KVCE

VERTICAL AXIS MULTISTAGE CENTRIFUGAL PUMPS WITH MCE/P INVERTER



TECHNICAL DATA

Operating range:
from 1 to 12 m^3/h with head up to 110 metres.
Pumped liquid: clean, free of solids and abrasives, non-viscous, non crystallised and chemically neutral, with properties similar to water.
Liquid temperature range:
from 0 °C to +35 °C for domestic use
(EN 60335-2-41 safety standards).
from 0 °C to +40 °C for other uses.
Maximum ambient temperature: +40 °C.
Maximum operating pressure: 12 bar (1200 kPa).
Installation: fixed, vertical position.

APPLICATIONS

Vertical multistage centrifugal pump suitable for medium to large user water systems. Recommended for pressurisation units, boiler supply, hot water and cooling water circulation, fire fighting and washing systems, drinking water supply and filling of pressure vessels, sprinkler and watering systems and water purification systems.

ADVANTAGES OF USE

Operating pressure stability – **Excellent energy saving** (up to 60 %) – Reduced hammering effects –
Reduced space requirements – Less maintenance – Reduced pump wear – Less power factor correction required – Less water consumption – Integrated protections.

CONSTRUCTION FEATURES OF THE PUMP

Technopolymer delivery and suction bodies with IN-LINE suction and delivery ports with threaded metal insert.
Impellers, diffuser bodies and diffusers in technopolymer, fully rust-proof.
AISI 304 stainless steel pump liner, adjustment rings and seal disc. Carbon/ceramic mechanical seal, fitted on the AISI 303 stainless-steel drive shaft extension.

CONSTRUCTION FEATURES OF THE MOTOR

Shaft with rotor running on permanently lubricated ball bearings, oversized to ensure low noise and durability.
Construction according to CEI 2-3.
Controlled by MCE inverter.
Protection class: IP 55
Insulation class: F.
Standard single-phase voltage: 1x230 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

