

# CPS3-10

## THREE-PHASE ELECTRONIC FREQUENCY CONVERTER

Easy to install, Low power consumption, Compact size

CPS 3-10 is an electronic device capable of changing the frequency of a pump. Integrated directly on the motor, it allows to adjust its speed so as to supply the same pressure at all times, even when the water demand changes. CPS represents a compact, essential and reliable solution which is easy to use; designed to offer great comfort and benefits in various applications such as: irrigation, pressurization and water transfer, residential, commercial and industrial uses. The CPS range is characterised by a simple and elegant design with a backlight graphic display which informs the user of the operating parameters in real time.

The operating principle is simple and effective. The CPS powers the electric motor of the pump on which it is mounted and, by means of a feedback system that uses a pressure transducer, it changes the supply frequency of the electric motor depending on the water demand in order to keep the output pressure of the pump constant, the value

of which is set on the device (set point). CPS ensures high levels of efficiency and greater flexibility in performance, ensuring a high energy saving and making the use of other control devices unnecessary. The range offers a host of functions:

- Pressure measurement with the possibility to manage 2 independent levels adjustable by means of a time added internally or with an external connection;
- Start and stop;
- Internal clock;
- Calculation of the speed of the motor;
- Protection against dry running;
- Over and under current protection;
- Over and under voltage protection.



### APPLICATIONS

- Pressurization systems
- Water supply
- Industry
- Construction
- Washes

### PROTECTION DEVICES

- Dry running
- Overcurrent
- Overtemperature of electronic devices
- Inhibition of the system via external contact

### TECHNICAL SPECIFICATIONS

- Supply voltage: inverter 3x380 - 3x500 Vac  $\pm 10\%$  sinusoidal 50/60 Hz
- Inverter output VOLT.: 3x400 Vac  $\pm 10\%$
- Maximum rated power: 11 kW
- Input frequency: 50/60 Hz  $\pm 3\%$
- Output maximum rated power: 20 A
- Degree of protection IP55 (if installed on motors with a degree of protection IP55 or above)
- Ambient temperature from +0°C to +50°C
- Waveform: sinusoidal
- Input filter complying with EMC directive
- Pressure transmitter 0 - 5 Volt - 0 - 10

Bar 0 - 20 Bar depending on the model of pump

- Set-point 2
- Serial interface connectivity RS 485
- Optional contacts 3 (external set-point, alarm, system inhibition)

# CPS3-10

## THREE-PHASE ELECTRONIC FREQUENCY CONVERTER

### VERSIONS AVAILABLE

#### VERTICAL

CPS3-10 MULTINOX VE+ 4

CPS3-10 MULTINOX VE+ 6

CPS3-10 MULTINOX VE+ 8

CPS3-10 PVM 1

CPS3-10 PVM 3

CPS3-10 PVM 5

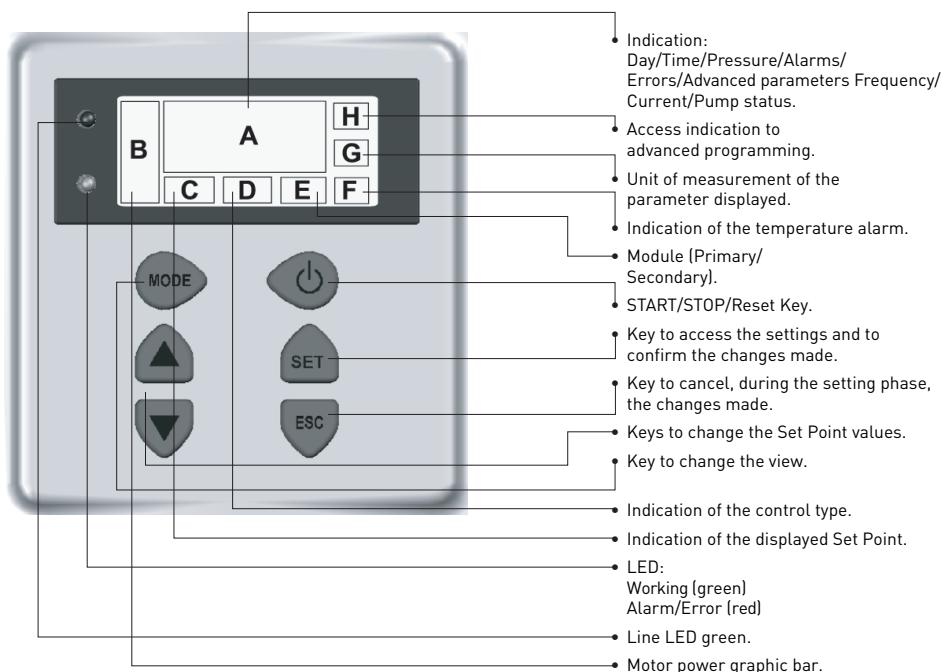
CPS3-10 PVM 10

CPS3-10 PVM 15

CPS3-10 PVM 20

CPS3-10 PVM 32

### CONTROL PANEL

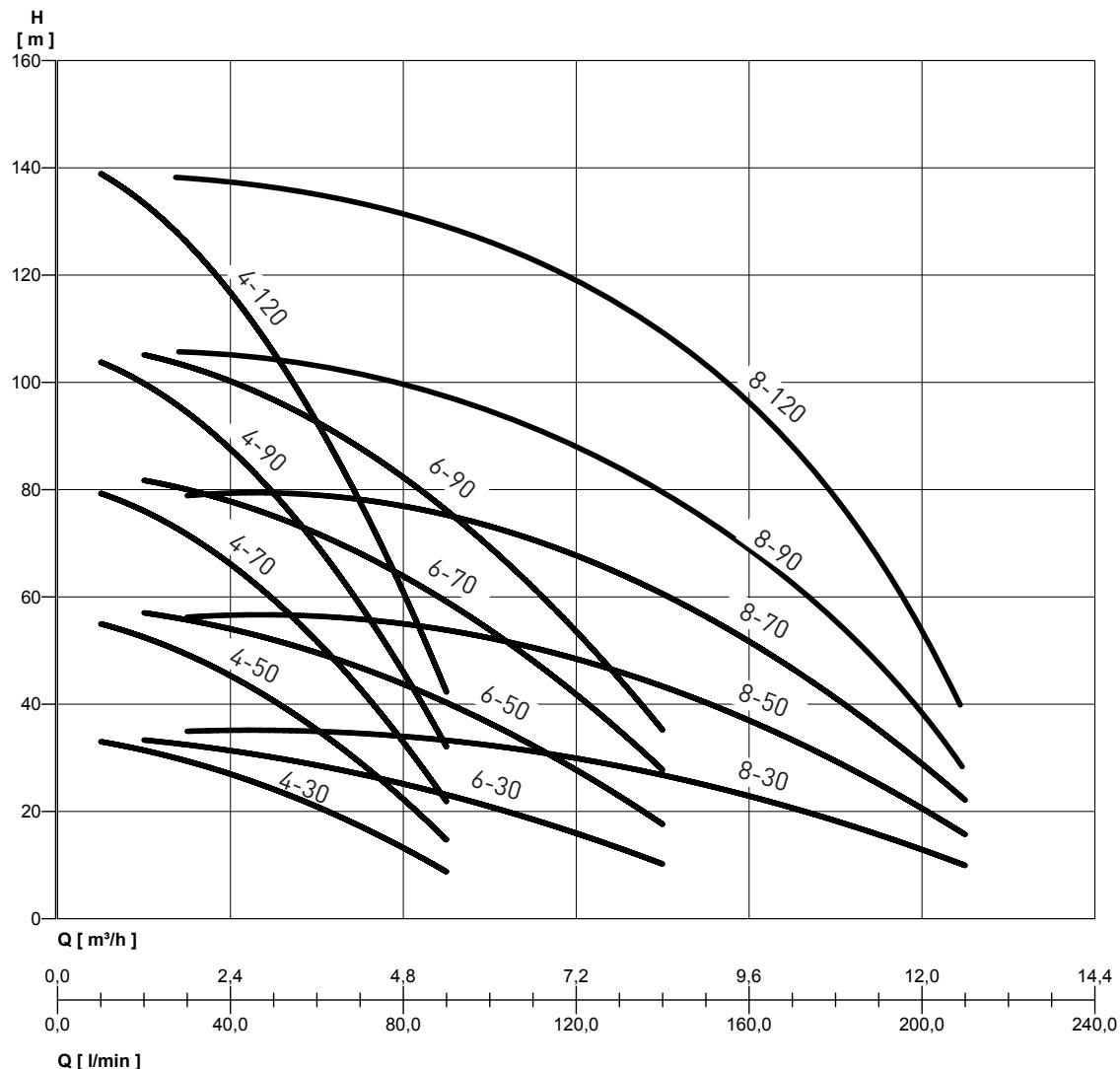


- Backlight display (switches off automatically after a reset time and can be turned on again by pressing any key)

# CPS3-10 MULTINOX VE +

## THREE-PHASE ELECTRONIC FREQUENCY CONVERTER

### HYDRAULIC PERFORMANCE



MEI  $\geq 0.4$  - Reference MEI  $\geq 0.70$  - The information on the reference efficiency is available at the address: [www.europump.org/efficiencycharts](http://www.europump.org/efficiencycharts)  
For the efficiency data see the PUMPS of the series MULTINOX-VE+

