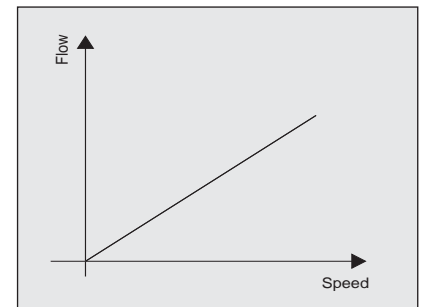


1 Why speed control ?

Volumetric pumps (progressive-cavity ; peristaltic...) have a flow rate directly proportional to the drive speed.

Speed variation allows to :

- Control or adjust a rhythm of production
- Synchronise and optimise different sections of a process.
- Obtain different speeds of : Filling, Fluid transfer



2 How to control the flow ?

2 different ways exist :

Variable speed gear unit : belts / pulleys ...

Electronic variation : Frequency converters

- Separated, away from the motor.
- Integrated, directly on the motor.

3 How to choose a technology ?

Economical and technical criteria

	Variable speed gear unit	Separated frequency converter	Integrated frequency converter
Manual control	Yes	Yes (IP55 versions)	Yes
Control from process	option	Yes	Yes
220V 1-ph	No	Yes ($P \leq 2.2\text{kW}$)	Yes ($P \leq 1.5\text{kW}$)
220V 3-ph	Yes	Yes ($3\text{kW} \leq P \leq 7.5\text{kW}$)	Yes ($P \leq 2.2\text{kW}$)
380V 3-ph	Yes	Yes	Yes ($P \leq 4\text{kW}$)
Feed back information	No	Yes	Option
Installation	Very simple	Depending on customer knowledge	Simple
Adjustment	Very simple	Depending on customer knowledge	Simple
Debit expanse	1 to 5	1 to 4 without external fan unit or 1 to 8 with external fan unit	1 to 6
Sale Price	**	*	***
Maintenance	*	***	**
Production Cost	*	***	**

*** : Excellent

** : Good

* : Medium

4 Separated frequency converter

PCM proposes 2 versions

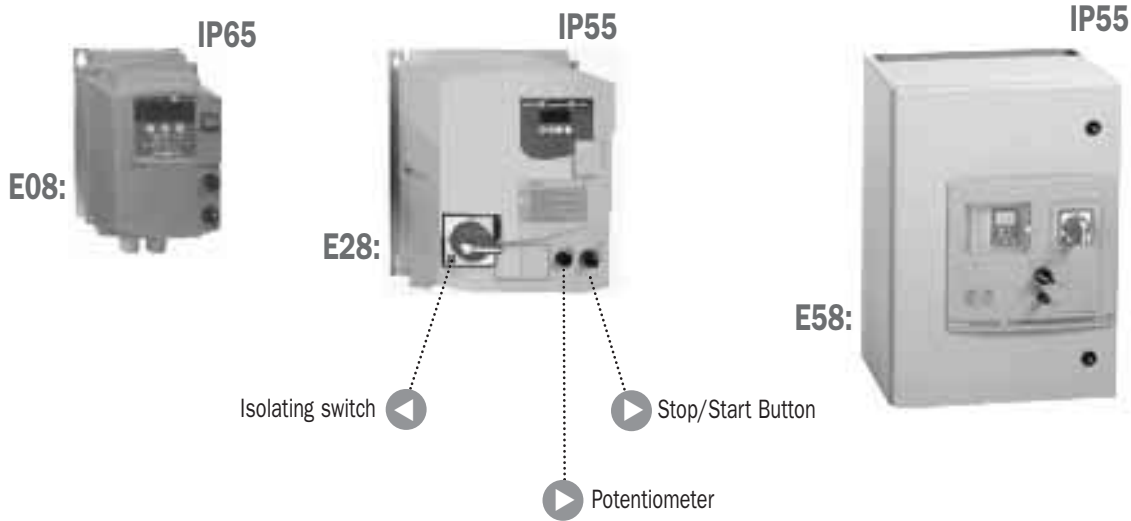
4.1 SXX 'Standard'

"Standard" converters with faint protection indices (IP20 – IP21) are to be integrated in an electrical box (from PCM or Customer)



4.2 EXX 'Equipped'

"Plug and start" frequency converters with high IP (IP55-IP65) are ready for use.