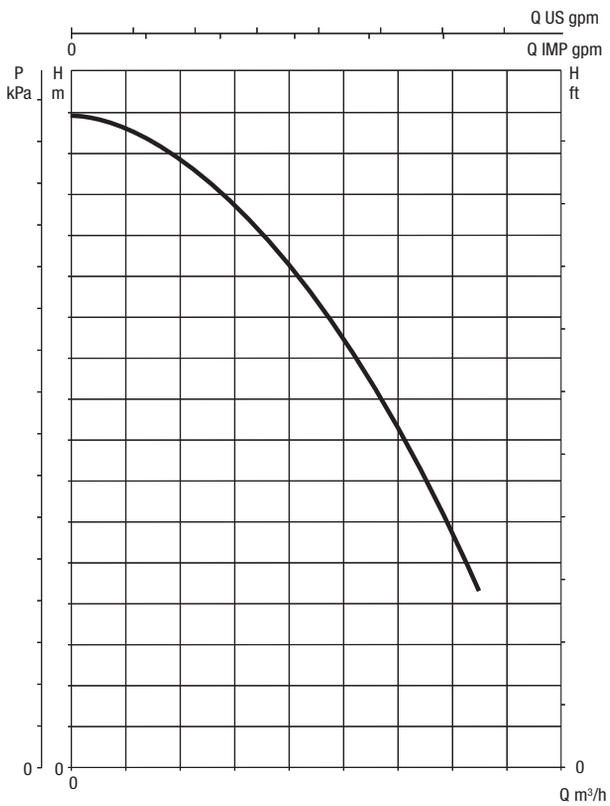
MCE/P INVERTER

MCE-P

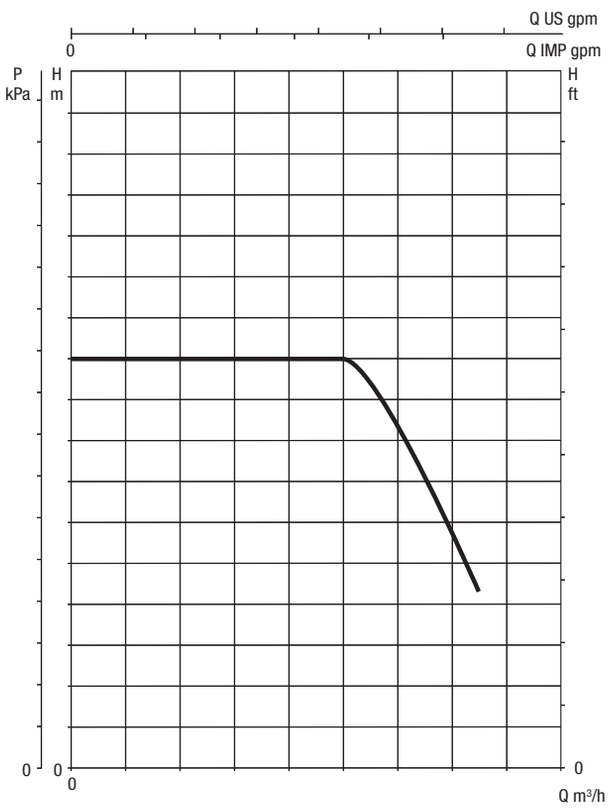
CONSTRUCTION FEATURES OF THE ELECTRONICS: MCE/P INVERTER

The inverter continuously adjusts the rotation speed of the electric pump, keeping the pressure constant, even when the flow rate varies.
The other electric pumps, also with variable speed, are activated in cascade after the first one has reached maximum speed. Through modulation, they compensate the pressure fluctuations of the system.
For every operating cycle, it is possible to switch the restart to a different pump, therefore ensuring even use of all electric pumps.
It is possible to set operation times for each individual pump, switching to another pump after such set times.
The "SP" pressure can be adjusted by the user using the "+" and "-" keys found on the MCE/P (as a rule, all the pumps are set to the same pressure value). With the new MCE/P, it is sufficient to set the data on one of the devices, and it will be automatically propagated to the other pumps of the system.

MODES OF OPERATION



PERFORMANCE CURVES WITHOUT INVERTER



PERFORMANCE CURVES WITH INVERTER

The inverter is capable of maintaining a constant pressure even when the flow rate varies.
The operating pressure can be adjusted by the user.
A good pressure set-point is between 1/3 and 2/3 of the maximum head of the electric pump. In this way, high efficient of the pump is maintained, together with maximum saving.
In addition, the MCE/P does not block the pump if the pressure is not reached, but the flow is present. This prevents service interruptions in case of high flows.

For more information refer to the technical appendix.

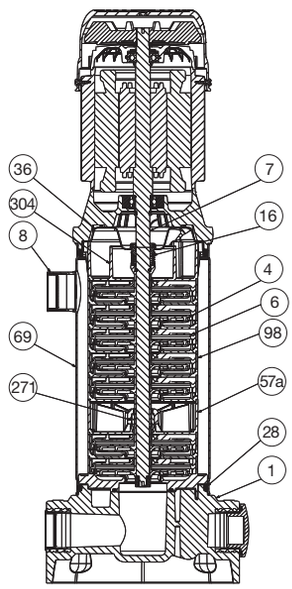
KVCE

VERTICAL AXIS MULTISTAGE CENTRIFUGAL PUMPS WITH MCE/P INVERTER

MATERIALS

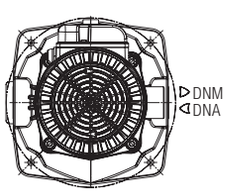
N.	PARTS*	MATERIALS
1	PUMP BODY	TECHNOPOLYMER A
4	IMPELLER	TECHNOPOLYMER B
6	DIFFUSER	TECHNOPOLYMER B
7	SHAFT WITH ROTOR	AISI 303 STAINLESS STEEL X10 CrNi S 1089 UNI 6900/71
16	MECHANICAL SEAL	SILICON CARBIDE/SILICON
28	OR RING	EPDM RUBBER
36	SEAL HOLDING DISC	AISI 304 STAINLESS STEEL X5 CrNi 1810 UNI 6900/71
57a	INTERMEDIATE STAGE	TECHNOPOLYMER B
69	LINER	AISI 304 STAINLESS STEEL X5 CrNi 1810 UNI 6900/71
98	DIFFUSER BODY	TECHNOPOLYMER B
271	CENTERING BUSHING	BRONZE B14
304	CONVEYOR	TECHNOPOLYMER B
8	DNM (standard for KVCX only)	

* In contact with the liquid.

