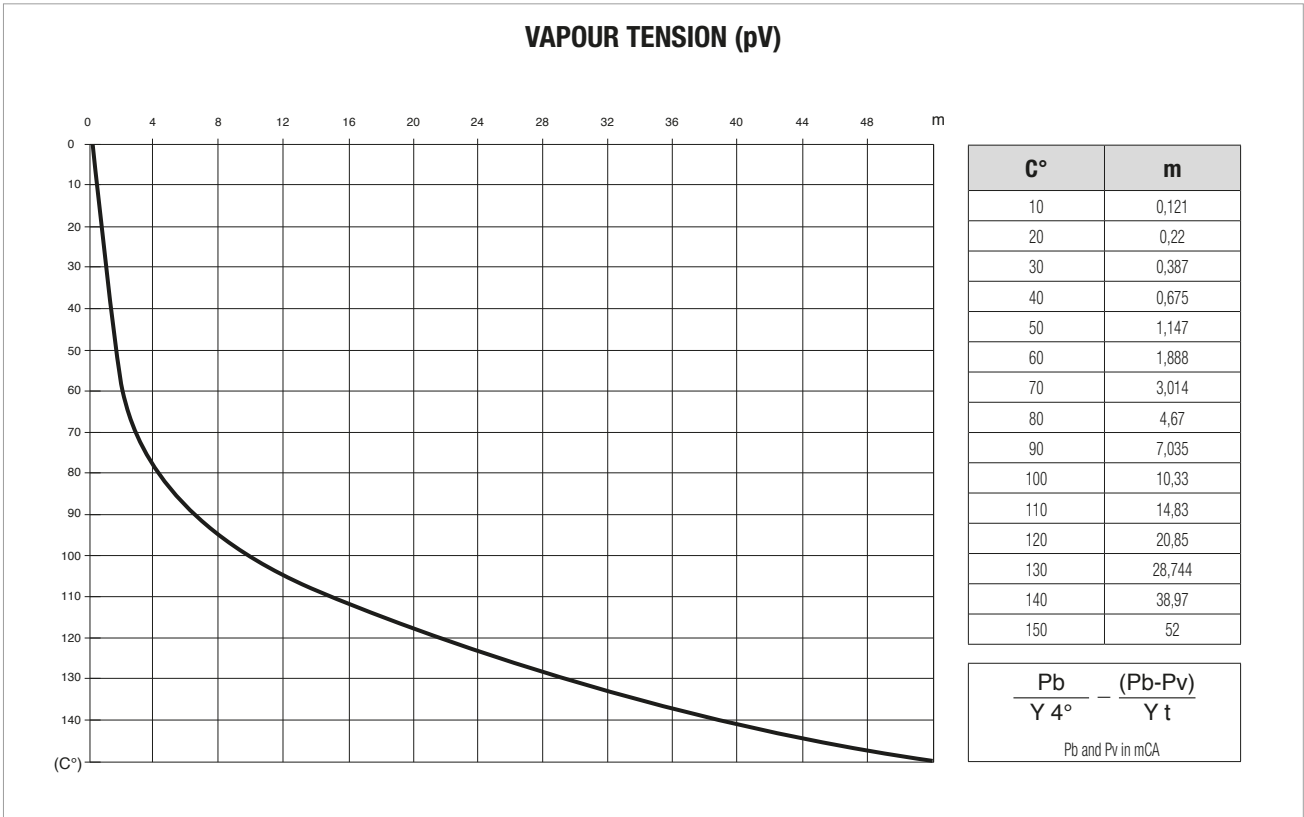
$$h = \lambda \times \frac{100}{d} \times \frac{v^2}{2g} \quad \lambda = 0,02 + \frac{0,0018}{\sqrt{v \times d}}$$