MODEL	P2		VOLT. (V)	In (A)	Q $\text{m}^3/\text{h}$	I/min	10	20	30	40	50	60	70	80	90	100	120	140	150	180	210
	HP	kW					0,6	1,2	2	2,4	3	3,6	4,2	5	5,4	6	7,2	8,4	9	11	13
CPS3-10 MULTINOX VE+ 4-30	0,68	0,5	3 ~ 400	2,54			33	31	30	27	24	21	17	13	9						
CPS3-10 MULTINOX VE+ 4-50	1,1	0,84	3 ~ 400	3,90			55	52	50	45	41	35	29	22	15						
CPS3-10 MULTINOX VE+ 4-70	1,6	1,17	3 ~ 400	5,46			79	76	72	67	59	51	43	33	22						
CPS3-10 MULTINOX VE+ 4-90	2	1,5	3 ~ 400	7,22			104	99	95	88	79	69	59	46	32						
CPS3-10 MULTINOX VE+ 4-120	3	2	3 ~ 400	9,42			138	134	127	117	105	92	78	60	43						
CPS3-10 MULTINOX VE+ 6-30	0,9	0,67	3 ~ 400	3,58			34	32	31	30	28	27	26	23	21	16	10				
CPS3-10 MULTINOX VE+ 6-50	1,5	1,1	3 ~ 400	5,26			58	56	53	51	49	47	44	41	37	28	17				
CPS3-10 MULTINOX VE+ 6-70	2	1,5	3 ~ 400	8,21			83	80	77	74	71	68	64	60	55	42	27				
CPS3-10 MULTINOX VE+ 6-90	3	2	3 ~ 400	9,13			107	103	99	95	92	87	83	77	71	54	34				
CPS10 MULTINOX VE+ 8-30	1,35	1	3 ~ 400	2,60			35	35	35	35	35	34	33	32	30	27	25	18	10		
CPS10 MULTINOX VE+ 8-50	2	1,5	3 ~ 400	4,33			57	57	56	56	56	54	53	52	50	45	40	28	16		
CPS10 MULTINOX VE+ 8-70	2,5	1,9	3 ~ 400	6,13			80	80	79	78	78	76	74	72	70	63	56	40	22		
CPS3-10 MULTINOX VE+ 8-90	4	3	3 ~ 400	9,7			104	104	104	103	103	101	98	94	90	82	73	52	29		
CPS3-10 MULTINOX VE+ 8-120	5,5	4	3 ~ 400	12,3			139	139	139	138	138	135	131	126	120	109	98	70	38		

# CPS3-10 MULTINOX VE+

## THREE-PHASE ELECTRONIC FREQUENCY CONVERTER

### PERFORMANCE TABLE

FIG. 1

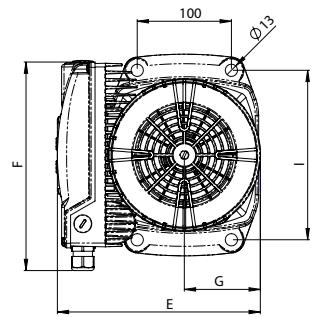
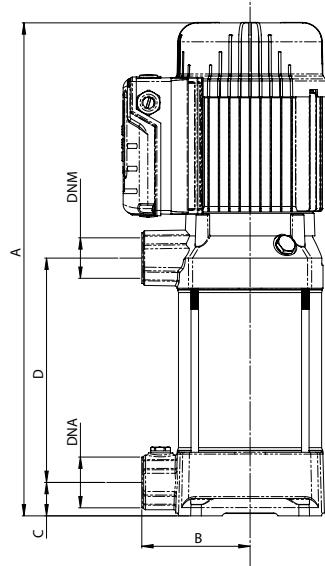
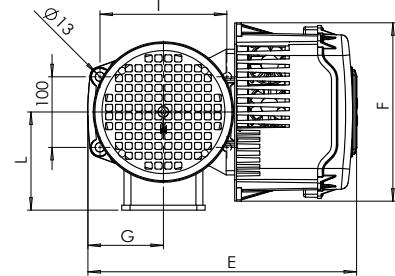
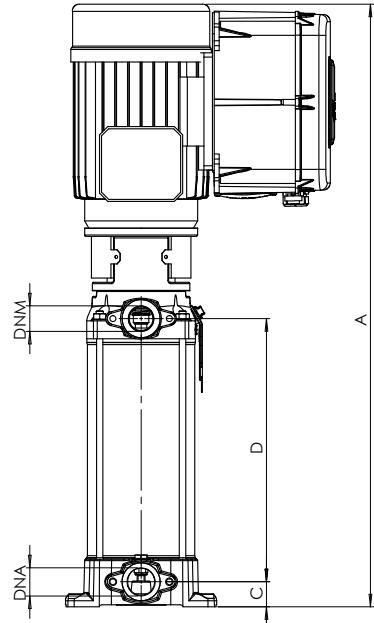
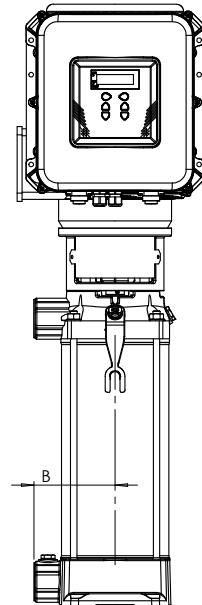