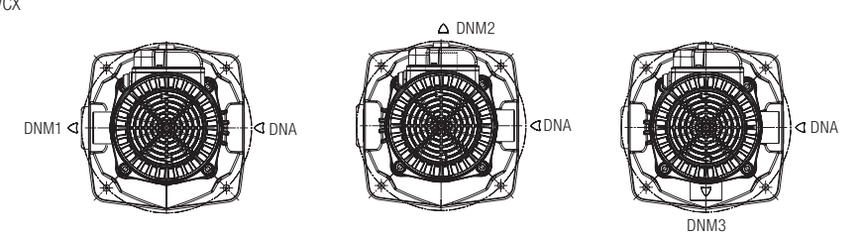


KVCX SUCTION AND DELIVERY PORT ORIENTATION

STANDARD EXECUTION:
KVCX



SPECIAL EXECUTIONS:
KVCX



KVCE

VERTICAL AXIS MULTISTAGE CENTRIFUGAL PUMPS WITH MCE/P INVERTER

SELECTION TABLE - KVCE 30

MODEL	Q=m³/h	0	0,6	1,2	1,8	2,4	3	3,3
	Q=l/min	0	10	20	30	40	50	55
KVCE 35-30 M MCE11/P	H (m)	45,6	43,2	39,1	34,1	28,2	20,2	15,6
KVCE 45-30 M MCE11/P		56,6	53,5	48,4	42,0	34,6	24,5	19,0
KVCE 50-30 M MCE11/P		69,8	66,2	59,9	52,2	43,1	30,9	23,9
KVCE 60-30 M MCE11/P		82,0	77,0	70,0	61,0	49,5	35,5	27,5
KVCE 70-30 M MCE11/P		95,0	90,0	81,5	71,0	58,7	42,0	32,5

SELECTION TABLE - KVCE 50

MODEL	Q=m³/h	0	0,6	1,2	1,8	2,4	3	3,3	3,9	4,8
	Q=l/min	0	10	20	30	40	50	55	65	80
KVCE 30-50 M MCE11/P	H (m)	41,1	40,3	39,0	37,3	34,7	31,6	29,7	25,3	17,1
KVCE 40-50 M MCE11/P		54,9	53,7	52,0	49,7	46,3	42,1	39,6	33,7	22,9
KVCE 55-50 M MCE11/P		68,6	67,1	65,0	62,1	57,9	52,7	49,5	42,1	28,6
KVCE 65-50 M MCE15/P		82,3	80,6	78,0	74,6	69,4	63,2	59,4	50,6	34,3
KVCE 75-50 M MCE15/P		96,0	94,0	91,0	87,0	81,0	73,8	69,3	59,0	40,0

SELECTION TABLE - KVCE 80

MODEL	Q=m³/h	0	0,6	1,2	1,8	2,4	3	3,3	3,9	4,8	5,4	6	7,2
	Q=l/min	0	10	20	30	40	50	55	65	80	90	100	120
KVCE 30-80 M MCE11/P	H (m)	46,6	45,8	44,6	43,4	41,8	39,5	38,0	35,2	29,8	25,5	21,0	11,0
KVCE 40-80 M MCE11/P		58,8	57,9	56,5	55,0	53,1	50,3	48,5	45,0	38,4	33,1	27,6	15,1
KVCE 45-80 M MCE15/P		71,3	70,2	68,7	66,9	64,7	61,4	59,4	55,3	47,5	41,4	34,9	19,9
KVCE 55-80 M MCE15/P		84,0	82,8	81,2	79,2	76,6	72,9	70,7	66,0	57,1	50,3	42,8	25,5
KVCE 65-80 M MCE22/P		97,0	95,7	94,0	91,8	88,9	84,7	82,5	77,2	67,3	59,9	51,5	32,0