POWER kW	Intensity (A)	
	Type	(A)
0,18	S08	2,7
	E08	2,7
0,37	S08	4,5
	E08	4,5
	S28	7,3
	E28	7,3
0,75	S08	8,2
	E08	8,2
	S28	9,8
	E28	9,8
1,5	S28	16
	E28	16
2,2	S28	22,1
	E28	22,1
3		
4		
5,5		
7,5		
11		
15		

5 Integrated frequency converter

Available powers are below:

Power kW	200-240 V 1-Phase		200-240 V 3-Phases		400-480 V 3-Phases	
	Data		Data		Data	
	Intensity (A)	Circuit breaker (A)	Intensity (A)	Circuit breaker (A)	Intensity (A)	Circuit breaker (A)
0,25	3,5	8	2	4	1	4
0,37	4	10	3	6	1,5	4
0,55	4,5	10	4	6	2	6
0,75	7	16	5	8	3	6
0,9	9	16	5,5	10	3,5	8
1,1	11	20	6	10	4	10
1,5	14	25	7	16	5	10
1,8			7,5	16	5,5	10
2,2			8	16	6	10
3					7	16
4					8	16



Standardised Speed control button



In no case, can this data replace norms

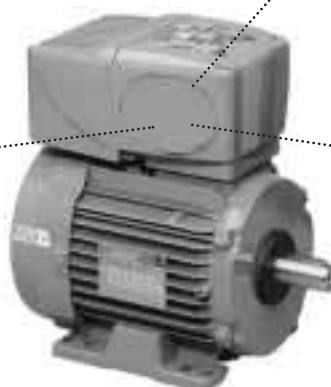
200-240 V 1-Phase					200-240 V 3-Phases							400-480 V 3-Phases						
Data					Data							Data						
Circuit breaker (A)	Footprint				type	Data		Footprint				type	Data		Footprint			
	L mm	h mm	P mm	weight kg		Intensity (A)	Circuit breaker (A)	L mm	h mm	P mm	weight kg		Intensity (A)	Circuit breaker (A)	L mm	h mm	P mm	weight kg
5	72	130	119	1,0														
	130	210	154	2,5														
5	72	130	119	1,0														
	130	210	154	2,5														
10	105	130	140	1,8														
	219	297	177	5,0														
10	72	130	132	1,2							S28	3,9	4	130	150	150	2,5	
	130	210	154	2,5							E28	3,9		219	297	201	6,5	
10	105	130	140	1,8														
	219	297	177	5,0														
18	130	150	150	2,5							S28	6,5	6,3	130	150	150	2,5	
	219	297	201	6,5							E28	6,5		219	297	201	6,5	
25	140	195	163	3,8							S28	8,4	10	140	195	163	3,8	
	230	347	222	9,5							E28	8,4		230	347	222	9,5	
					S28	17,6	18	140	195	163	3,8	S28	10,3	10	140	195	163	3,8
					E28	17,6		230	347	222	9,5	E28	10,3		230	347	222	9,5
					S28	21,9	25	140	195	163	3,8	S28	13	14	140	195	163	3,8
					E28	21,9		230	347	222	9,5	E28	13		230	347	222	9,5
					S28	38	50	200	270	170	6,1	S28	22,1	25	200	270	170	6,1
												E58	17		500	700	300,5	70,0
					S28	43,5	50	200	270	170	6,1	S28	25,8	50	200	270	170	6,1
												E58	17,5		500	700	300,5	70,0
												S28	39,3	50	245	330	195	9,6
												E58	24		500	700	300,5	70,0
												S28	45	50	245	330	195	9,6
												E58	29,5		500	700	300,5	70,0

Options :

Internal potentiometers for control from process



Speed control button and start/stop



Speed control button and backward/stop/forward

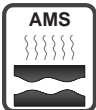


Pumps to process

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Tel (33) 1 41 08 15 15 - Telex 634 129 F - Fax (33) 1 41 08 15 00
http://www.pcmpompes.com Email:pcm@pcmpompes.com

PCM EQUIPEMENT

6 Complementary accessories



Stator Security System : Moineau pumps do not allow dry running. PCM proposes a flow controller capable of switching off the power if a default is detected.



Hose failure detection (DRT) : On peristaltic pumps, this sensor is switched off when the default is detected.



Pressure switch against over pressure : If the discharge canalisation is blocked (cork, valve), the pump will fill the tube until a mechanical destruction (pump or tube). The pressure switch can detect a default and stop the pump before any destruction.



Pressure switch against under pressure : Pressure is an important parameter in the process. Pressure switch can stop a process if the pressure is not adequate for a good quality production.



H.M.I. : With a light on the front of the box and a switch for the default acquittement.

