

## Model

Designation	<b>MS18UVULTM</b>	Sales code:	<b>104M0820</b>
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## Compressor design

Oil type	Polyolester	Refrigerant(s)	<b>R290, R170</b>
Oil viscosity	32cST	Displacement	17,69cm <sup>3</sup> / 1,08cu.in
Oil quantity	555cm <sup>3</sup> / 18,8fl.oz	Compressors on pallet	80
Refr. charge - tech. limit	550g / 19,4oz		
Free gas volume comp.	1460cm <sup>3</sup> / 49,4fl.oz		
Weight	14,2kg / 31,3lbs		
Motor protection	2# internal		
Winding resist. ph. to ph.	3,93Ω (at 25°C)		
Max. winding temp.	125°C / 257°F		
Max. discharge temp.	130°C / 266°F		
Additional note	Good robustness against liquid intake. Compressor for laboratory and medical applications. Check special warranty terms with Secop Sales.		



## General - Configurations and Applications with MS18UVULTM and Controller

	<b>Conf. 1</b>	<b>Conf. 2</b>
Sales code single pack:	105N4730	105N4730
Sales code industry pack:	105N4731	105N4731
Power supply (nominal)	230V 50/60Hz	230V 50/60Hz
Approvals	UL,VDE,CCC	UL,VDE,CCC
Refrigerant	R290	R170
Number of phases	1~ AC	1~ AC
Application	LBP+MBP	ULT+LBP+MBP
Starting torque	LST	LST
Hot gas defrost	OK	OK
Long interval pull down	OK	OK
System cooling	fan 3m/s	fan 3m/s
Note	- / -	

## Controller functions

	<b>Conf. 1</b>	<b>Conf. 2</b>
Protection	Mechanic	Mechanic
Max output power	1200 W	1200 W
No of relays	0	0
Hot gas defrost	yes	yes
AEO speed setting	yes	yes
Serial speed setting	yes	yes
DWI / Frequency input	yes	yes
Note		

## Model

Designation

**MS18UVULTM**

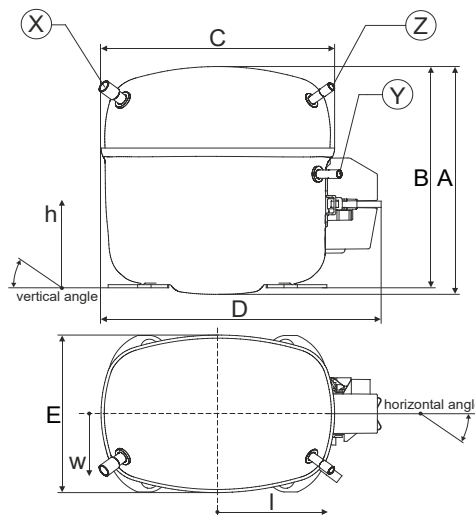
Sales code:

**104M0820**

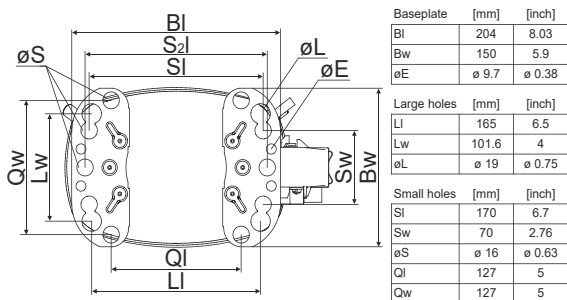
## Compressor dimensions

<b>Housing</b>	A Height	219mm / 8,62in
	B Height	213mm / 8,39in
	C Length shell	218mm / 8,58in
	D Length w. cover	255mm / 10,04in
	E Width	151mm / 5,94in