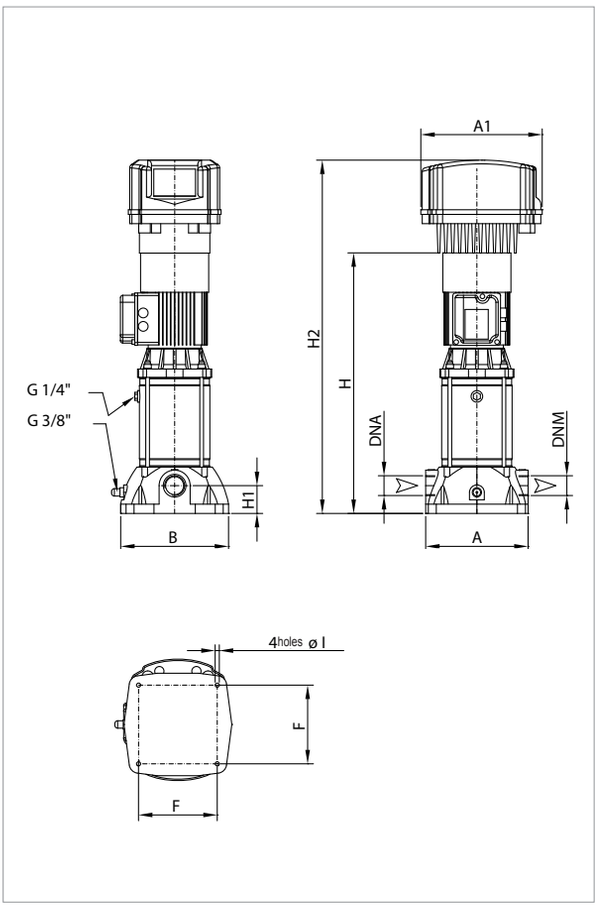
SELECTION TABLE - KVCE 120

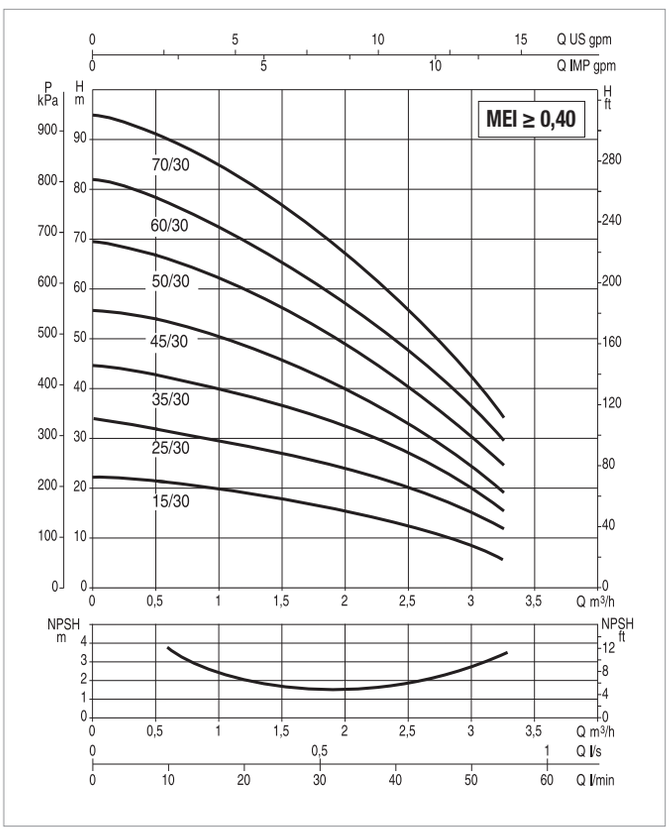
MODEL	Q=m³/h	0	0,6	1,2	1,8	2,4	3	3,3	3,9	4,8	5,4	6	7,2	8,4	9,6	10,8	12
	Q=l/min	0	10	20	30	40	50	55	65	80	90	100	120	140	160	180	200
KVCE 35-120 M MCE15/P	H (m)	46,2	46,1	45,7	45,3	44,8	44,0	43,7	42,7	40,9	39,3	37,4	33,7	29,4	24,2	18,0	11,0
KVCE 45-120 M MCE22/P		62,4	62,0	61,4	60,8	60,1	59,1	58,6	57,5	55,3	53,4	51,4	46,2	40,6	34,0	26,3	17,0
KVCE 60-120 T MCE30/P		78,0	77,5	76,7	75,9	75,1	73,9	73,3	71,5	68,3	65,9	63,2	58,0	51,0	43,4	35,0	24,5
KVCE 70-120 T MCE30/P		95,0	94,3	93,4	92,5	91,4	89,8	88,9	86,8	83,2	80,5	77,9	71,7	63,9	54,7	44,0	31,0
KVCE 85-120 T MCE30/P		112,7	111,6	110,3	109,0	107,6	105,7	104,5	101,9	97,5	94,1	89,9	81,6	72,1	61,2	48,9	34,0

DAB PUMPS reserves the right to make modifications without notice.

KVCE 30 - VERTICAL AXIS MULTISTAGE CENTRIFUGAL PUMPS WITH MCE/P INVERTER FOR PRESSURISATION SYSTEMS

Pumped liquid temperature range: from 0 °C to +35 °C for domestic use - from 0 °C to +40 °C for the other uses





See hydraulic efficiency details on page 241.

