

ULT - ready

Model

Designation	MN11UHULTM	115-127V/60Hz 1~	Sales code:	105M0830
-------------	-------------------	------------------	-------------	-----------------

Compressor design

Oil type	Polyolester	Refrigerant(s)	R170
Oil viscosity	32cST	Displacement	11,15cm ³ / 0,68cu.in
Oil quantity	300cm ³ / 10,1fl.oz	Compressors on pallet	80
Refr. charge - tech. limit	150g / 5,3oz		
Free gas volume comp.	2360cm ³ / 79,8fl.oz		
Weight	12,13kg / 26,7lbs		
Motor protection	1# internal		
Winding resistance main	1,1Ω (at 25°C)		
Winding resistance aux	3,61Ω (at 25°C)		
Max. winding temp.	125°C / 257°F		
Max. discharge temp.	130°C / 266°F		



General - Configurations with MN11UHULTM

	Conf. 1
Motorconfiguration	CSIR
Power supply (nominal)	115V/60Hz
Number of phases	1
Voltage range	103-127V
Approvals	UL
Starting torque	HST
Note	ULT-ready. Compressor for low-temp-stage of cascade refrigeration systems.

Applications with MN11UHULTM

	Conf. 1
Refrigerant	R170
Application	LBP
System cooling	fan 3m/s
Hot gas defrost	-/-
Long interval pull down	-/-

Electrical data - Configurations with MN11UHULTM

	Conf. 1
Starting device type	relay
Run capacitor	-/-
Start capacitor	180μF
LRA (locked rotor amps / 4s)	28,67A
RLA (rated load amps / 1s)	5,74A
Cut in current	28,67A

Model

ULT - ready

Designation

MN11UHULTM

115-127V/60Hz 1~

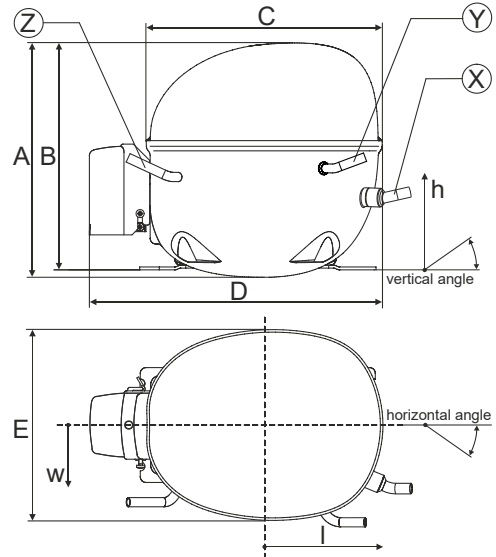
Sales code:

105M0830

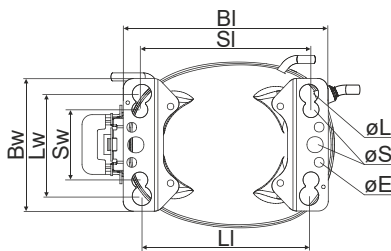
Compressor dimensions

Housing	A Height	203mm / 7,99in
	B Height	197mm / 7,76in
	C Length shell	205mm / 8,07in
	D Length w. cover	254mm / 10in
	E Width	166mm / 6,54in

Connectors		Suction	Discharge	Process
		X	Y	Z
Diameter	[mm]	øi 8,11-8,29	øi 6,41-6,59	øi 6,41-6,59
(i:inside, o:outside)	[in]	øi 0,32-0,33	øi 0,25-0,26	øi 0,25-0,26
Material		copper	copper	copper
Horizontal angle	±2°	0°	0°	0°
Vertical angle	±2°	15°	15°	155°
Position l/h/w	[mm]	132/69/56	94/99/86	-111/92/72
	[in]	5,2/2,7/2,2	3,7/3,9/3,4	-4,4/3,6/2,8
Straight tube l.	[mm]	12	12	12
	[in]	0,5	0,5	0,5