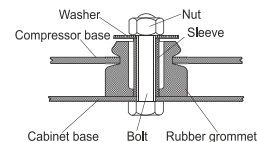
Connectors	Suction		Discharge		Process	
	X		Y		Z	
Diameter [mm]	øi 10,11-10,29		øi 6,11-6,29		øi 6,11-6,29	
(i:inside, o:outside) [in]	øi 0,4-0,41		øi 0,24-0,25		øi 0,24-0,25	
Material	copper		copper		copper	
Horizontal angle ±2°	37°		37°		37°	
Vertical angle ±2°	30°		0°		30°	
Position l/h/w [mm]	-106/193/55		114/110/63		106/193/54	
[in]	-4,2/7,6/2,1		4,5/4,3/2,5		4,2/7,6/2,1	
Straight tube l. [mm]	12		12		12	
[in]	0,5		0,5		0,5	



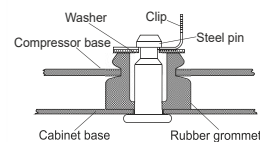
## Compressor fixation



### Bolt joint



### Snap-on



## Mounting accessories

Bolt joint | M6 | ø16mm

Snap-on | ø7,3 | ø16mm

one comp.

118-1958

multi pack

118-1961

118-1962

## Application notes

Operation possible until tilted up to 3 degrees

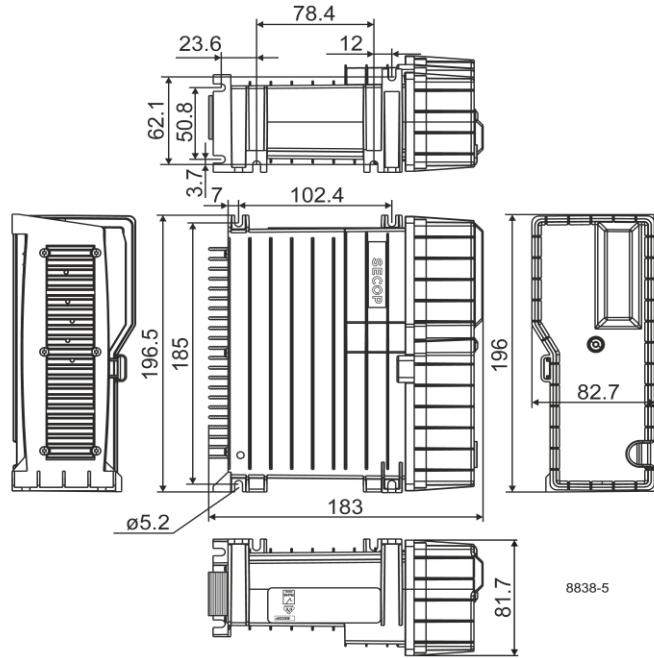
Provision for PE Grounding is located at the PE Stamp on the compressor

Suction intake without telescope

<b>Model</b>				
Designation	<b>MS18UVULTM</b>	<b>230V 50/60Hz</b>	<b>Conf. 1</b>	Sales code: <b>104M0820</b>
<b>Controller</b>	<b>SLVE 230V SAE</b>			<b>105N4730</b>

Sales code single pack:	105N4730 (1 units)
Sales code industry pack:	105N4731 (8 units)
Adaption to compressor:	detached
Protection class:	IP54
Weight:	1,2 kg / 2,64 lbs
Voltage nom.:	230V 50/60Hz
Voltage range:	180-270 V
Max. current:	7A (230V)
LRA (Locked Rotor Amperage)	0
Cable length:	700 mm
Compressor speed range:	2150-4500 rpm
Housing plastic:	UL94-V0

Controller dimensions:



QR Code and Hyperlink leads to the [Operating Instructions.](#)

**Operation Limits**

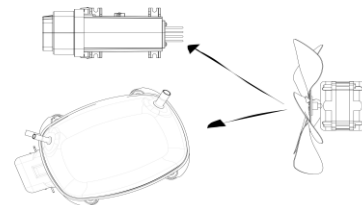
Suctioning temperature < +20°C (continuous operation)

**Ambient/ machineroom temperatures minimum /maximum**

Ambient temperature range:	10 - 43°C / 50 - 110°F
Machine room temperature range compressor:	10 - 48°C / 50 - 119°F
Machine room temperature range controller:	10 - 50°C / 50 - 122°F