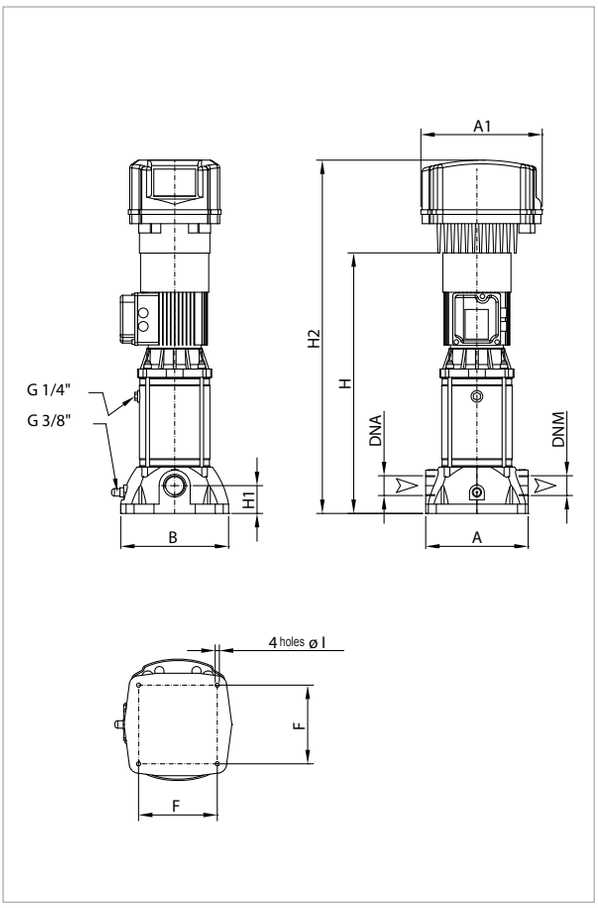
The performance curves are based on kinematic viscosity values = 1 mm^2/s and density equal to 1000 kg/m^3. Curve tolerance according to ISO 9906.

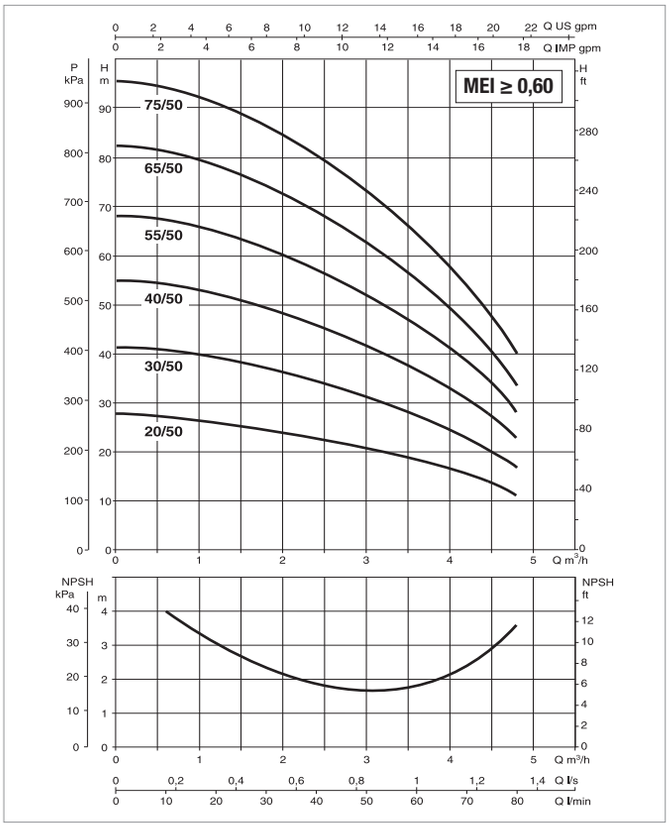
MODEL	ELECTRICAL DATA					
	N. IMPELLERS	POWER INPUT 50 Hz	P2 NOMINAL		In A	r.p.m.
			kW	HP		
KVCE 35-30 M MCE11/P	4	1 x 230 V	0,45	0,6	6,63	2822
KVCE 45-30 M MCE11/P	5	1 x 230 V	0,55	0,75	7,71	2788
KVCE 50-30 M MCE11/P	6	1 x 230 V	0,75	1,0	8,36	2858
KVCE 60-30 M MCE11/P	7	1 x 230 V	0,8	1,1	9,19	2842
KVCE 70-30 M MCE11/P	8	1 x 230 V	1,0	1,36	10,2	2850

MODEL	A	B	F	H	H1	H2	ØI	DNA GAS	DNM GAS	PACKING DIMENSIONS			VOLUME (m^3)	WEIGHT kg
										L/A	L/B	H		
KVCE 35-30 M MCE11/P	221	235	170	562	60	762	9	1"¼	1"¼	300	360	856	0,092	19,6
KVCE 45-30 M MCE11/P	221	235	170	562	60	762	9	1"¼	1"¼	300	360	856	0,092	19,6
KVCE 50-30 M MCE11/P	221	235	170	655	60	855	9	1"¼	1"¼	300	360	935	0,101	20,9
KVCE 60-30 M MCE11/P	221	235	170	655	60	855	9	1"¼	1"¼	300	360	935	0,101	20,9
KVCE 70-30 M MCE11/P	221	235	170	682	60	882	9	1"¼	1"¼	300	360	976	0,105	22,7