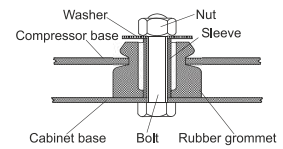


Compressor fixation

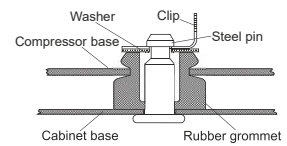


Baseplate	[mm]	[inch]
BI	204	8.03
BW	132	5.2
øE	ø 9.7	ø 0.38
Large holes	[mm]	[inch]
LI	165	6.5
LW	101.6	4
øL	ø 19	ø 0.75
Small holes	[mm]	[inch]
SI	170	6.7
SW	70	2.76
øS	ø 16	ø 0.63

Bolt joint



Snap-on



Mounting accessories

	one comp.	multi pack
Bolt joint M6 ø16mm	118-1917	118-1918
Bolt joint ø1/4" ø16mm	118-1946	
Bolt joint ø1/4" ø19mm	118-1949	
Snap-on ø7,3 ø16mm	118-1947	118-1919

Application notes

ULT-ready. Compressor for low-temp-stage of cascade refrigeration systems.

No warranty if compressor operated relevant time outside of published operation limits.

Contact SECOP-Sales to agree on warranty limits (depends on kind of application).

ULT - ready

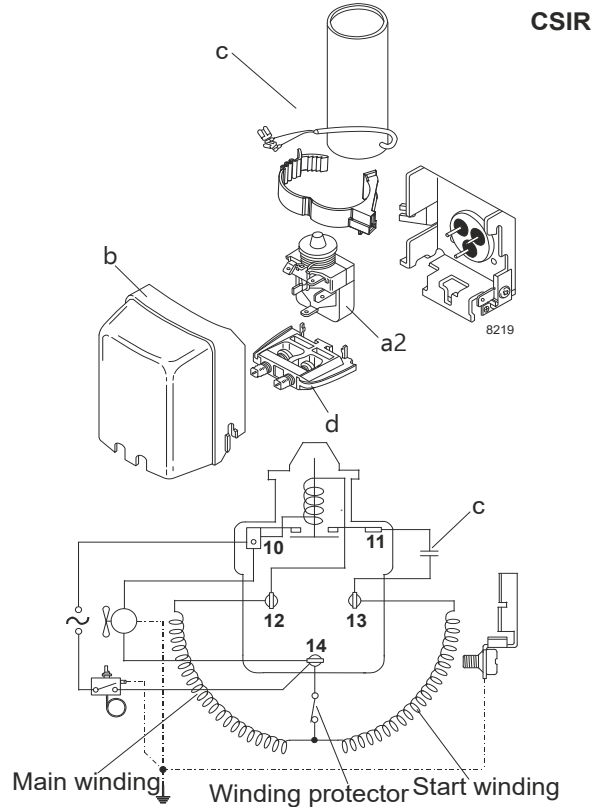
Model

Designation **MN11UHULTM 115V/60Hz** Conf. 1 Sales code: **105M0830**

Configuration

Motorconfiguration CSIR
 Power supply (nominal) 115V/60Hz 1~
 Refrigerant R170
 Application LBP
 Voltage range 103-127V
 Starting torque HST
 Approvals UL