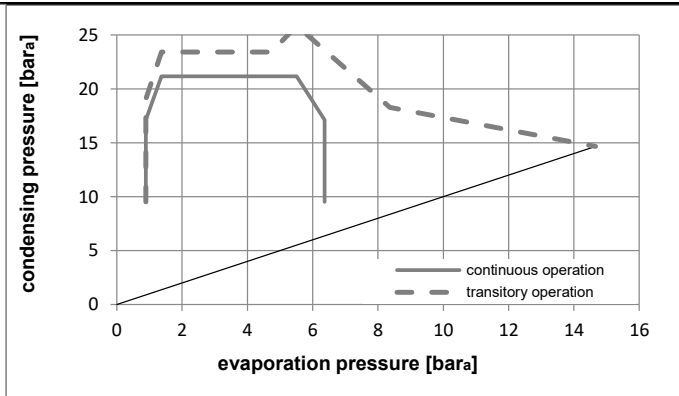
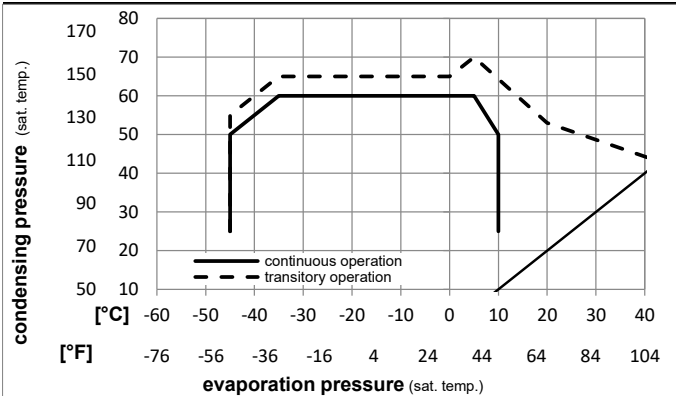
**System cooling**

Ensure proper airflow of 3 m/s at both compressor and electronic units.  
The airflow for the electronics must be directed to the heat sink.



