

## Single Pack TL4GH 220-240V 50Hz / 208-230V 60Hz CSIR

Single pack code number: **195B4140**

Position	Title	Code	Amount
1	Compressor TL4GH	102G4455	1
2	Starting relay	117U6000	1
3	Starting capacitor (60 $\mu$ F 220V, 6.3mm)	117U5014	1
4	Cord relief	103N1010	1
5	Cover	103N2011	1
6	Bolt joint for one compressor   M6   $\varnothing$ 16mm	118-1917	1

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## Model

Designation	<b>TL4GH</b>	220-240V/50Hz 1~ 208-230V/60Hz 1~	Sales code:	<b>102G4455</b>
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## Compressor design

Oil type	Polyolester	Refrigerant(s)	<b>R134a, R513A</b>
Oil viscosity	32cST	Displacement	3,86cm <sup>3</sup> / 0,24cu.in
Oil quantity	283cm <sup>3</sup> / 9,6fl.oz	Compressors on pallet	125
Refr. charge - tech. limit	600g / 21,2oz		
Free gas volume comp.	1690cm <sup>3</sup> / 57,1fl.oz		
Weight	7,5kg / 16,5lbs		
Motor protection	1# internal		
Winding resistance main	14,5Ω (at 25°C)		
Winding resistance aux	14,8Ω (at 25°C)		
Max. winding temp.	125°C / 257°F		
Max. discharge temp.	130°C / 266°F		



## General - Configurations with TL4GH

	<b>Conf. 1</b>	<b>Conf. 2</b>	<b>Conf. 3</b>	<b>Conf. 4</b>
Motorconfiguration	CSIR	CSIR	CSIR	CSIR
Power supply (nominal)	220-240V/50Hz	220-240V/50Hz	208-230V/60Hz	208-230V/60Hz
Number of phases	1	1	1	1
Voltage range	198-254V	198-254V	198-254V	198-254V
Approvals	VDE, UL, CCC	VDE, UL, CCC	VDE, UL, CCC	VDE, UL, CCC
Starting torque	HST	HST	HST	HST
Note	- / -			

## Applications with TL4GH

	<b>Conf. 1</b>	<b>Conf. 2</b>	<b>Conf. 3</b>	<b>Conf. 4</b>
Refrigerant	R134a	R513A	R134a	R513A
Application	MBP+HBP	MBP+HBP	MBP+HBP	MBP+HBP
System cooling	fan 3m/s	fan 3m/s	fan 3m/s	fan 3m/s
Hot gas defrost	OK	OK	OK	OK
Long interval pull down	OK	OK	OK	OK

## Electrical data - Configurations with TL4GH

	<b>Conf. 1</b>	<b>Conf. 2</b>	<b>Conf. 3</b>	<b>Conf. 4</b>
Starting device type	relay	relay	relay	relay
Run capacitor	- / -	- / -	- / -	- / -
Start capacitor	60μF	60μF	60μF	60μF
LRA (locked rotor amps / 4s)	5,7A	5,7A	5,7A	5,7A
RLA (rated load amps / 1s)	1,1A	1,1A	1,1A	1,1A
Cut in current	9,7A	9,7A	9,7A	9,7A

## Model

Designation

**TL4GH**

220-240V/50Hz 1~ 208-230V/60Hz 1~

Sales code:

**102G4455**

## Compressor dimensions

<b>Housing</b>	A Height	174mm / 6,85in
	B Height	170mm / 6,69in
	C Length shell	176mm / 6,93in
	D Length w. cover	222mm / 8,74in
	E Width	157mm / 6,18in

Connectors		Suction	Discharge	Process
		X	Y	Z
Diameter	[mm]	øi 6,11-6,29	øi 5,12-5,22	øi 6,11-6,29
	(i:inside, o:outside) [in]	øi 0,24-0,25	øi 0,2-0,21	øi 0,24-0,25
Material		copper	copper	copper
Horizontal angle	±2°	0°	0°	0°
Vertical angle	±2°	150°	28°	31,5°
Position l/h/w	[mm]	-102/105/66	117/108/30	96/105/71
	[in]	-4/4,1/2,6	4,6/4,3/1,2	3,8/4,1/2,8
Straight tube l.	[mm]	12	12	12
	[in]	0,5	0,5	0,5



## Compressor fixation



Baseplate	[mm]	[inch]
BI	204	8.03
Bw	136	5.35

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

LRA value on compressor label and datasheet may differ due to different test conditions for UL approval.