KVCE 50 - VERTICAL AXIS MULTISTAGE CENTRIFUGAL PUMPS WITH MCE/P INVERTER FOR PRESSURISATION SYSTEMS

Pumped liquid temperature range: from 0 °C to +35 °C for domestic use - from 0 °C to +40 °C for the other uses





See hydraulic efficiency details on page 241.

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

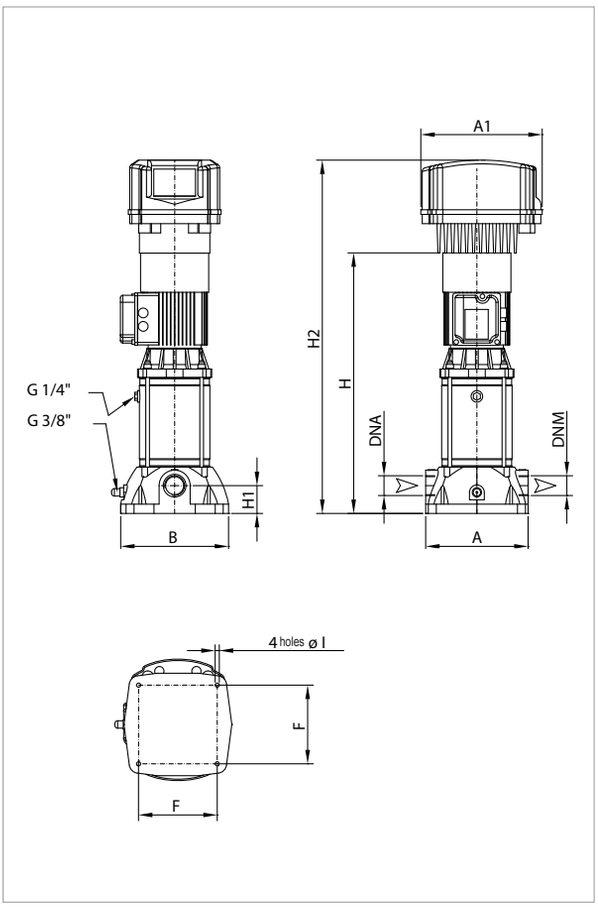
MODEL	ELECTRICAL DATA					
	N. IMPELLERS	POWER INPUT 50 Hz	P2 NOMINAL		In A	r.p.m.
			kW	HP		
KVCE 30-50 M MCE11/P	3	1 x 230 V	0,55	0,75	8,51	2714
KVCE 40-50 M MCE11/P	4	1 x 230 V	0,8	1,1	10,2	2816
KVCE 55-50 M MCE11/P	5	1 x 230 V	1,0	1,4	12	2795
KVCE 65-50 M MCE15/P	6	1 x 230 V	1,1	1,5	14,6	2870
KVCE 75-50 M MCE15/P	7	1 x 230 V	1,5	2,0	16,6	2847