**Operation pressure range**

R290

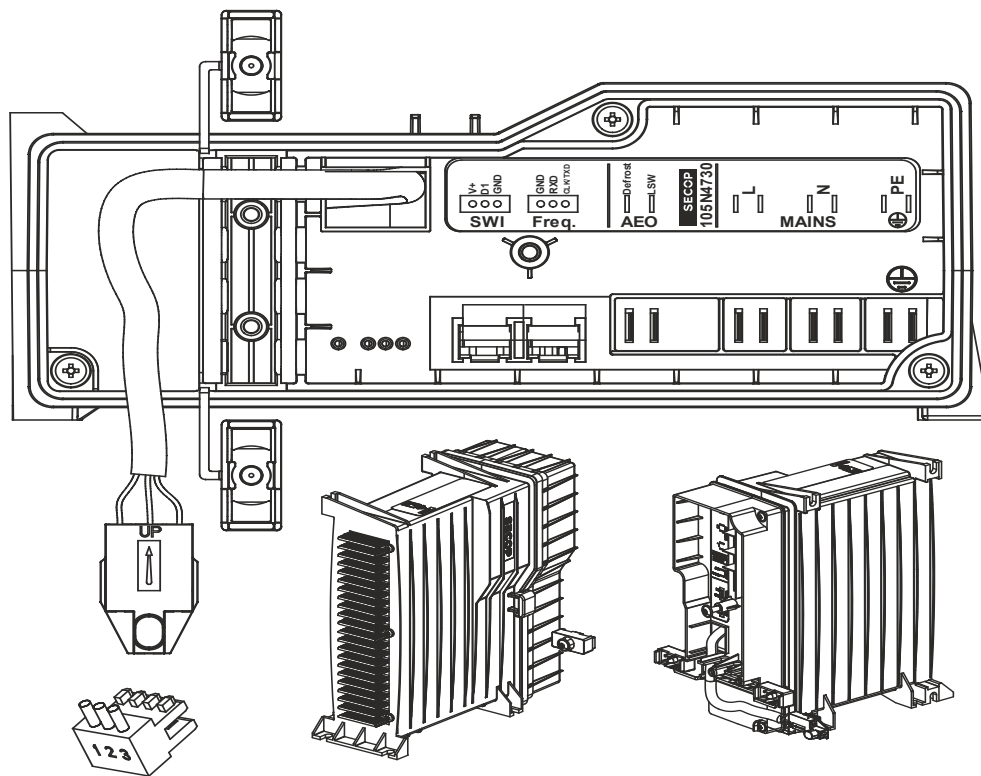


### Model

Designation **MS18UVULTM 230V 50/60Hz Conf. 1** Sales code: **104M0820**

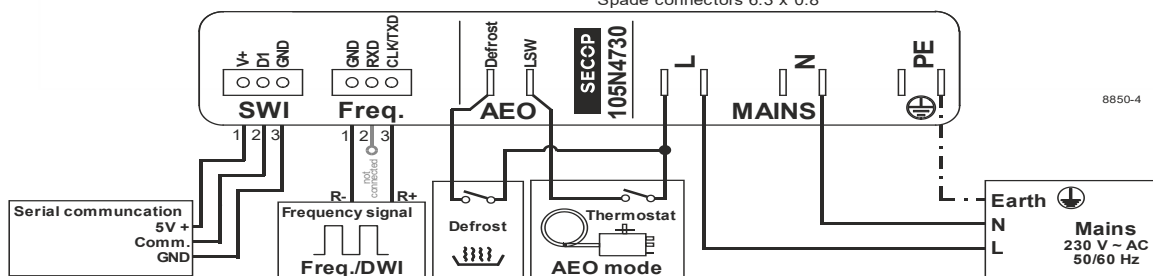
Controller **SLVE 230V SAE** **105N4730**

### Controller connections



RAST 2.5

Spade connectors 6.3 x 0.8



### Accessories (Compressor + Controller) - check operation manual for details

103N2008 plastic cover 1 pcs

### Model

Designation	<b>MS18UVULTM</b>	<b>230V 50/60Hz</b>	<b>Conf. 1</b>	Sales code:	<b>104M0820</b>
Controller	<b>SLVE 230V SAE</b>				<b>105N4730</b>

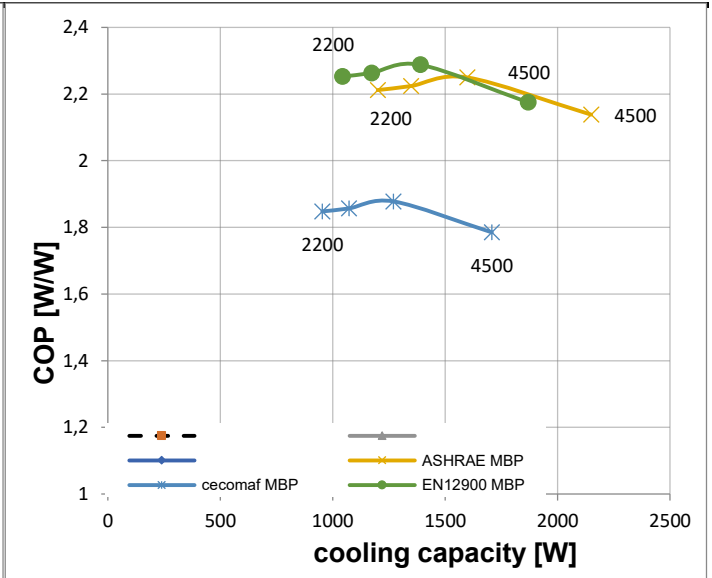
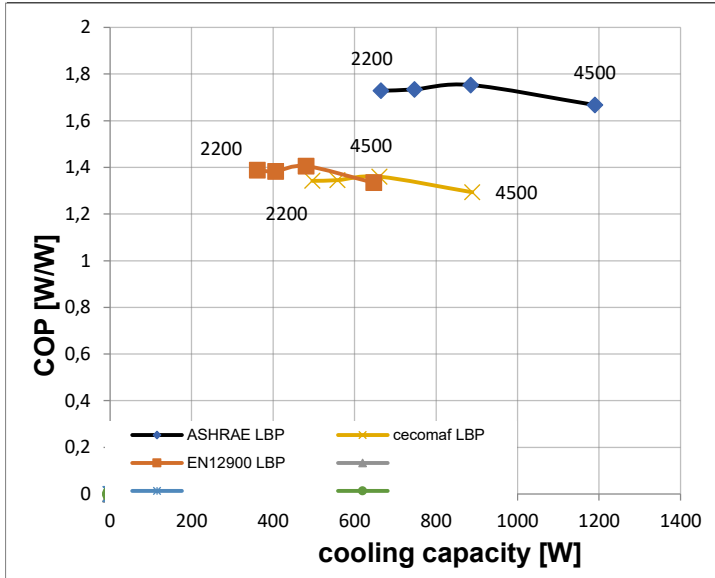
### Optimization + standard conditions