FIG. 2



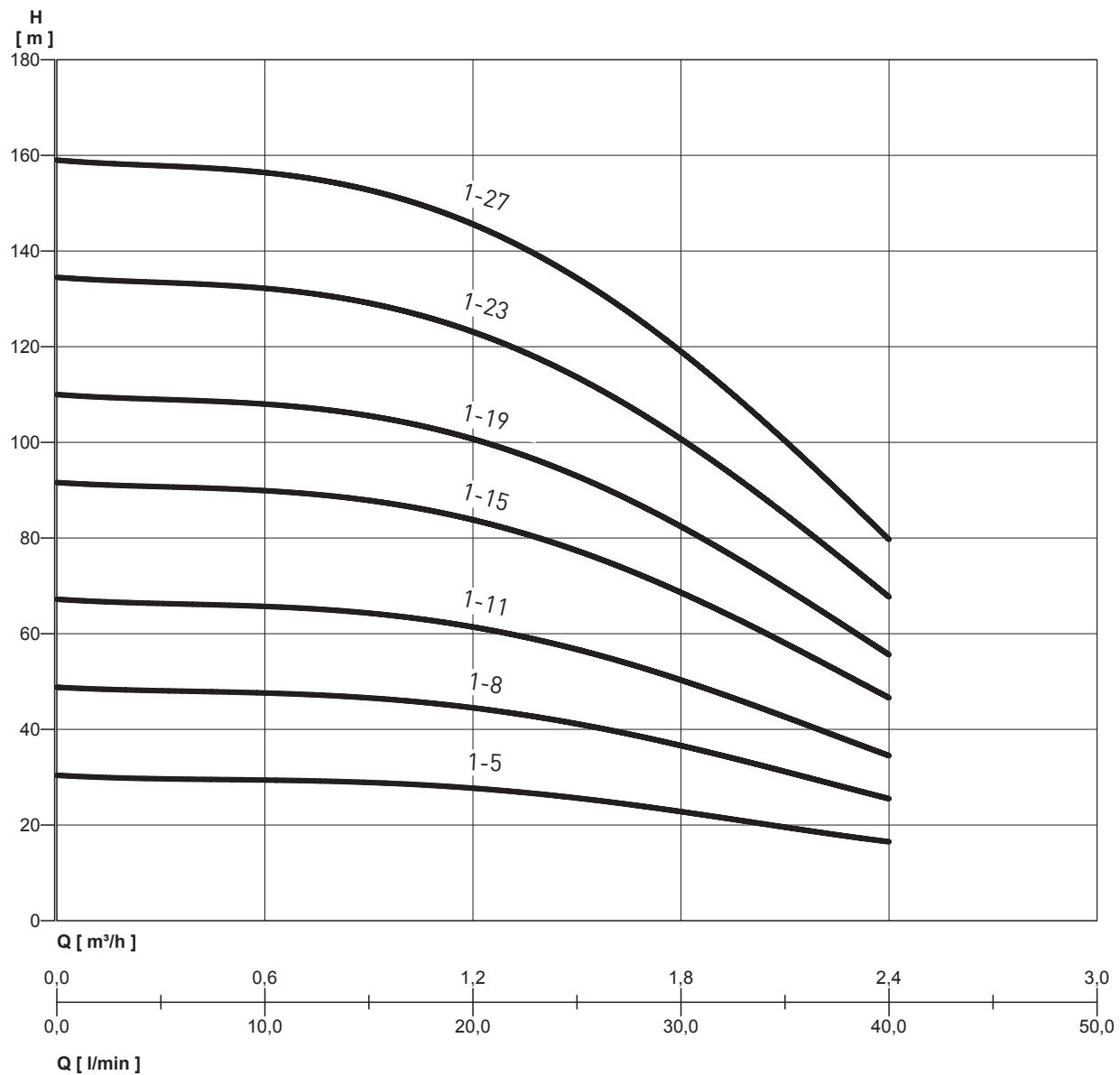
### OVERALL DIMENSIONS AND WEIGHTS

MODEL	FIG.	Dimensions mm.												WEIGHT Kg
		A	B	C	D	E	F	G	I	L	DNA	DNM		
CPS3-10 MULTINOX VE+ 4-30	1	416	115	35	130	213	220	80	180	-	1" 1/4	1" 1/4	21	
CPS3-10 MULTINOX VE+ 4-50	1	470	115	35	184	213	220	80	180	-	1" 1/4	1" 1/4	25	
CPS3-10 MULTINOX VE+ 4-70	1	524	115	35	238	213	220	80	180	-	1" 1/4	1" 1/4	29	
CPS3-10 MULTINOX VE+ 4-90	1	578	115	35	292	213	220	80	180	-	1" 1/4	1" 1/4	30	
CPS3-10 MULTINOX VE+ 4-120	1	660	115	35	373	213	220	80	180	-	1" 1/4	1" 1/4	32	
CPS3-10 MULTINOX VE+ 6-30	1	416	115	35	130	213	220	80	180	-	1" 1/4	1" 1/4	21	
CPS3-10 MULTINOX VE+ 6-50	1	470	115	35	184	213	220	80	180	-	1" 1/4	1" 1/4	25	
CPS3-10 MULTINOX VE+ 6-70	1	524	115	35	238	213	220	80	180	-	1" 1/4	1" 1/4	29	
CPS3-10 MULTINOX VE+ 6-90	1	578	115	35	292	213	220	80	180	-	1" 1/4	1" 1/4	30	
CPS3-10 MULTINOX VE+ 8-30	1	416	115	35	130	213	220	80	180	-	1" 1/4	1" 1/4	21	
CPS3-10 MULTINOX VE+ 8-50	1	470	115	35	184	213	220	80	180	-	1" 1/4	1" 1/4	25	
CPS3-10 MULTINOX VE+ 8-70	1	524	115	35	373	213	220	80	180	-	1" 1/4	1" 1/4	41	
CPS3-10 MULTINOX VE+ 8-90	2	730	115	35	292	370	253	105	180	140	1" 1/4	1" 1/4	42	
CPS3-10 MULTINOX VE+ 8-120	2	855	115	35	373	380	253	105	180	145	1" 1/4	1" 1/4	45	

# CPS 3-10 PVM

THREE-PHASE ELECTRONIC FREQUENCY CONVERTER

## HYDRAULIC PERFORMANCE



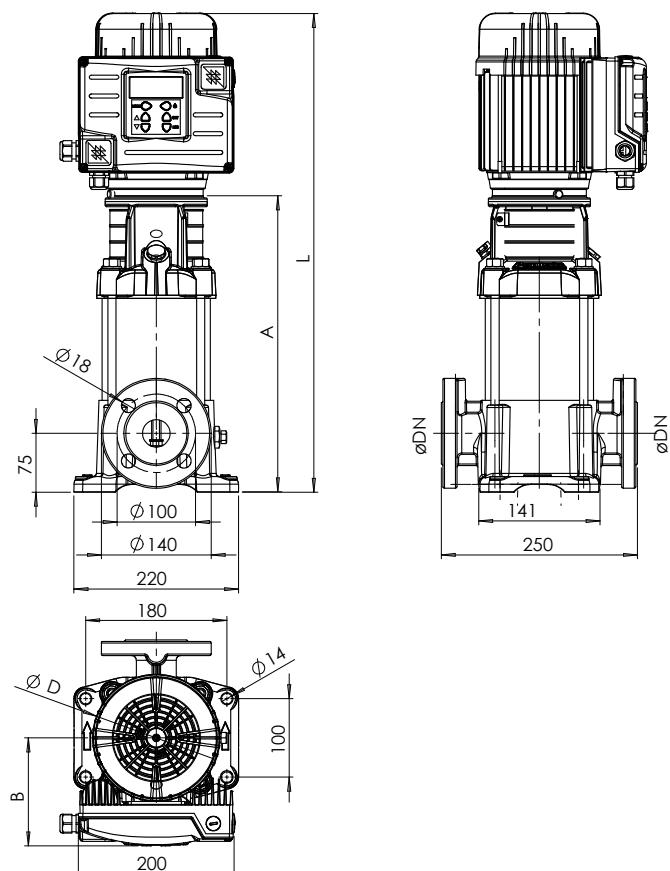
# CPS 3-10 PVM

## THREE-PHASE ELECTRONIC FREQUENCY CONVERTER

### PERFORMANCE TABLE

MODEL	P2		VOLT. (V)	In (A)	0	I/min	0	10	20	30	40
	HP	kW					0	0,6	1,2	1,8	2,4
CPS3-10 PVM 1-5 F	0,5	0,37	3 ~ 400	1,5			30,4	29,4	22,7	22,8	16,5
CPS3-10 PVM 1-8 F	0,75	0,55	3 ~ 400	2,3			48,8	47,6	44,5	36,6	25,5
CPS3-10 PVM 1-11 F	0,75	0,55	3 ~ 400	3,2			67,2	65,7	61,4	50,3	34,5
CPS3-10 PVM 1-15 F	1	0,75	3 ~ 400	4,4			91,6	89,9	83,8	68,6	46,6
CPS3-10 PVM 1-19 F	1,5	1,1	3 ~ 400	5,5			110	108	100,7	82,4	55,6
CPS3-10 PVM 1-23 F	1,5	1,1	3 ~ 400	6,7			134,5	132,2	123,1	100,7	67,7
CPS3-10 PVM 1-27 F	2	1,5	3 ~ 400	7,8			159	156,4	145,6	119	79,7

m.c.w.



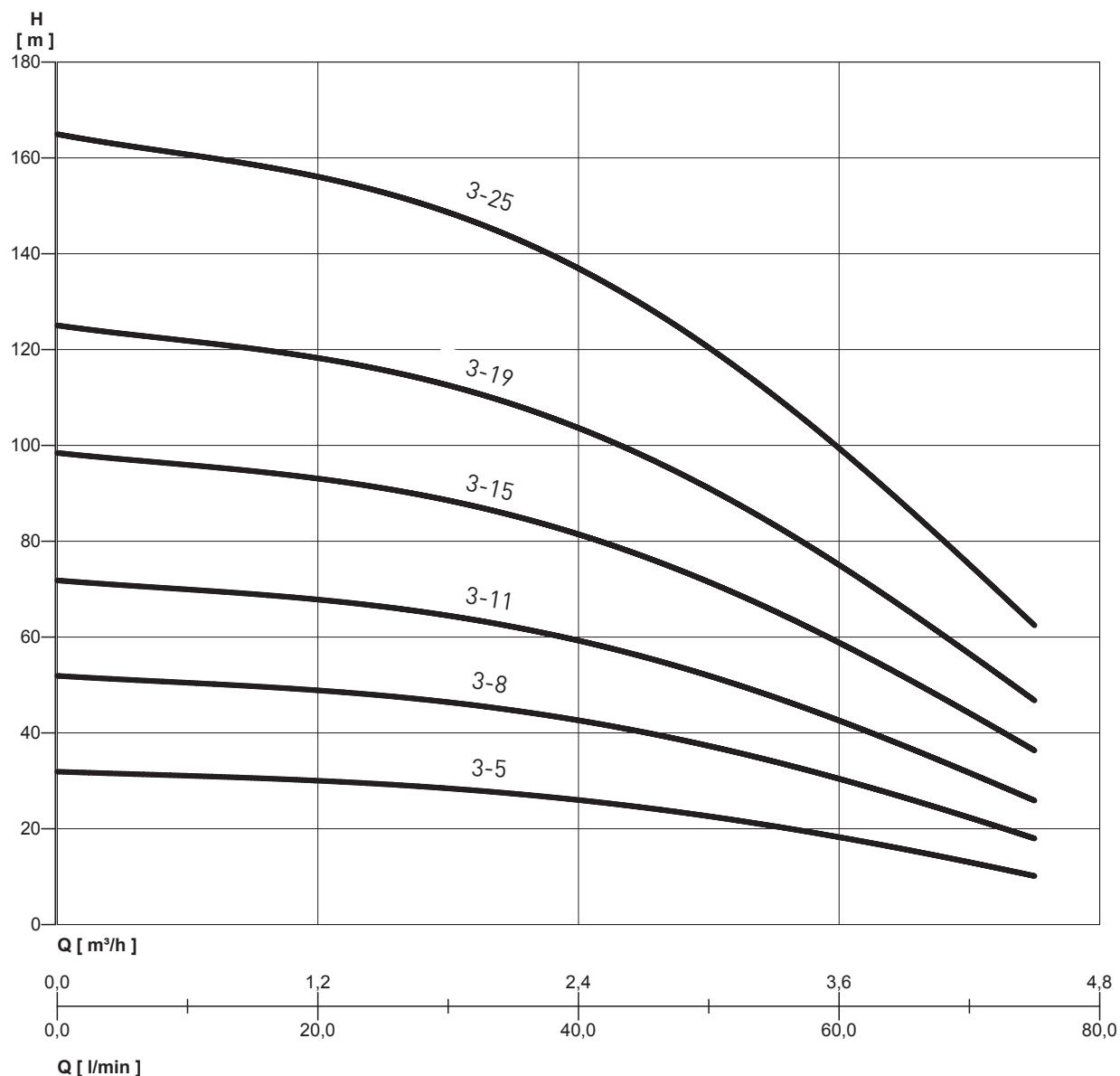
### OVERALL DIMENSIONS AND WEIGHTS

MODEL	Dimensions mm.								WEIGHT Kg
	A	B	C	D	E	F	G	DN	
CPS3-10 PVM 1-5 F	510	250	75	135	232	100	180	DN 25/DN 32	29
CPS3-10 PVM 1-8 F	564	250	75	135	232	100	180	DN 25/DN 32	31
CPS3-10 PVM 1-11 F	618	250	75	135	232	100	180	DN 25/DN 32	32
CPS3-10 PVM 1-15 F	736	250	75	135	232	100	180	DN 25/DN 32	36
CPS3-10 PVM 1-19 F	808	250	75	135	232	100	180	DN 25/DN 32	38
CPS3-10 PVM 1-23 F	880	250	75	135	232	100	180	DN 25/DN 32	40
CPS3-10 PVM 1-27 F	1024	250	75	135	232	100	180	DN 25/DN 32	50