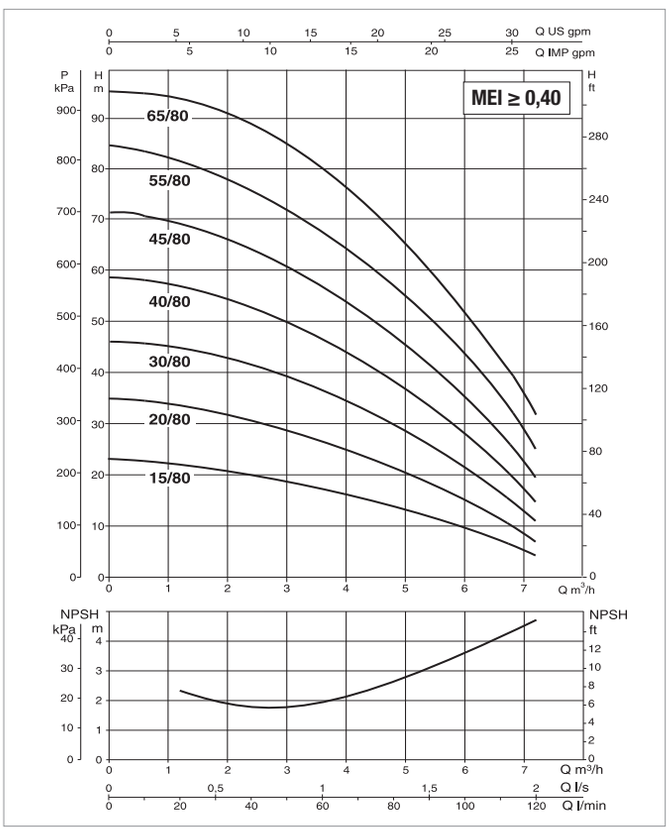
MODEL	A	B	F	H	H1	H2	ØI	DNA GAS	DNM GAS	PACKING DIMENSIONS			VOLUME (m^3)	WEIGHT kg
										L/A	L/B	H		
KVCE 30-50 M MCE11/P	221	235	170	506	60	706	9	1"¼	1"¼	300	360	800	0,086	19,1
KVCE 40-50 M MCE11/P	221	235	170	562	60	762	9	1"¼	1"¼	300	360	856	0,092	22,4
KVCE 55-50 M MCE11/P	221	235	170	562	60	762	9	1"¼	1"¼	300	360	856	0,092	22,4
KVCE 65-50 M MCE15/P	221	235	170	655	60	855	9	1"¼	1"¼	300	360	935	0,101	26,4
KVCE 75-50 M MCE15/P	221	235	170	655	60	855	9	1"¼	1"¼	300	360	935	0,101	26,4

DAB PUMPS reserves the right to make modifications without notice.

KVCE 80 - VERTICAL AXIS MULTISTAGE CENTRIFUGAL PUMPS WITH MCE/P INVERTER FOR PRESSURISATION SYSTEMS

Pumped liquid temperature range: from 0 °C to +35 °C for domestic use - from 0 °C to +40 °C for the other uses





See hydraulic efficiency details on page 241.

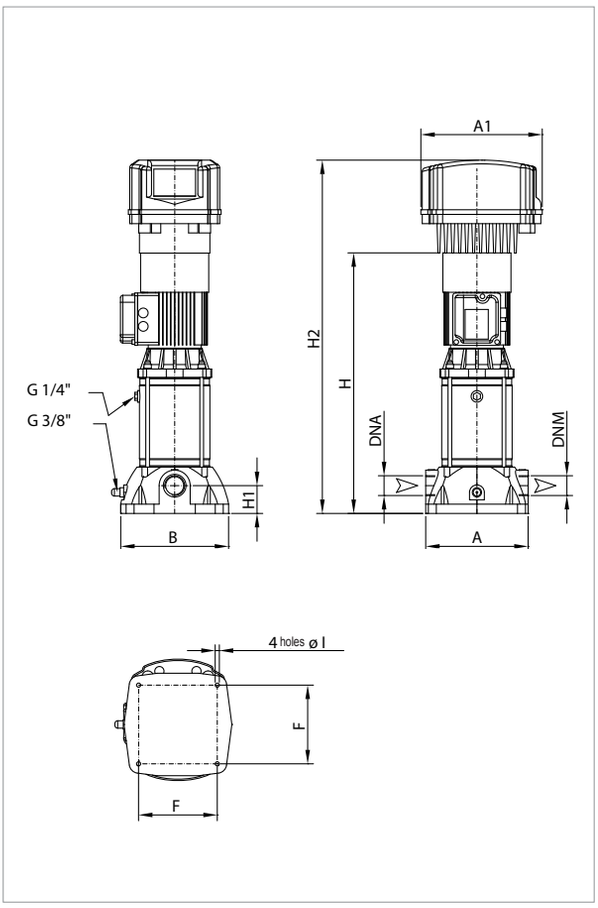
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