R290, 220V, 50Hz, Rpm\_N 4500, fan 3m/s

	Evaporating pressure (saturation temperature)				Condensing pressure (saturation temperature)			Return gas temp.			Liquid temp.			Cooling capacity			COP	EER	Power consumption			ASHRAE LBP			
	pe	pc	RGT	Tliq	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[kcal/Wh]	P1	I	ṁ	[W]	[A]	[kg/h]									
[°C]	-23	54	32	32	1190,1	4065	1024,3	1,67	5,69	1,43	713,9	3,88	12,05												
[°F]	-10	130	90	90																					
[°C]	-25	55	32	55	888,8	3035	764,9	1,29	4,42	1,11	687,2	3,73	11,07												
[°F]	-13	131	90	131																					
[°C]	-35	40	20	40	646,9	2209	556,7	1,33	4,56	1,15	484,8	2,63	7,39												
[°F]	-31	104	68	104																					
[°C]	-7	54	35	46	2149,0	7339	1849,4	2,14	7,30	1,84	1004,9	5,46	24,51												
[°F]	20	130	95	115																					
[°C]	-10	55	32	55	1707,6	5832	1469,6	1,79	6,10	1,54	956,6	5,20	21,60												
[°F]	14	131	90	131																					
[°C]	-10	45	20	45	1868,3	6381	1607,9	2,18	7,43	1,87	858,9	4,67	22,94												
[°F]	14	113	68	113																					

### Standard conditions with different RPM

R290, 220V, 50Hz, Rpm\_N 4500, fan 3m/s



### Test conditions:

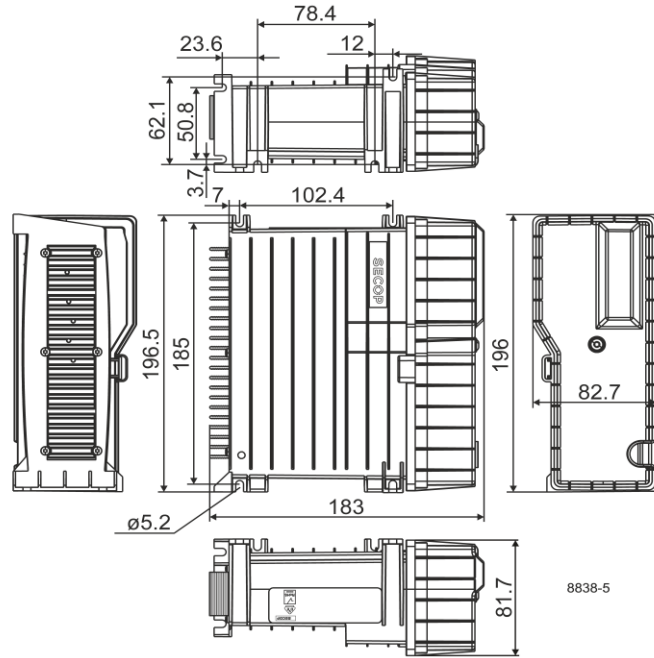
	pe [°C]	pc [°C]	Tliq [°C]	Tsuc [°C]		pe [°C]	pc [°C]	Tliq [°C]	Tsuc [°C]
ASHRAE LBP	-23,33	54,44	32,22	32,22	ASHRAE MBP	-6,66	54,44	46,11	35
cecomaf LBP	-25	55	55	32	cecomaf MBP	-10	55	55	32
EN12900 LBP	-35	40	40	20	EN12900 MBP	-10	45	45	20