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 ² cm ² mm ²	1 cm ² = 0,0001 m ² 1 mm ² = 0,01 cm ²		1 m ² = 1,196 sq.yd 1 m ² = 10,764 sq.ft 1 cm ² = 0,155 sq.in
	Imperial	square inch square foot square yard	sq.in sq.ft sq.yd	1 sq.in = 6,45 cm ² 1 sq.ft = 0,0929 m ² 1 sq.yd = 0,836 m ²		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 ³ cm ³ mm ³ l	1 m ³ = 1.000 dm ³ 1 cm ³ = 0,001 m ³ = 1.000 cm ³ 1 mm ³ = 0,001 dm ³ 1 l = dm ³		1 dm ³ = 0,22 Imp.gal 1 dm ³ = 0,264 US.gal 1 dm ³ = 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 ³ 1 cu.ft = 28,34 m ³ 1 Imp.gal = 4,546 m ³ 1 US.gal = 3,785 dm ³		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 ³	—	1 kg/dm ³ = 9,807 N/dm ³	1 kg/dm ³ = 62,46 lb/cu.ft
	International	Newton per decimetre cubed	N/dm ³	1 N/dm ³ = 0,102 kg/dm ³	—	1 N/dm ³ = 6,36 lb/cu.ft
	Imperial	pound per cubic foot	lb/dm ³	1 lb/cu.ft = 0,01600 kg/dm ³	1 lb/cu.ft = 0,160 N/dm ³	—
PRESSURE	Technical	atmospheres	kg/cm ²	—	1 kg/cm ² = 98,067 kPa 1 kg/cm ² = 0,9807 bar	1 kg/cm ² = 14,22 psi
	International	Pascal kiloPascal bar	Pa kPa bar	1 kPa = 0,0102 kg/cm ² 1 bar = 1,02 kg/cm ²	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 ²	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 ³ /h	1 l/min = 0,0167 l/s 1 l/s = 3,6 m ³ /h 1 m ³ /h = 16,667 l/min	1 l/s = 0,001 m ³ /s	1 l/min = 0,22 imp.g.p.m. 1 l/min = 0,264 US.g.p.m. 1 m ³ /h = 3,666 imp.g.p.m. 1 m ³ /h = 4,403 US.g.p.m.
	International	metres cubed per second	m ³ /s	1 m ³ /s = 1.000 l/s 1 m ³ /s = 3.600 m ³ /h	—	1 m ³ /s = 13,198 imp.g.p.m. 1 m ³ /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 ³ /h 1 US.g.p.m. = 3,785 l/min 1 US.g.p.m. = 0,227 m ³ /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 ² /s 1 cSt = 0,01 St	1 St = 0,0001 m ² /s	1 St = 0,00107 ft ² /s
	International	m ² /s	m ² /s	1 m ² /s = 10.000 St	1 m ² /s = 10.000 cm ² /s	1 m ² /s = 10,764 ft ² /s
	Imperial	square foot per second	ft ² /s	1 ft ² /s = 929 St	1 ft ² /s = 0,0929 m ² /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:

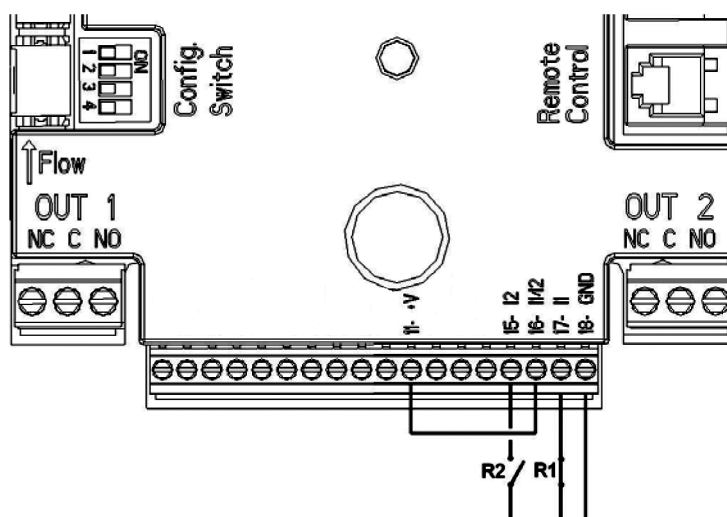
- 11 - V+
- 15 - I2
- 16 - I1/I2
- 17 - I1
- 18 - GND

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 [mm²]	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.