# CPS 3-10 PVM

THREE-PHASE ELECTRONIC FREQUENCY CONVERTER

## HYDRAULIC PERFORMANCE



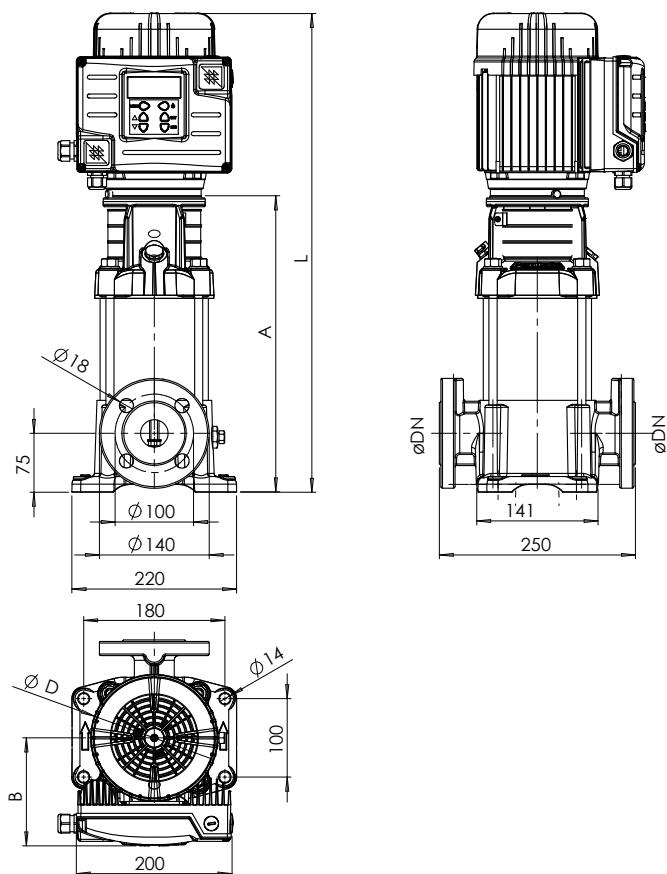
# CPS 3-10 PVM

## THREE-PHASE ELECTRONIC FREQUENCY CONVERTER

### PERFORMANCE TABLE

MODEL	P2		VOLT. (V)	In (A)	0	I/min	0	20	40	60	75
	HP	kW									
CPS3-10 PVM 3-5 F	0,5	0,37	3 ~ 400	0,9			31,9	30	26,2	18	10
CPS3-10 PVM 3-8 F	1	0,75	3 ~ 400	1,45			51,9	48,9	42,9	30,1	17,8
CPS3-10 PVM 3-11 F	1	0,75	3 ~ 400	2			71,8	67,9	59,6	42,1	25,7
CPS3-10 PVM 3-15 F	1,5	1,1	3 ~ 400	2,7			98,4	93,2	81,9	58,2	36,1
CPS3-10 PVM 3-19 F	2	1,5	3 ~ 400	3,4			125	118,4	104,2	74,3	46,5
CPS3-10 PVM 3-25 F	3	2,2	3 ~ 400	4,5			164,9	156,3	137,6	98,4	62,1

m.c.w.



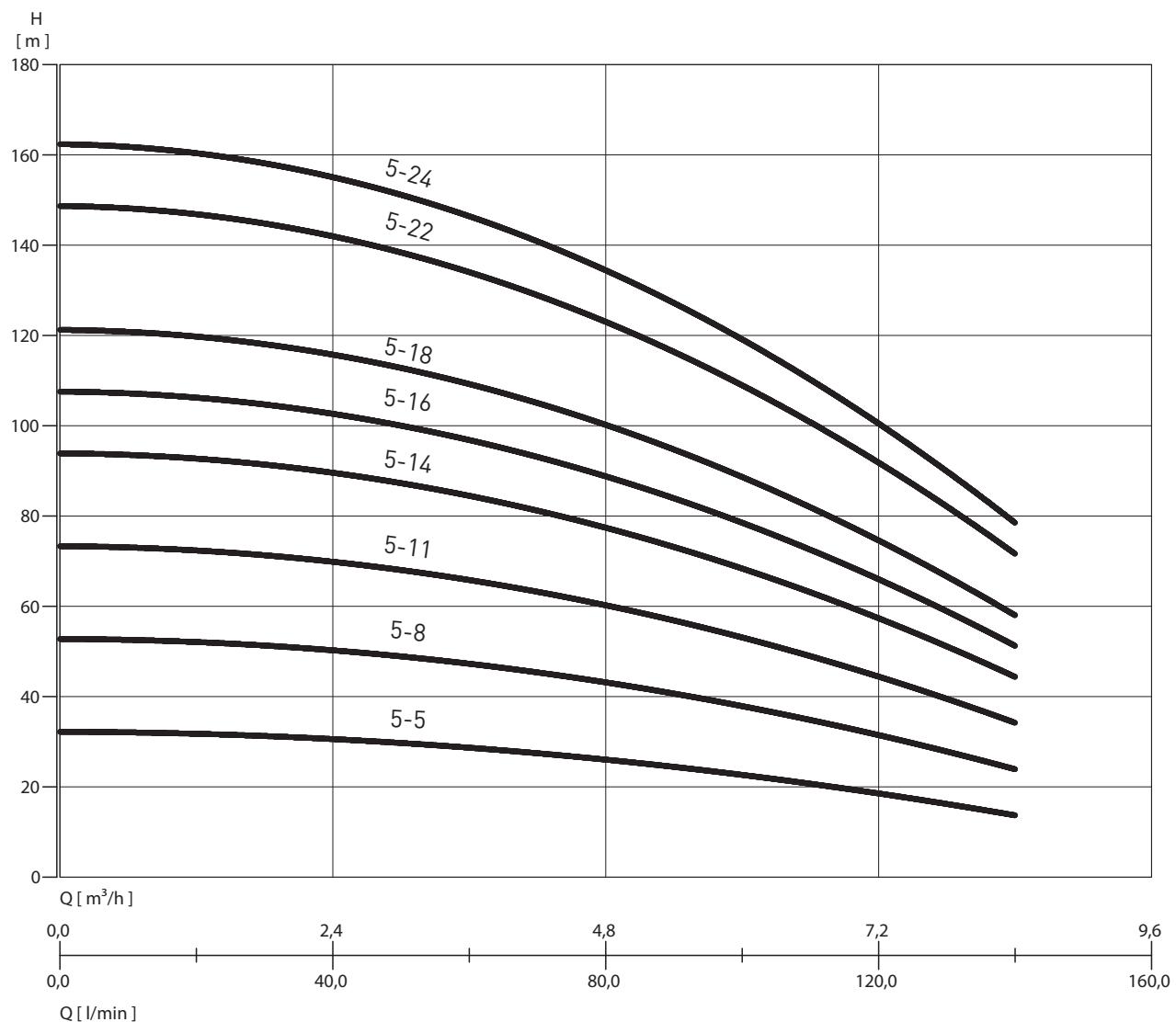
### OVERALL DIMENSIONS AND WEIGHTS

MODEL	Dimensions mm.								WEIGHT Kg
	A	B	C	D	E	F	G	DN	
CPS3-10 PVM 3-5 F	510	510	510	510	510	510	510	DN 25/DN 32	29
CPS3-10 PVM 3-8 F	610	610	610	610	610	610	610	DN 25/DN 32	33
CPS3-10 PVM 3-11 F	664	664	664	664	664	664	664	DN 25/DN 32	35
CPS3-10 PVM 3-15 F	736	736	736	736	736	736	736	DN 25/DN 32	37
CPS3-10 PVM 3-19 F	880	880	880	880	880	880	880	DN 25/DN 32	47
CPS3-10 PVM 3-25 F	988	988	988	988	988	988	988	DN 25/DN 32	52

# CPS 3-10 PVM

THREE-PHASE ELECTRONIC FREQUENCY CONVERTER

## HYDRAULIC PERFORMANCE



## PERFORMANCE TABLE

MODEL	P2		VOLT.(V)	In(A)	0	I/min	0	50	75	100	125	140
	HP	kW										
CPS3-10 PVM 5-5 F	1	0,75	3 ~ 400	1,7			32,3	29,4	26,8	22,9	17,5	13,5
CPS3-10 PVM 5-8 F	1,5	1,1	3 ~ 400	2,7			52,9	48,5	44,3	38,2	29,9	23,6
CPS3-10 PVM 5-11 F	3	2,2	3 ~ 400	3,7			73,5	67,5	61,8	53,5	42,3	33,8
CPS3-10 PVM 5-14 F	3	2,2	3 ~ 400	4,8			94,1	86,6	79,4	68,9	54,6	43,9
CPS3-10 PVM 5-16 F	3	2,2	3 ~ 400	5,4			107,8	99,3	91	79,1	62,9	50,7
CPS3-10 PVM 5-18 F	4	3	3 ~ 400	6,1			121,5	112	102,7	89,3	71,1	57,4
CPS3-10 PVM 5-22 F	5,5	4	3 ~ 400	7,5			149	137,4	126,1	109,7	87,6	70,9
CPS3-10 PVM 5-24 F	5,5	4	3 ~ 400	8,2			162,7	150,1	137,8	119,9	95,9	77,7

m.c.w.