## Model

Designation	<b>MS18UVULTM</b>	<b>230V 50/60Hz</b>	<b>Conf. 2</b>	Sales code:	<b>104M0820</b>
Controller	<b>SLVE 230V SAE</b>				<b>105N4730</b>

Sales code single pack:	105N4730 (1 units)
Sales code industry pack:	105N4731 (8 units)
Adaption to compressor:	detached
Protection class:	IP54
Weight:	1,2 kg / 2,64 lbs
Voltage nom.:	230V 50/60Hz
Voltage range:	180-270 V
Max. current:	7A (230V)
LRA (Locked Rotor Amperage)	0
Cable length:	700 mm
Compressor speed range:	2150-4500 rpm
Housing plastic:	UL94-V0

### Controller dimensions:



QR Code and Hyperlink leads to the [Operating Instructions.](#)

## Operation Limits

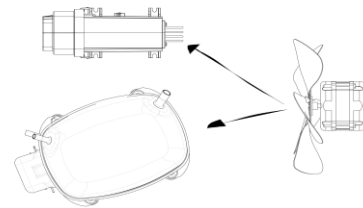
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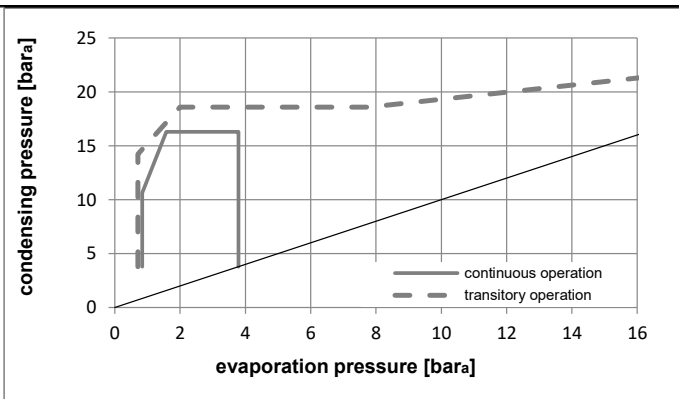
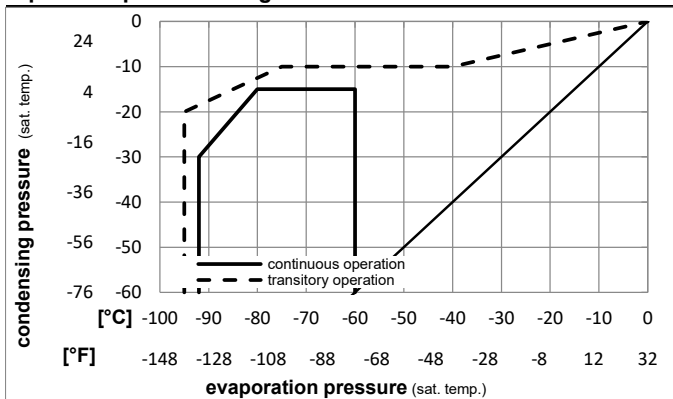
## System cooling

Ensure proper airflow of 3 m/s at both compressor and electronic units.  
The airflow for the electronics must be directed to the heat sink.