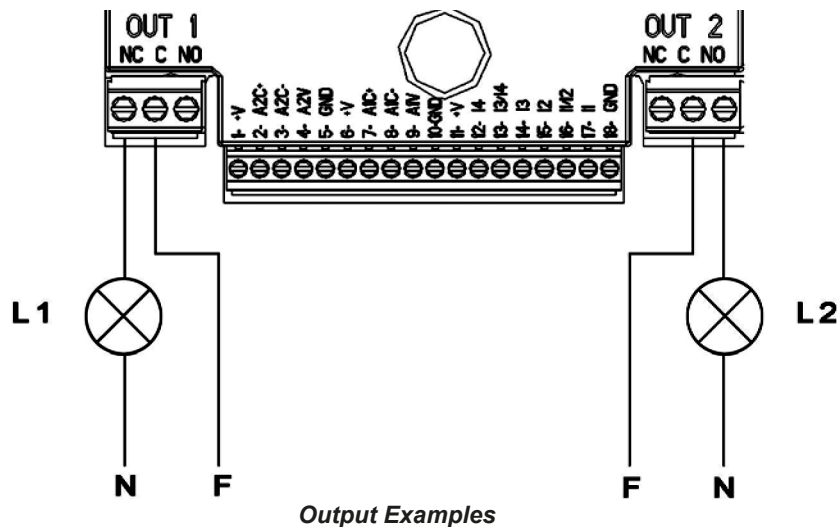
Functions associated to the digital inputs	
I1	Start/Stop: If input 1 is activated from the control panel, it will be possible to remotely control the switching on and off of the pump.
I2	Economy: If input 2 is activated from the control panel, it will be possible to remotely activate the set-point reduction 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 ²]	3,80



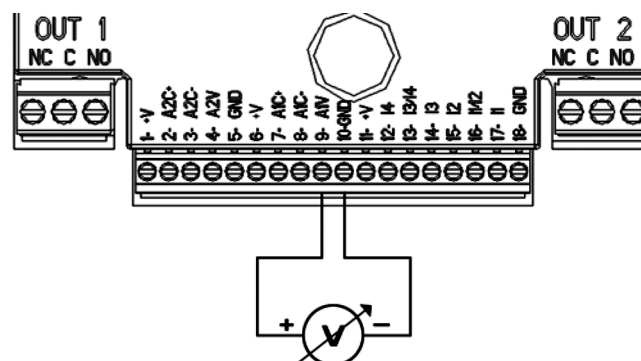
In the example shown, light L1 comes on when the system includes an alarm, and goes off when no faults are detected, while light L2 comes on when the pump is in operation, and goes off when the pump is stopped.

Functions associated to the outputs	
OUT1	Presence/absence of system alarms
OUT2	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