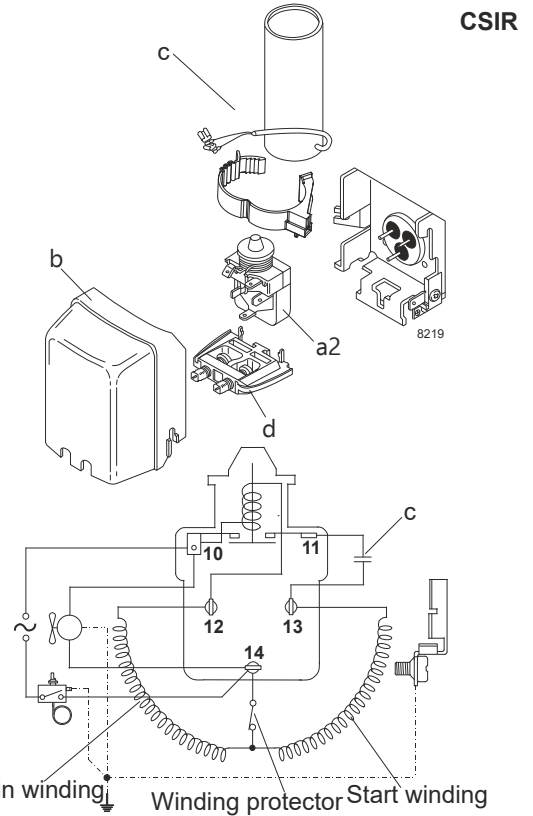
## Model

Designation	<b>TL4GH</b>	<b>220-240V/50Hz</b>	<b>Conf. 1</b>	Sales code:	<b>102G4455</b>
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## Configuration

Motorconfiguration	CSIR	
Power supply (nominal)	220-240V/50Hz 1~	
Refrigerant	R134a	
Application	MBP+HBP	
Voltage range	198-254V	
Starting torque	HST	
Approvals	VDE	
	UL	SA3693
	CCC	

## Electrical accessories / wiring diagram

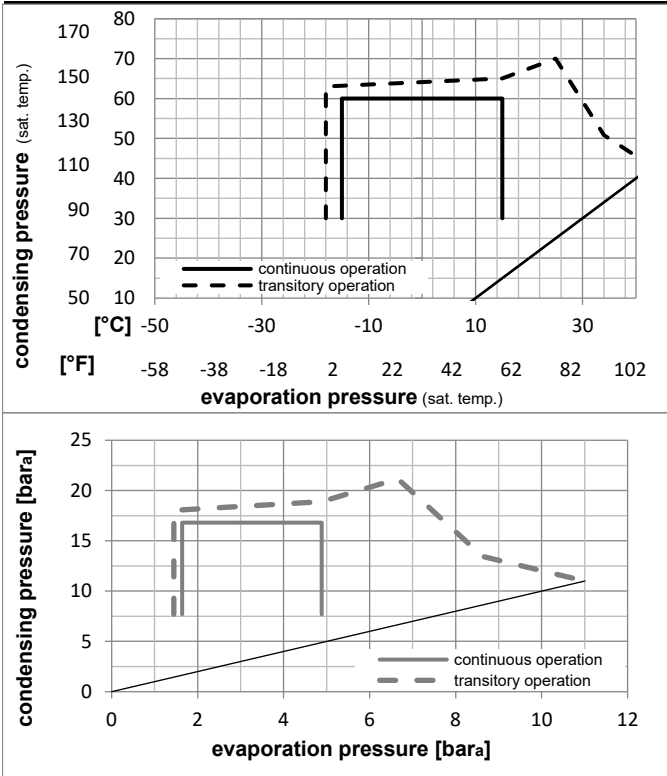


## Ambient/ machine room temperatures minimum /maximum

Ambient temperature range:	10 - 43°C / 50 - 110°F
Machine room temperature range:	10 - 48°C / 50 - 119°F
Compressor cooling:	fan 3m/s

## Operation Limits

## Operation pressure range



## Components

a2	relay	117U6000
c	start capacitor (60μF)	117U5014
d	cord relief	103N1010
b	plastic cover	103N2011

### Model

Designation **TL4GH** **220-240V/50Hz** Conf. 1 Sales code: **102G4455**

### Optimization + standard conditions

R134a, 220V/50Hz, CSIR, fan 3m/s, VDE, UL, CCC

	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]						P1	I	Ref. mass flow	
[°C]																
[°F]																
	-23	54	32	32	69,2	236	59,5	0,75	2,57	0,65	92,0	0,90	1,34	ASHRAE LBP		
	-10	130	90	90												
	-25	55	32	55	46,8	160	40,2	0,52	1,78	0,45	89,7	0,89	1,12	cecomaf LBP		
	-13	131	90	131												
	-35	40	20	40	30,4	104	26,2	0,45	1,53	0,39	67,6	0,82	0,67	EN12900 LBP		
	-31	104	68	104												
	-23	49	4,4	49	62,7	214	53,9	0,70	2,40	0,61	89,0	0,89	1,66	ARI540 LBP		
	-10	120	40	120												
	-23	41	32	32	93,5	319	80,5	1,08	3,69	0,93	86,5	0,88	1,82	AHAM LBP		
	-10	105	90	90												
	-35	45	32	45	20,8	71	17,9	0,29	1,01	0,25	70,4	0,81	0,45	opt		
	-31	113	90	113												