Electrical accessories / wiring diagram

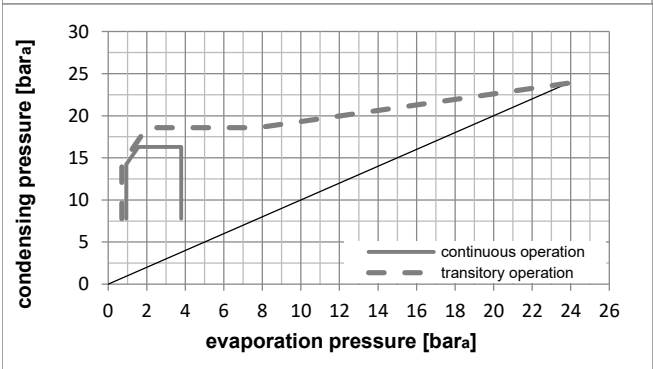
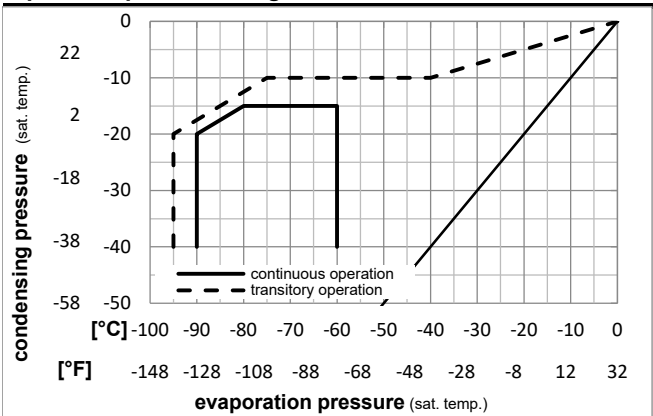


Ambient temperatures / system cooling

Ambient temperature min.: 10°C / 50°F
 Ambient temperature max.: 38°C / 101°F

System cooling (n/a: outside limits)			
T ambient	LBP	MBP	HBP
32°C / 90°F	fan 3m/s	n/a	n/a
38°C / 100°F	fan 3m/s	n/a	n/a
43°C / 110°F	n/a	n/a	n/a

Operation pressure range



Components

- a2 relay 117U7044
- c start capacitor (180µF) 117U5097
- b plastic cover 103N2011
- d cord relief 103N1010

ULT - ready

Model

Designation **MN11UHULTM 115V/60Hz** Conf. 1 Sales code: **105M0830**

Optimization + standard conditions

R170, 115V/60Hz, CSIR, fan 3m/s, UL

Evaporating pressure (saturation temperature)					Condensing pressure (saturation temperature)					Power consumption				
				Return gas temp.						Current consumption		Ref. mass flow		
				Liquid temp.	Cooling capacity			COP	EER		P1	I	ṁ	
pe	pc	RGT	Tliq		[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[kcal/Wh]	[W]	[A]	[kg/h]	
[°C]	-90	-15	-20	-15	161,5	552	139,0	0,67	2,28	0,58	241,4	3,77	1,48	1
[°F]	-130	5	-4	5										
[°C]	-90	-20	-20	-20	186,6	637	160,6	0,89	3,03	0,76	210,6	3,59	1,64	2
[°F]	-130	-4	-4	-4										
[°C]	-90	-25	-20	-25	208,8	713	179,7	1,06	3,63	0,91	196,6	3,51	1,77	3
[°F]	-130	-13	-4	-13										
[°C]	-90	-30	-20	-30	228,8	781	196,9	1,20	4,09	1,03	191,2	3,49	1,88	4
[°F]	-130	-22	-4	-22										
[°C]	-90	-35	-20	-35	247,1	844	212,7	1,33	4,53	1,14	186,2	3,47	1,96	5
[°F]	-130	-31	-4	-31										
[°C]	-90	-40	-20	-40	264,5	903	227,6	1,53	5,22	1,31	173,2	3,41	2,04	6
[°F]	-130	-40	-4	-40										