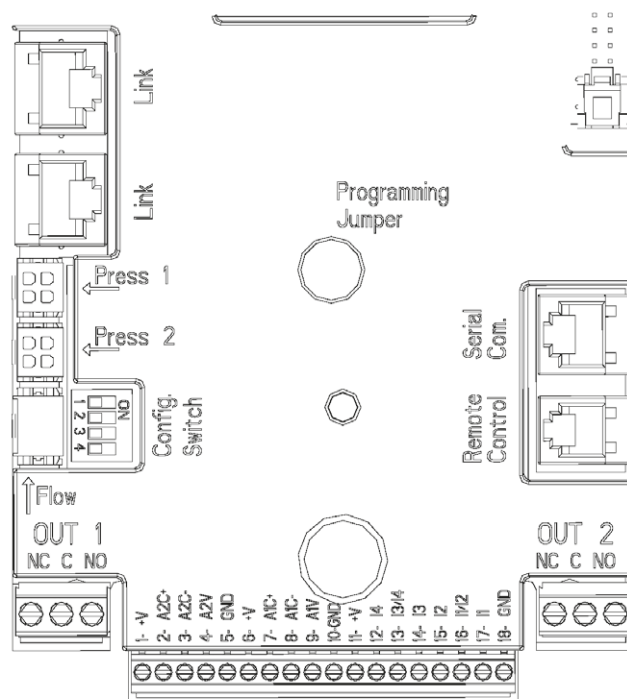
The function associated to the 0-10 V analogue input is the **adjustment of the rotation speed of the pump in proportion to the 0-10 V power input voltage itself.**

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**.

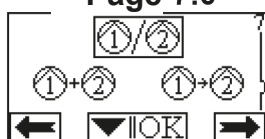
For correct operation of the twin system, it is necessary that all the input terminal board external connections are in parallel between the 2 MCE/C, complying with the numerations of the individual terminals (e.g. terminal 17 of the MCE-22/C-1 with terminal 17 of MCE-22/C-2, and so on).



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



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.



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.



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

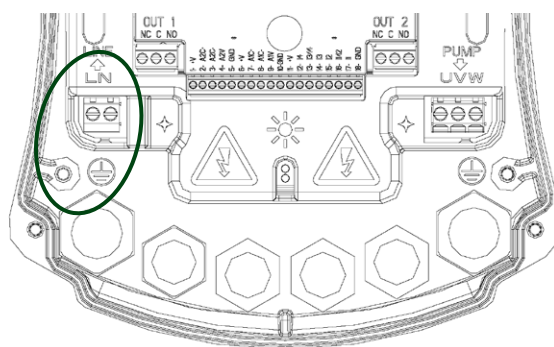


Figure 1: Electric Connections

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 mm²

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

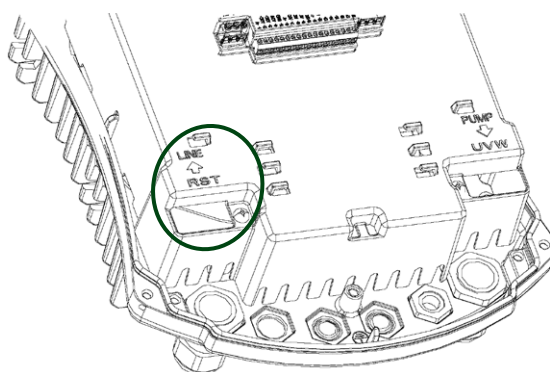


Figure 2: Electric Connections

The maximum section accepted by the input and output terminals is 6 mm².

The external diameter of the input and output cables accepted by the cable glands for appropriate tightening goes from 11 mm² minimum, to 17 mm² 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