# CPS 3-10 PVM

## THREE-PHASE ELECTRONIC FREQUENCY CONVERTER

FIG. 1

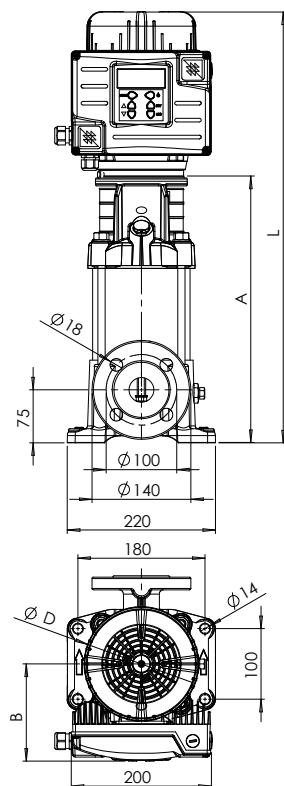
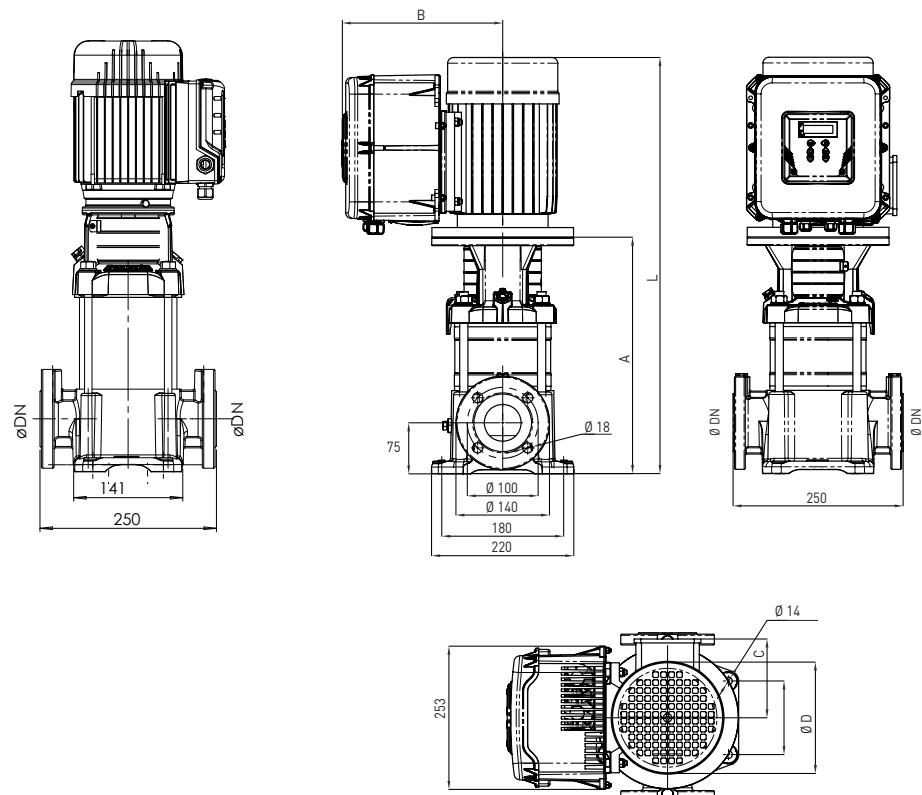


FIG. 2



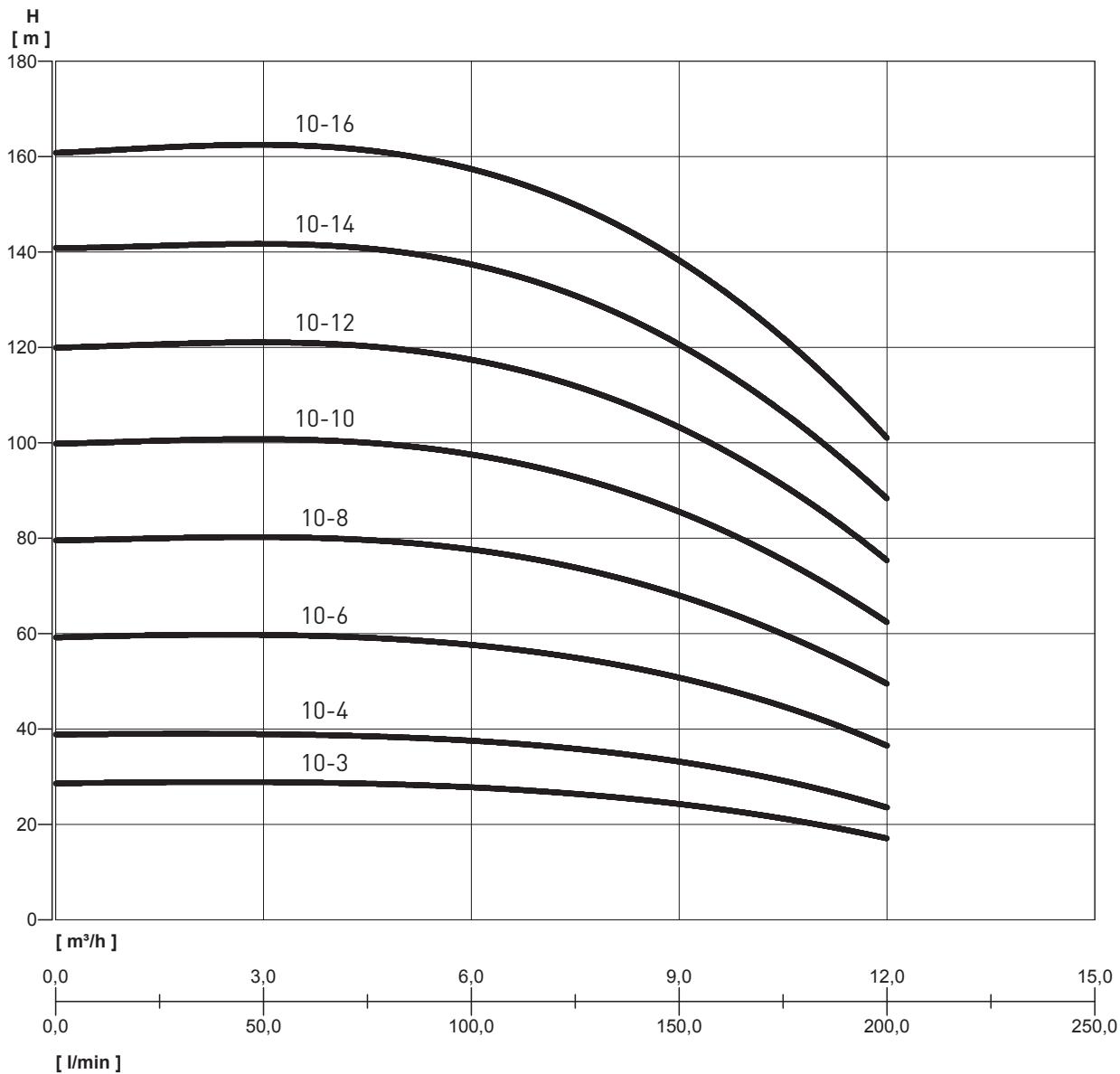
## OVERALL DIMENSIONS AND WEIGHTS

MODEL	Fig.	Dimensions mm.						WEIGHT Kg
		A	B	C	D	L	DN	
CPS3-10 PVM 5-5 F	1	366	132	-	141	601	DN 32	32
CPS3-10 PVM 5-8 F	1	447	132	-	141	682	DN 32	35
CPS3-10 PVM 5-11 F	1	544	155	-	180	811	DN 32	48
CPS3-10 PVM 5-14 F	1	625	155	-	180	892	DN 32	50
CPS3-10 PVM 5-16 F	1	679	155	-	180	946	DN 32	51
CPS3-10 PVM 5-18 F	2	737	274	145	196	1058	DN 32	59
CPS3-10 PVM 5-22 F	2	845	286	161	225	1173	DN 32	65
CPS3-10 PVM 5-24 F	2	899	286	161	225	1227	DN 32	66