Performance tables

R170, 115V/60Hz, CSIR, fan 3m/s, UL

	pe	Cooling capacity			COP	EER		P1	I	m	
	[°C]	[°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[kcal/Wh]	[W]	[A]	[kg/h]
[°C / °F]	-90	-130	208,8	713	179,7	1,06	3,63	0,91	196,6	3,51	1,77
cond. pressure	-85	-121	299,5	1023	257,7	1,31	4,46	1,13	229,1	3,65	2,55
pc= -25/-13	-80	-112	409,6	1399	352,5	1,55	5,30	1,34	263,9	3,83	3,49
return gas temp.	-75	-103	542,5	1853	466,9	1,80	6,16	1,55	300,6	4,04	4,64
RGT= -20/-4	-70	-94	701,4	2395	603,7	2,07	7,07	1,78	338,9	4,28	6,02
liquid temp	-65	-85	889,5	3038	765,5	2,35	8,03	2,02	378,4	4,55	7,66
Tliq= -25/-13	-60	-76	1109,6	3790	954,9	2,65	9,05	2,28	418,7	4,84	9,60
[°C / °F]	-90	-130	247,1	844	212,7	1,33	4,53	1,14	186,2	3,47	1,96
cond. pressure	-85	-121	343,4	1173	295,5	1,59	5,43	1,37	216,1	3,60	2,73
pc= -35/-31	-80	-112	461,4	1576	397,1	1,88	6,43	1,62	245,0	3,74	3,68
return gas temp	-75	-103	604,6	2065	520,3	2,22	7,58	1,91	272,4	3,89	4,83
RGT= -20/-4	-70	-94	776,1	2651	667,9	2,60	8,89	2,24	298,1	4,03	6,23
liquid temp	-65	-85	979,3	3344	842,8	3,05	10,40	2,62	321,6	4,17	7,88
Tliq= -35/-31	-60	-76	1217,0	4156	1047,3	3,55	12,14	3,06	342,4	4,30	9,84

Model

ULT - ready

Designation

MN11UHULTM 115V/60Hz

Sales code:

105M0830

Application note

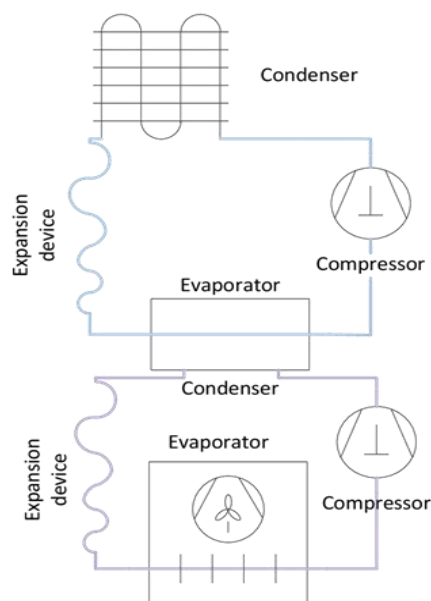
This compressor is designed for operation inside the low-temperature-stage of a two stage refrigeration cascade. Use of various refrigerants and refrigerant-mixtures is possible but it must be ensured that the pressure limits shown on the pages before are not exceeded.

Operation outside of the published operation limits (pressures, temperatures, compressor cooling, voltage range) may lead to serious overloading of motor protector and starting equipment and must be avoided. In case of frequent overloading defects of relays, capacitors or motor protectors can occur.

To avoid overloading (or to keep it on the lowest possible level) adjust size of heat-exchangers, temperature of intercooler, and on-off control of compressors and fans.

Please also read design recommendations for ULT cabinets:

<https://www.secop.com/ult>



ULT - ready compressors

These compressors allow operation with various refrigerants. Chemical compatibility (UL) is proven for R170. Motor and motor-protector are adjusted for safe and reliable operation inside the published operation limits. Extra-robust starting equipment is used but unfortunate performance regulation of the high-temperature-stage may create serious overloading of the second stage during starting. Compressors are proven reliable by internal SECOP testing (running inside given operation limits).

Warranty

Since design and regulation-strategy of the two stage cascade significantly define overloading of the compressor in the low-temperature-stage SECOP can't give universal warranty. Conditional warranty can be given in cases of joined (cabinet producer & SECOP) testing and approval. No liability in case of design changes like: use of different oil, use of different starting equipment or motor protector. No warranty if operated relevant time outside of published operation limits.