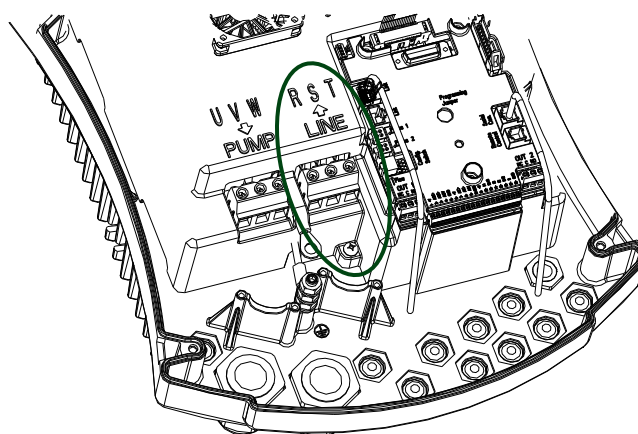
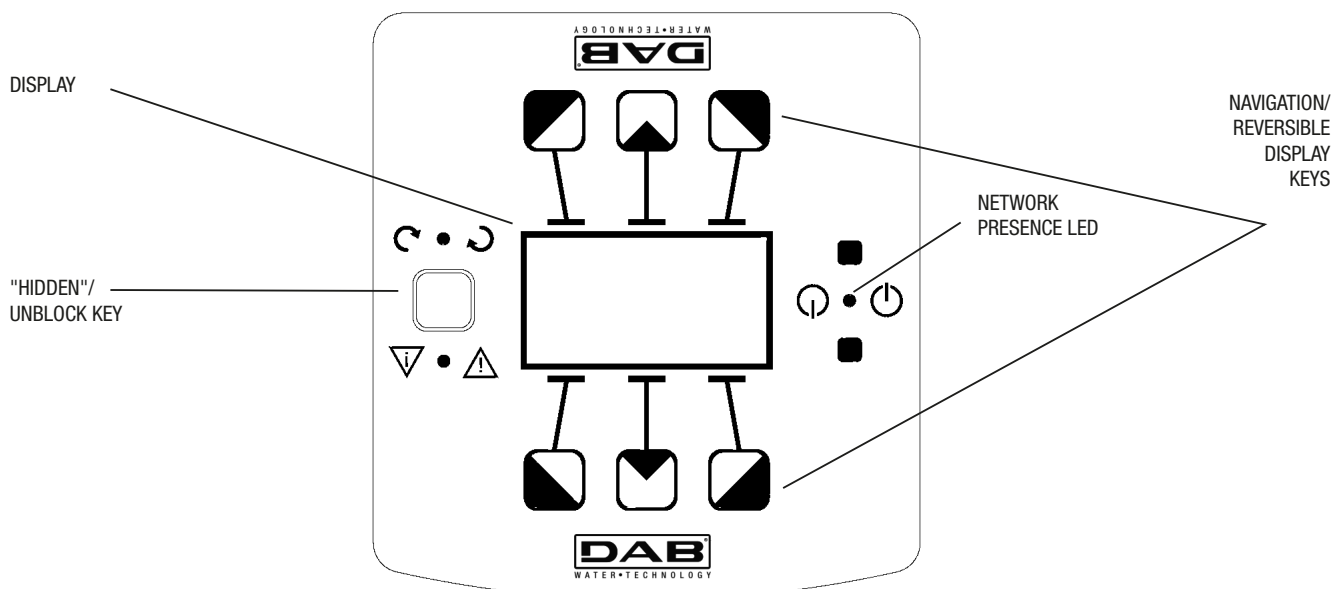


Figure 3: Electric Connections

The minimum section of the input and output cables is 6 mm² to ensure correct tightening of the cable glands, while the maximum section accepted by the terminals is 16 mm².