## Operation pressure range

R170

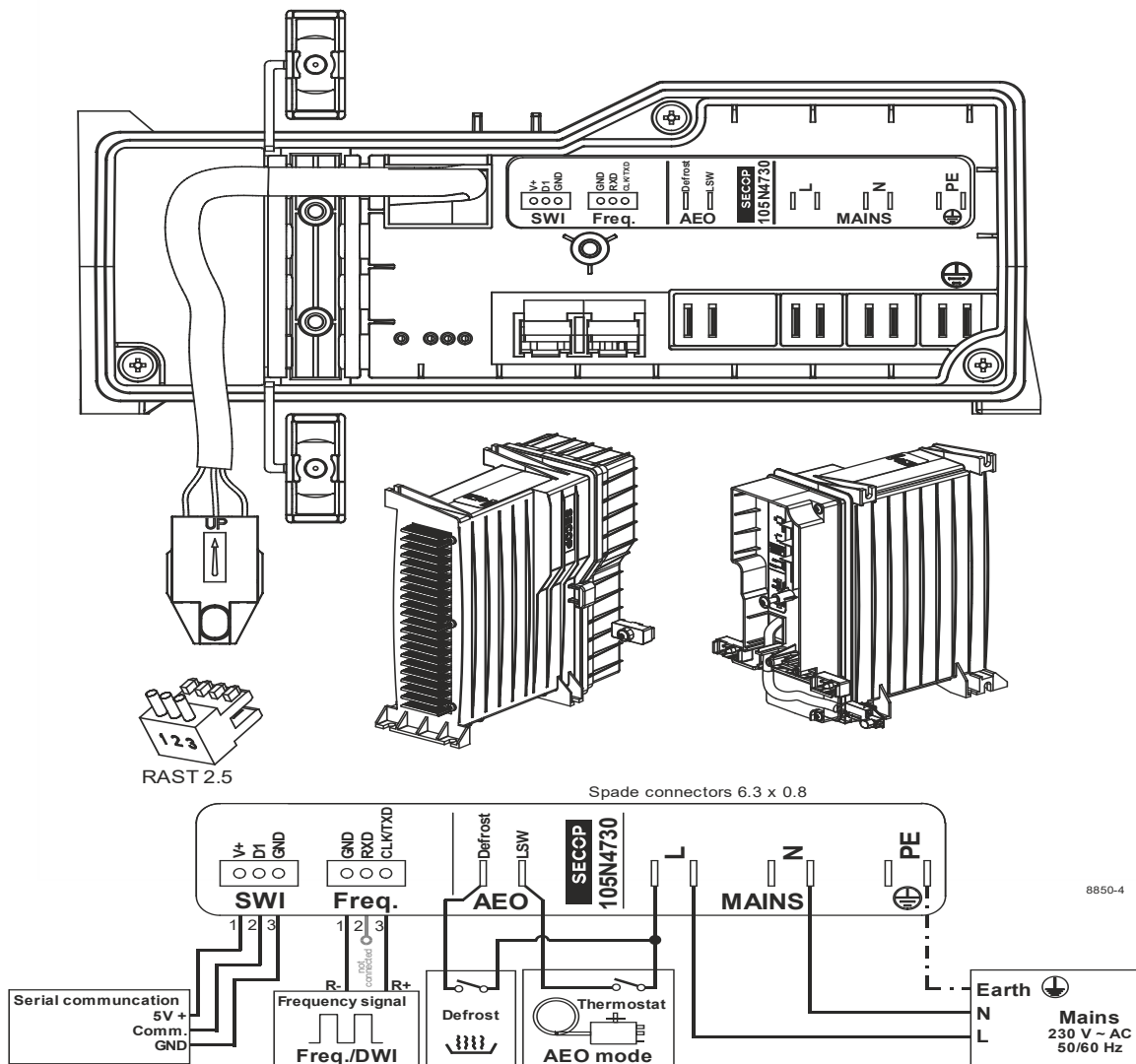


### Model

Designation **MS18UVULTM 230V 50/60Hz Conf. 2** Sales code: **104M0820**

Controller **SLVE 230V SAE** **105N4730**

### Controller connections



### Accessories (Compressor + Controller) - check operation manual for details

103N2008 plastic cover 1 pcs

### Model

Designation	<b>MS18UVULTM</b>	<b>230V 50/60Hz</b>	<b>Conf. 2</b>	Sales code:	<b>104M0820</b>
Controller	<b>SLVE 230V SAE</b>				<b>105N4730</b>