# CPS 3-10 PVM

THREE-PHASE ELECTRONIC FREQUENCY CONVERTER

## HYDRAULIC PERFORMANCE



## PERFORMANCE TABLE

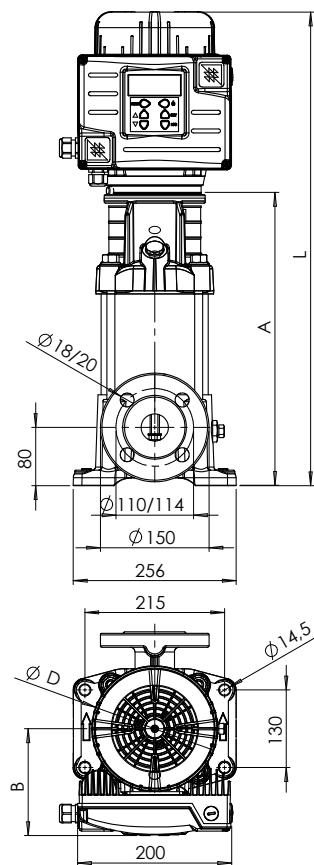
MODEL	P2		VOLT.(V)	In (A)	0	l/min	0	25	50	75	100	125	150	175	200
	HP	kW					$\text{m}^3/\text{h}$	0	1,5	3	4,5	6	7,5	9	10,5
CPS3-10 PVM 10-3 F	1,5	1,1	3 ~ 400	2,4			28,6	28,8	29	28,4	27,8	26,4	24,4	21,1	17,1
CPS3-10 PVM 10-4 F	2	1,5	3 ~ 400	3,2			38,8	39	39,2	38	37,7	36	33,2	29	23,6
CPS3-10 PVM 10-6 F	3	2,2	3 ~ 400	4,8			59,2	59,6	59,8	59,2	57,5	55	50,8	44,7	36,5
CPS3-10 PVM 10-8	4	3	3 ~ 400	6,4			79,6	79,8	80,3	79,9	77,4	73,6	68,4	59,7	49,5
CPS3-10 PVM 10-10	5,5	4	3 ~ 400	8			99,9	100,1	101	100,3	97,2	92,6	86	75,2	62,4
CPS3-10 PVM 10-12	5,5	4	3 ~ 400	9,6			120	120,5	121	120,8	117	111,5	104	90,7	75,4
CPS3-10 PVM 10-14	7,5	5,5	3 ~ 400	11			141	140,8	142	141,2	137	130,4	121,2	106,2	88,3
CPS3-10 PVM 10-16	7,5	5,5	3 ~ 400	13			161	161,2	163	161,7	157	149,3	139	121,7	101

m.c.w.

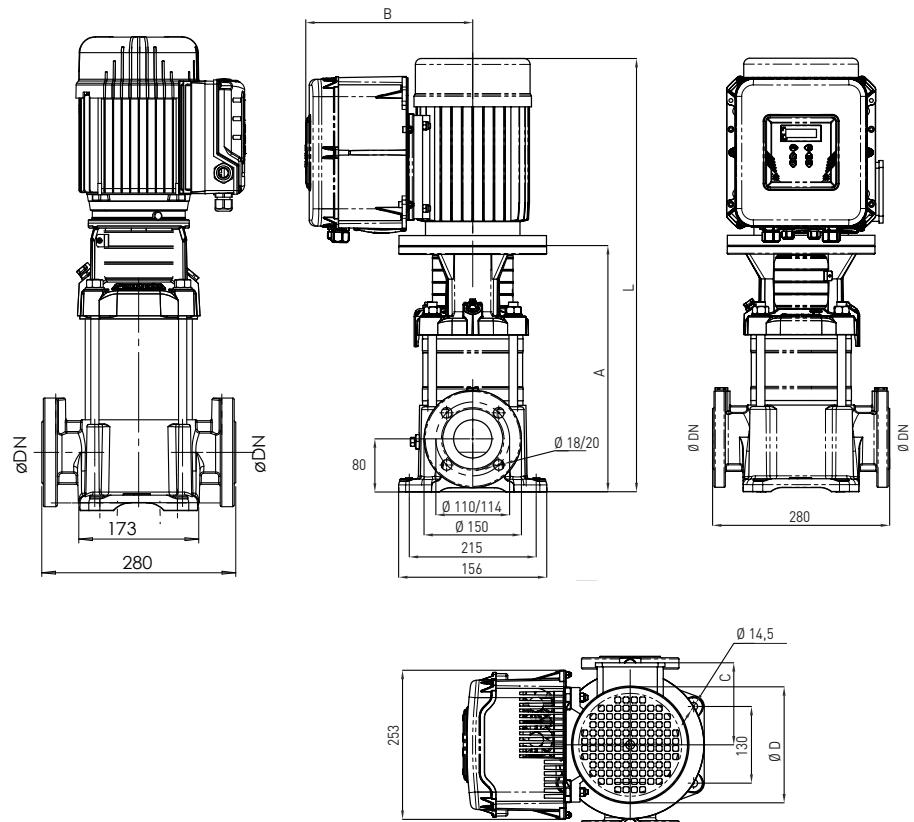
# CPS 3-10 PVM

## THREE-PHASE ELECTRONIC FREQUENCY CONVERTER

**FIG. 1**



**FIG. 2**



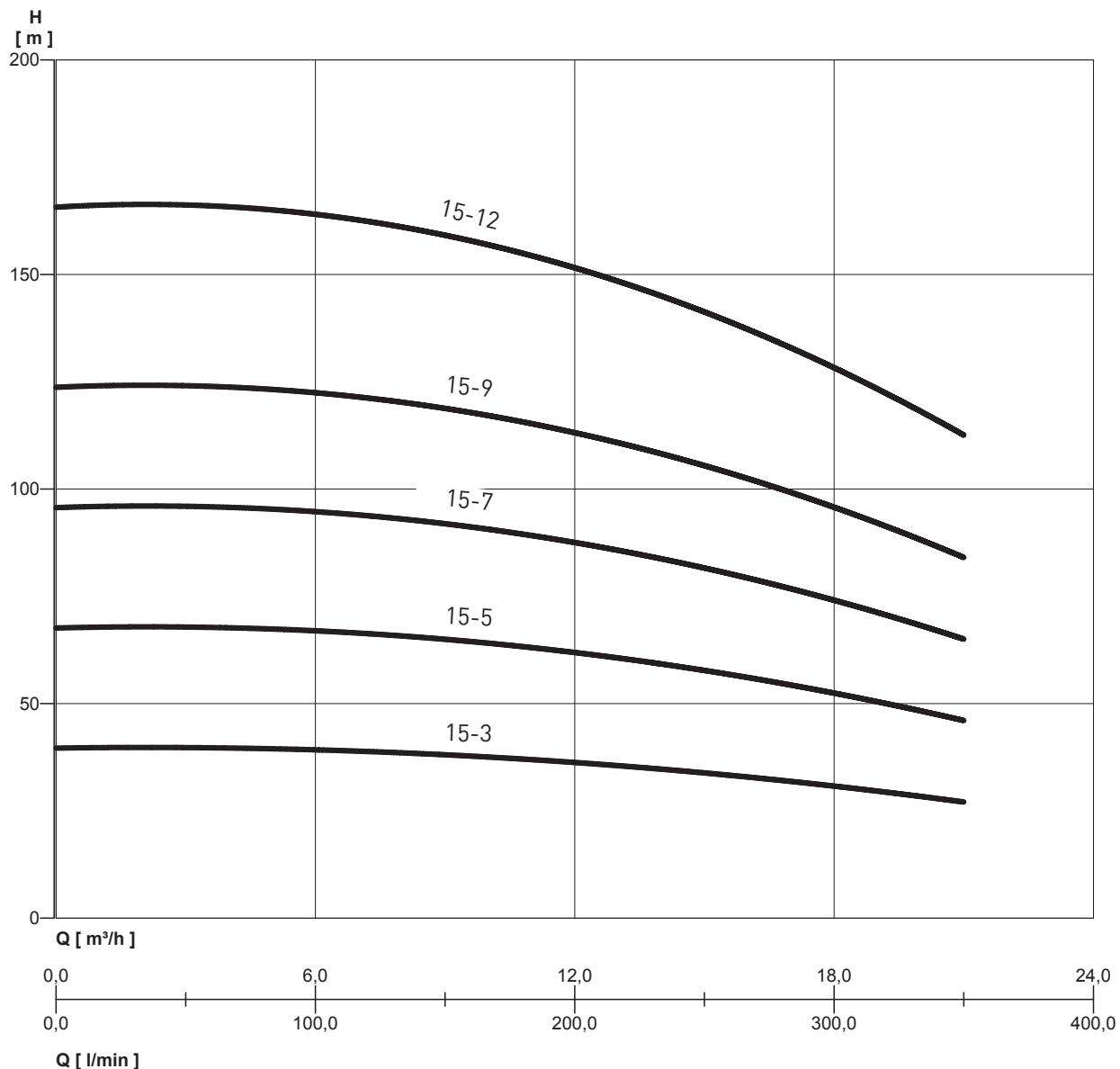
## OVERALL DIMENSIONS AND WEIGHTS

MODEL	Fig.	Dimensions mm.						WEIGHT Kg
		A	B	C	D	L	DN	
CPS3-10 PVM 10-3 F	1	377	132	-	141	612	DN 40	45
CPS3-10 PVM 10-4 F	1	423	155	-	180	690	DN 40	55
CPS3-10 PVM 10-6 F	1	483	155	-	180	750	DN 40	60
CPS3-10 PVM 10-8 F	2	548	274	145	196	869	DN 40	70
CPS3-10 PVM 10-10 F	2	608	286	161	225	936	DN 40	75
CPS3-10 PVM 10-12 F	2	668	286	161	225	996	DN 40	77
CPS3-10 PVM 10-14 F	2	760	306	195	248	1125	DN 40	109
CPS3-10 PVM 10-16 F	2	820	306	195	248	1185	DN 40	111