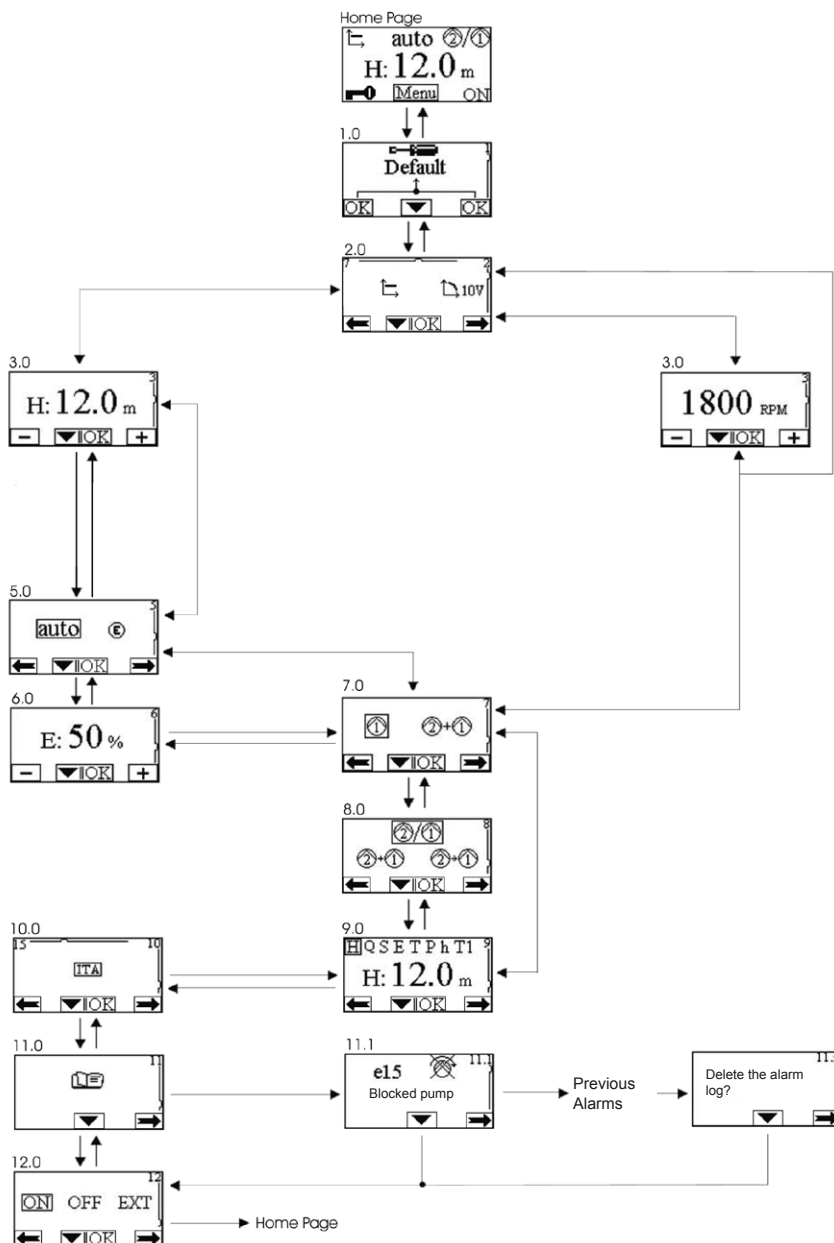
The MCE-110/C and MCE-150/C power input current can be generally assessed (with a safety margin) as 1/8 more than the current absorbed by the pump. Although the MCE-110/C and MCE-150/C are already fitted with internal protections, it is recommended that a protection thermal magnetic circuit breaker of 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
	Δp-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	- Remove voltage to the MCE - Wait 5 minutes and then reconnect the MCE. - If the error persists, replace the MCE.
E37	Low network voltage (LP)	Remove voltage to the MCE - Wait 5 minutes and then reconnect the MCE. - Check that the network voltage is correct. If necessary reset it to the plate details.
E38	High network voltage (HP)	- Remove voltage to the MCE - Wait 5 minutes and then reconnect the MCE. - Check that the network voltage is correct. If necessary reset it to the plate details.
E32-E35	Critical overheating of electronic parts	- Remove voltage to the MCE - After waiting 5 minutes, remove the MCE from the pump and clean the cover of the motor. - Clean the dissipator.
E43-E45; E54	No sensor signal	- Check the connection of the sensor. - Replace the sensor, if faulty.
E39-E40	Current overload protection	- Check that the circulator is turning freely. - Check that the antifreeze added does not exceed the maximum amount of 30 %.
E21-E30	Voltage Error	- Remove voltage to the MCE. - Wait 5 minutes and then reconnect the MCE. - Check that the network voltage is correct. If necessary reset it to the plate details.
E31	Twin communication not found	- Check that the communication cable is not damaged. - Check that both circulators can be powered.

NOTES

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PUMPS SELECTOR

On-line product selection



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