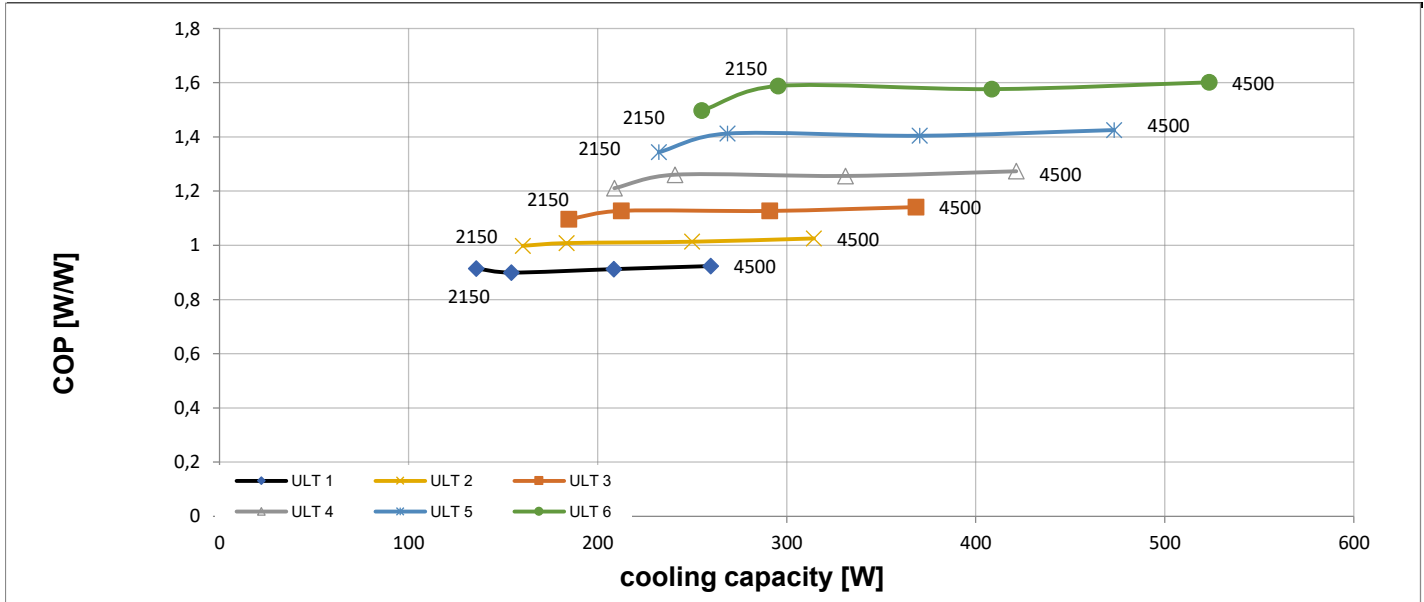
### Optimization + standard conditions

R170, 220V, 50Hz, Rpm\_N 4500, fan 3m/s

	Evaporating pressure (saturation temperature)				Condensing pressure (saturation temperature)			Return gas temp.			Liquid temp.			Cooling capacity			COP			EER			Power consumption		
	pe	pc	RGT	Tliq	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[kcal/Wh]	P1	I	ṁ	[W]	[A]	[kg/h]	ULT 1	ULT 2	ULT 3	ULT 4	ULT 5	ULT 6			
[°C]	-90	-15	10	-15	259,8	887	223,6	0,92	3,15	0,79	281,3	1,28	2,11												
[°F]	-130	5	50	5																					
[°C]	-90	-20	10	-20	314,4	1074	270,6	1,03	3,50	0,88	306,6	1,39	2,47												
[°F]	-130	-4	50	-4																					
[°C]	-90	-25	10	-25	368,4	1258	317,0	1,14	3,90	0,98	322,8	1,47	2,80												
[°F]	-130	-13	50	-13																					
[°C]	-90	-30	10	-30	421,4	1439	362,7	1,27	4,35	1,10	331,0	1,50	3,11												
[°F]	-130	-22	50	-22																					
[°C]	-90	-35	10	-35	473,2	1616	407,2	1,43	4,87	1,23	332,0	1,51	3,39												
[°F]	-130	-31	50	-31																					
[°C]	-90	-40	10	-40	523,4	1788	450,5	1,60	5,47	1,38	326,9	1,49	3,65												
[°F]	-130	-40	50	-40																					

### Standard conditions with different RPM

R170, 220V, 50Hz, fan 3m/s



Test conditions:	pe [°C]	pc [°C]	Tliq [°C]	Tsuc [°C]
ULT 1	-90	-15	-15	10
ULT 2	-90	-20	-20	10
ULT 3	-90	-25	-25	10
ULT 4	-90	-30	-30	10
ULT 5	-90	-35	-35	10
ULT 6	-90	-40	-40	10