# CPS 3-10 PVM

## THREE-PHASE ELECTRONIC FREQUENCY CONVERTER

### HYDRAULIC PERFORMANCE

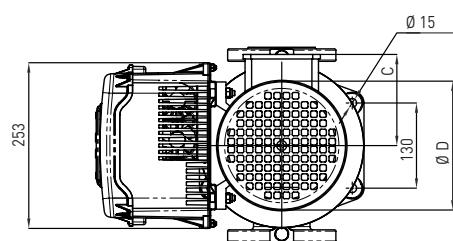
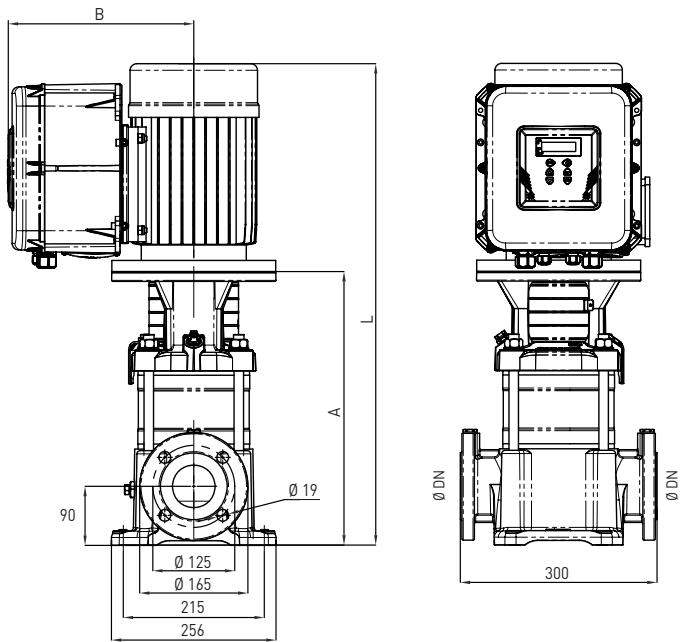


### PERFORMANCE TABLE

MODEL	P2		VOLT.(V)	In(A)	0	I/min	0	50	100	150	200	250	300	350
	HP	kW					$\text{m}^3/\text{h}$	0	3	6	9	12	15	18
CPS3-10 PVM 15-3	4	3	3 ~ 400	5,1			39,8	39,6	39,2	37,8	36,3	34,1	31	26,8
CPS3-10 PVM 15-5	5,5	4	3 ~ 400	8,5			68	67,4	66,9	64,7	62	58,1	52,7	45,7
CPS3-10 PVM 15-7	7,5	5,5	3 ~ 400	12			96,2	95,3	94,7	91,6	87,7	82	74,4	64,6
CPS3-10 PVM 15-9	10	7,5	3 ~ 400	15			124	123,2	122,4	118	113	106	96	83,6
CPS3-10 PVM 15-12	15	11	3 ~ 400	20			167	165	163,9	159	152	142	129	112

# CPS 3-10 PVM

## THREE-PHASE ELECTRONIC FREQUENCY CONVERTER



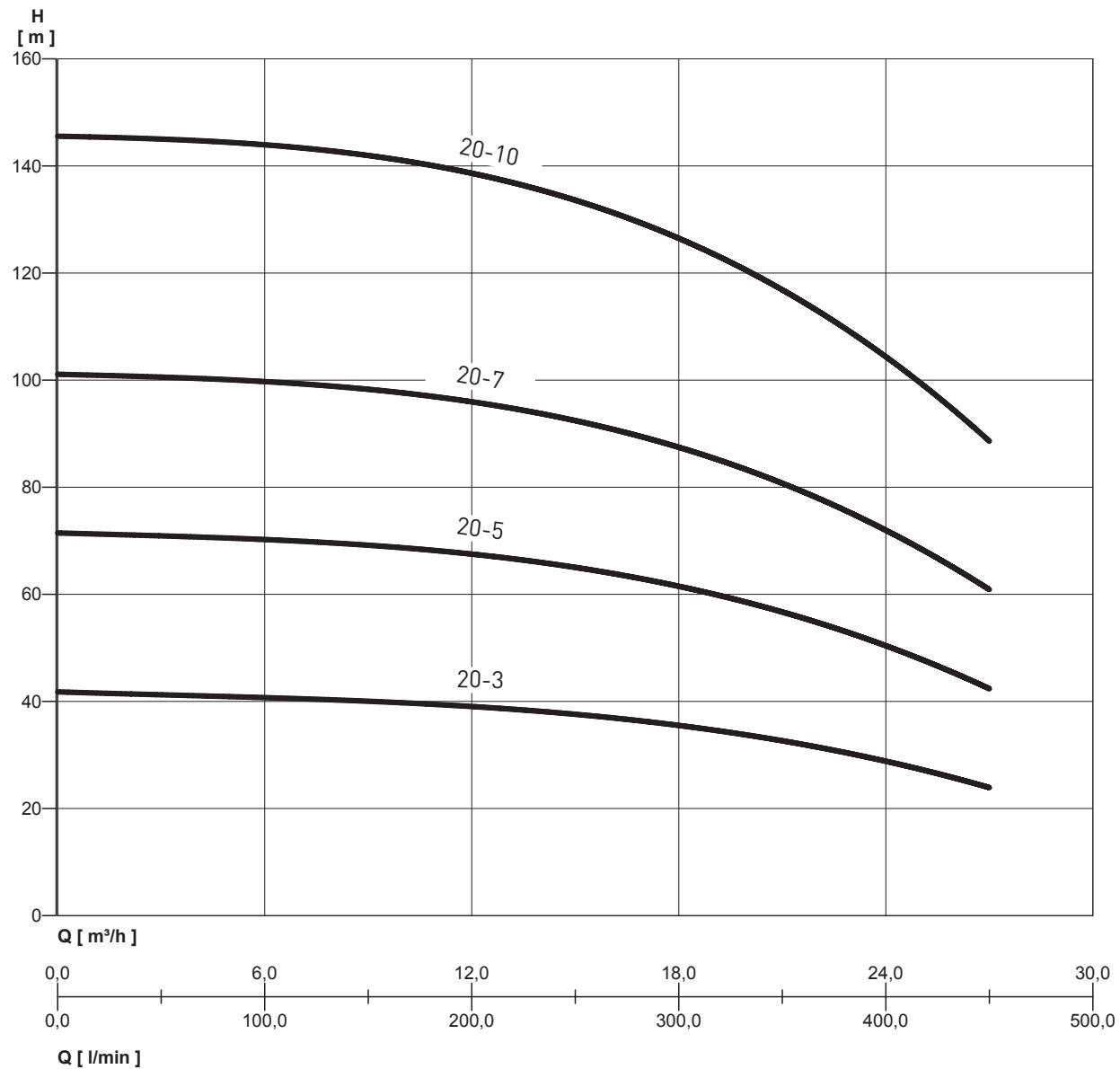
### OVERALL DIMENSIONS AND WEIGHTS

MODEL	Dimensions mm.						WEIGHT Kg
	A	B	C	D	L	DN	
CPS3-10 PVM 15-3	465	274	145	196	786	DN 50	70
CPS3-10 PVM 15-5	555	286	161	225	883	DN 50	76
CPS3-10 PVM 15-7	677	306	195	248	1042	DN 50	109
CPS3-10 PVM 15-9	767	306	195	248	1152	DN 50	118
CPS3-10 PVM 15-12	979	334	238	317	1477	DN 50	158

# CPS 3-10 PVM

## THREE-PHASE ELECTRONIC FREQUENCY CONVERTER

### HYDRAULIC PERFORMANCE

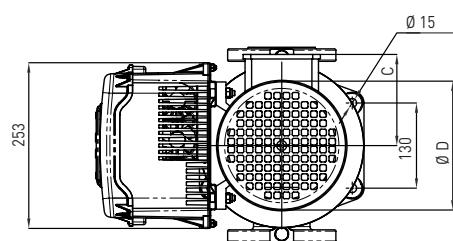
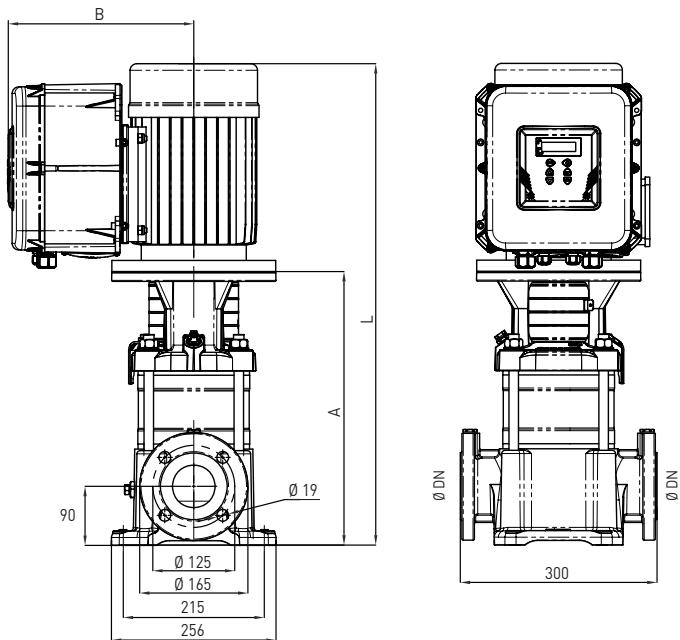