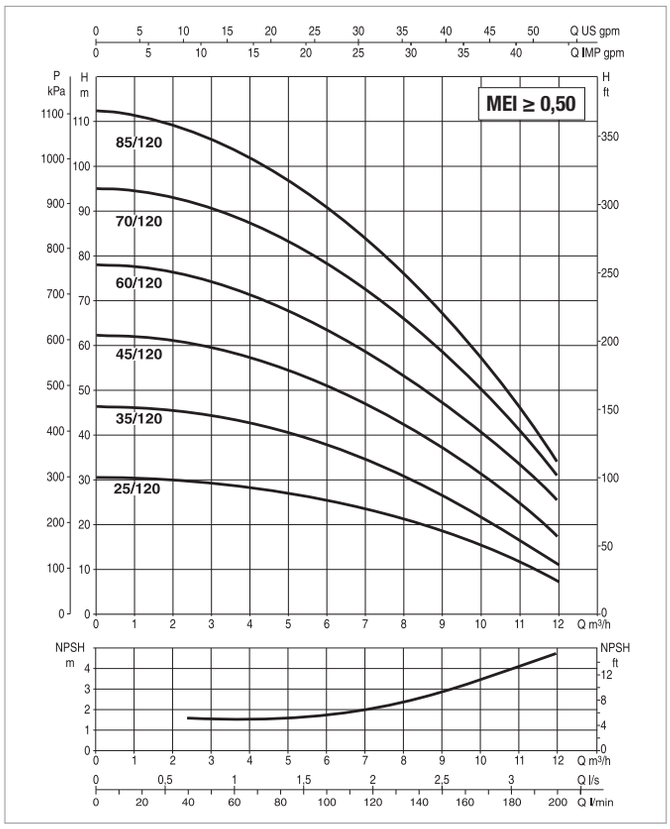
MODEL	ELECTRICAL DATA					
	N. IMPELLERS	POWER INPUT 50 Hz	P2 NOMINAL		In A	r.p.m.
			kW	HP		
KVCE 30-80 M MCE11/P	4	1 x 230 V	0,8	1,1	9,99	2827
KVCE 40-80 M MCE11/P	5	1 x 230 V	1,0	1,36	11,7	2805
KVCE 45-80 M MCE15/P	6	1 x 230 V	1,1	1,5	14,2	2880
KVCE 55-80 M MCE15/P	7	1 x 230 V	1,5	2,0	16	2851
KVCE 65-80 M MCE22/P	8	1 x 230 V	2,2	3,0	18	2852

MODEL	A	B	F	H	H1	H2	ØI	DNA GAS	DNM GAS	PACKING DIMENSIONS			VOLUME (m^3)	WEIGHT kg
										L/A	L/B	H		
KVCE 30-80 M MCE11/P	221	235	170	562	60	762	9	1"¼	1"¼	300	360	856	0,092	22,4
KVCE 40-80 M MCE11/P	221	235	170	562	60	762	9	1"¼	1"¼	300	360	856	0,092	22,4
KVCE 45-80 M MCE15/P	221	235	170	655	60	855	9	1"¼	1"¼	300	360	935	0,101	26,4
KVCE 55-80 M MCE15/P	221	235	170	655	60	855	9	1"¼	1"¼	300	360	935	0,101	26,4
KVCE 65-80 M MCE22/P	221	235	170	680	60	880	9	1"¼	1"¼	300	360	960	0,104	27,4

KVCE 120 - VERTICAL AXIS MULTISTAGE CENTRIFUGAL PUMPS WITH MCE/P INVERTER FOR PRESSURISATION SYSTEMS

Pumped liquid temperature range: from 0 °C to +35 °C for domestic use - from 0 °C to +40 °C for the other uses





See hydraulic efficiency details on page 241.

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

MODEL	ELECTRICAL DATA					
	N. IMPELLERS	POWER INPUT 50 Hz	P2 NOMINAL		In A	r.p.m.
			kW	HP		
KVCE 35-120 M MCE15/P	3	1 x 230 V	1,1	1,5	16	2857
KVCE 45-120 M MCE22/P	4	1 x 230 V	1,84	2,5	19,5	2835
KVCE 60-120 T MCE30/P	5	3 x 400 V	2,2	3,0	6,91	2765
KVCE 70-120 T MCE30/P	6	3 x 400 V	2,2	3,0	8,26	2794
KVCE 85-120 T MCE30/P	7	3 x 400 V	2,2	3,0	9,18	2755

MODEL	A	B	F	H	H1	H2	ØI	DNA GAS	DNM GAS	PACKING DIMENSIONS			VOLUME (m^3)	WEIGHT kg
										L/A	L/B	H		
KVCE 35-120 M MCE15/P	221	235	170	505	60	705	9	1"¼	1"¼	300	360	785	0,085	23,8
KVCE 45-120 M MCE22/P	221	235	170	635	60	835	9	1"¼	1"¼	300	360	915	0,099	29,0
KVCE 60-120 T MCE30/P	221	235	170	635	60	835	9	1"¼	1"¼	300	360	915	0,099	27,1
KVCE 70-120 T MCE30/P	221	235	170	730	60	930	9	1"¼	1"¼	300	360	1010	0,109	30,8
KVCE 85-120 T MCE30/P	221	235	170	730	60	930	9	1"¼	1"¼	300	360	1010	0,109	30,8

50250013 - 09/2016

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