### PERFORMANCE TABLE

MODEL	P2		VOLT. (V)	In (A)	0	l/min										
	HP	kW					0	3	6	9	12	15	18	21	24	27
m³/h																
CPS3-10 PVM 20-3	5,5	4	3 ~ 400	8,5			41,8	41,2	40,8	39,9	39,1	37,5	35,6	33	29,3	24,1
CPS3-10 PVM 20-5	7,5	5,5	3 ~ 400	11,9			71,6	70,7	70,3	69	67,7	64,9	61,7	57,2	52,4	42,8
CPS3-10 PVM 20-7	10	7,5	3 ~ 400	15,3			101	100,3	99,7	98	96,3	92,4	87,7	81,3	74,6	61,5
CPS3-10 PVM 20-10	15	11	3 ~ 400	20,4			146	144,6	144	141,6	139	133,6	127	117,6	106	89,5

# CPS 3-10 PVM

## THREE-PHASE ELECTRONIC FREQUENCY CONVERTER



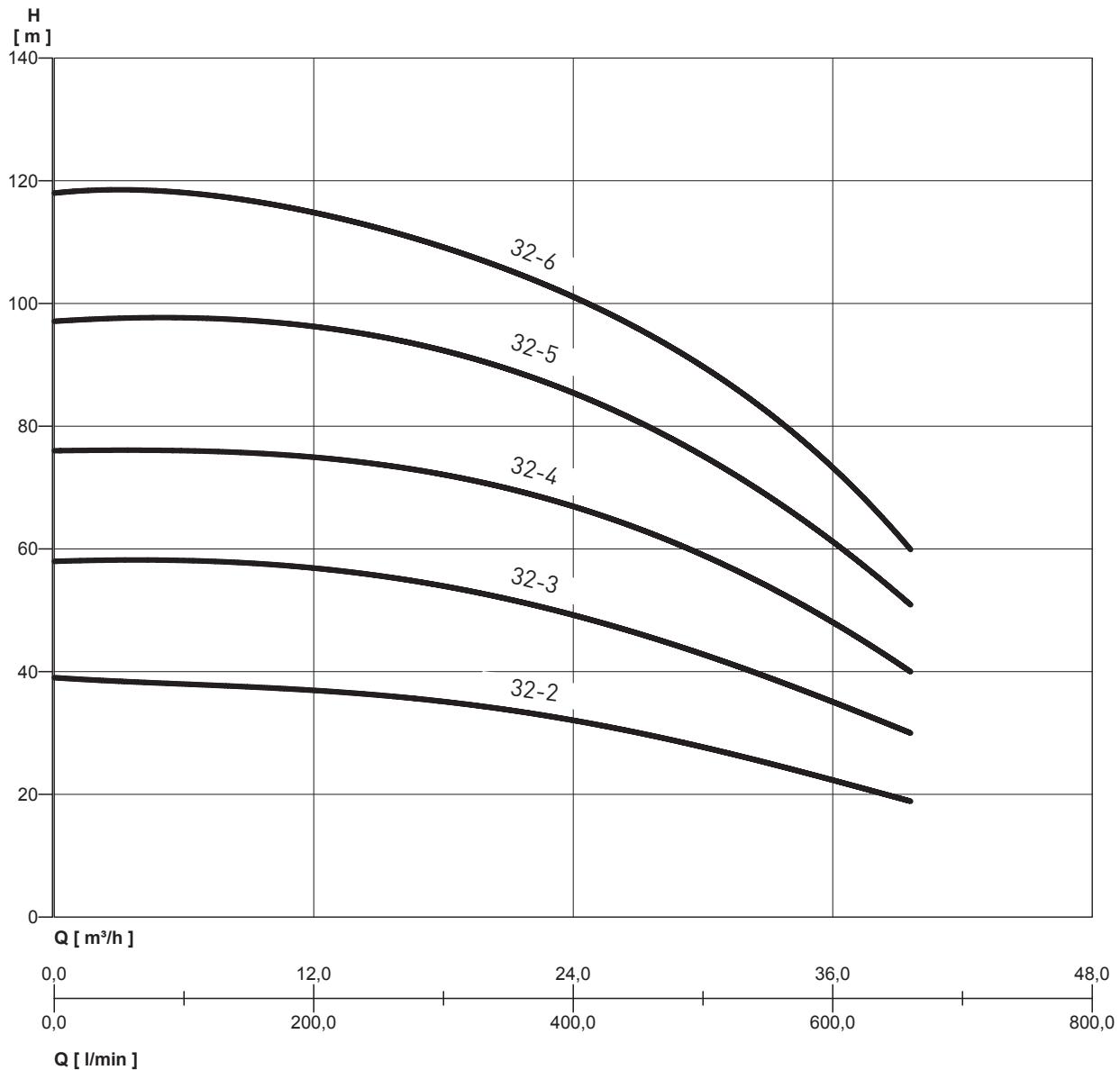
### OVERALL DIMENSIONS AND WEIGHTS

MODEL	Dimensions mm.						WEIGHT Kg
	A	B	C	D	L	DN	
CPS3-10 PVM 20-3	465	286	161	225	793	DN 50	73
CPS3-10 PVM 20-5	587	306	195	248	952	DN 50	106
CPS3-10 PVM 20-7	677	306	195	248	1062	DN 50	115
CPS3-10 PVM 20-10	889	334	238	317	1387	DN 50	155

# CPS 3-10 PVM

THREE-PHASE ELECTRONIC FREQUENCY CONVERTER

## HYDRAULIC PERFORMANCE

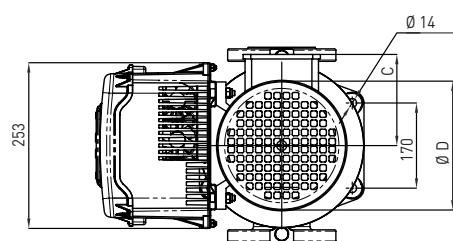
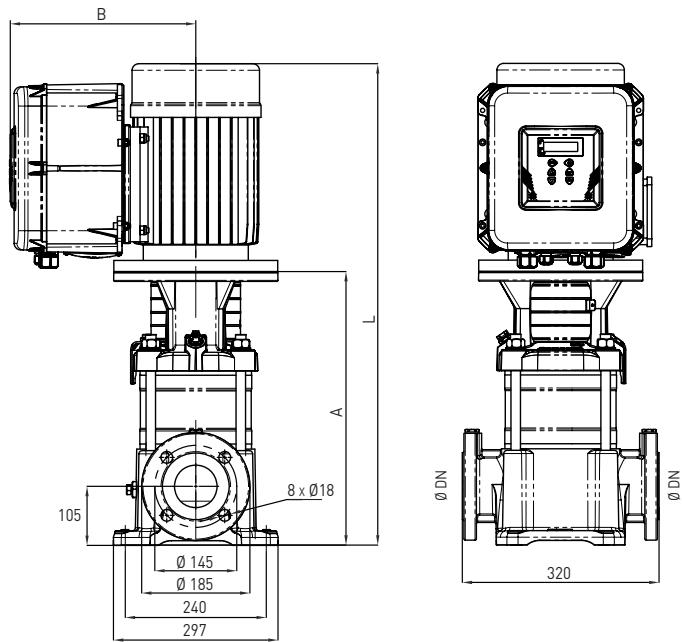


## PERFORMANCE TABLE

MODEL	P2		VOLT.(V)	In(A)	0	I/min	0	100	200	300	400	500	600	660
	HP	kW												
CPS3-10 PVM 32-2	5,5	4	3 ~ 400	7,1			39,2	38	37,7	36,2	33,8	29,8	24,2	19
CPS3-10 PVM 32-3	7,5	5,5	3 ~ 400	10,7			58,7	58	57,4	55	51,5	45,5	37,2	30
CPS3-10 PVM 32-4	10	7,5	3 ~ 400	14,3			78,2	76	77,1	73,9	69,2	61,2	50,3	40
CPS3-10 PVM 32-5	15	11	3 ~ 400	17,8			97,8	98	96,8	92,7	86,8	76,9	63,3	51
CPS3-10 PVM 32-6	15	11	3 ~ 400	21,4			117	118	117	112	105	92,6	76,3	60

# CPS 3-10 PVM

## THREE-PHASE ELECTRONIC FREQUENCY CONVERTER



## OVERALL DIMENSIONS AND WEIGHTS

MODEL	Dimensions mm.						WEIGHT Kg
	A	B	C	D	L	DN	
CPS3-10 PVM 32-2	574	286	161	225	902	DN 65	93
CPS3-10 PVM 32-3	644	306	195	248	1009	DN 65	115
CPS3-10 PVM 32-4	714	306	195	248	1099	DN 65	125
CPS3-10 PVM 32-5	894	334	238	317	1392	DN 65	168
CPS3-10 PVM 32-6	964	334	238	317	1462	DN 65	171