### Performance tables

R134a, 220V/50Hz, CSIR, fan 3m/s, VDE, UL, CCC

	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]	-15	5	130,5	446	112,3	1,24	4,25	1,07	105,0	0,93	2,85
cond. pressure	-10	14	170,0	581	146,3	1,46	4,99	1,26	116,3	0,96	3,72
pc= 45/113	-5	23	216,4	739	186,2	1,70	5,79	1,46	127,6	0,99	4,76
return gas temp.	0	32	270,7	924	232,9	1,96	6,68	1,68	138,4	1,02	5,99
RGT= 32/90	5	41	333,9	1140	287,3	2,25	7,70	1,94	148,1	1,05	7,43
liquid temp	10	50	407,1	1390	350,3	2,61	8,90	2,24	156,2	1,08	9,13
Tliq= 45/113	15	59	491,2	1678	422,8	3,03	10,34	2,61	162,3	1,11	11,13
[°C / °F]	-15	5	104,2	356	89,7	0,96	3,26	0,82	109,1	0,97	2,51
cond. pressure	-10	14	139,9	478	120,4	1,16	3,95	1,00	120,9	1,01	3,38
pc= 55/131	-5	23	181,7	620	156,3	1,36	4,65	1,17	133,6	1,05	4,42
return gas temp	0	32	230,4	787	198,3	1,57	5,38	1,35	146,4	1,09	5,64
RGT= 32/90	5	41	287,3	981	247,2	1,81	6,17	1,56	159,0	1,12	7,08
liquid temp	10	50	353,2	1206	304,0	2,07	7,07	1,78	170,7	1,16	8,78
Tliq= 55/131	15	59	429,3	1466	369,5	2,37	8,10	2,04	181,0	1,20	10,78

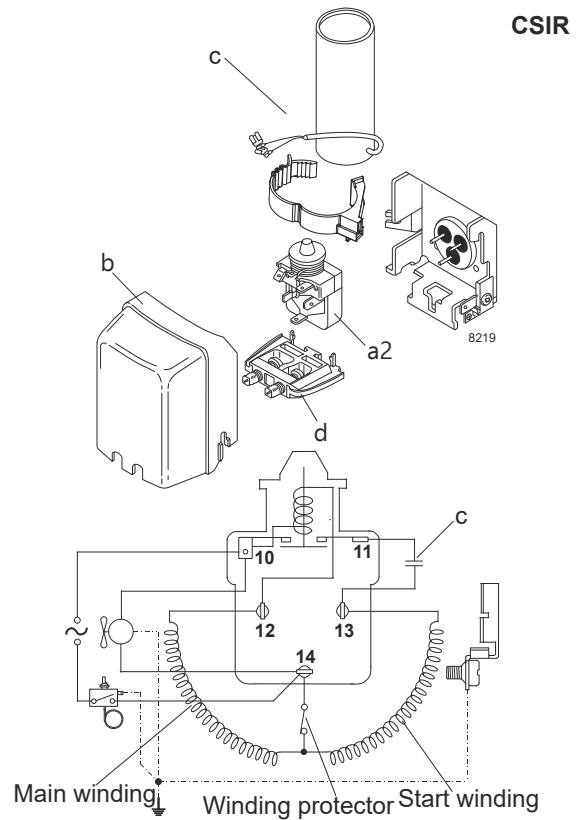
## Model

Designation	<b>TL4GH</b>	<b>220-240V/50Hz</b>	<b>Conf. 2</b>	Sales code:	<b>102G4455</b>
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## Configuration

Motorconfiguration	CSIR	
Power supply (nominal)	220-240V/50Hz 1~	
Refrigerant	R513A	
Application	MBP+HBP	
Voltage range	198-254V	
Starting torque	HST	
Approvals	VDE	
	UL	SA3693
	CCC	

## Electrical accessories / wiring diagram

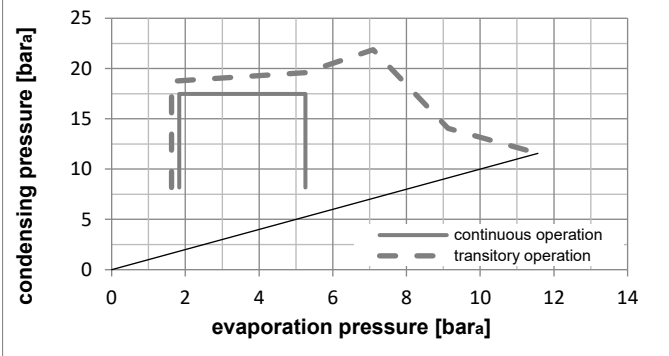
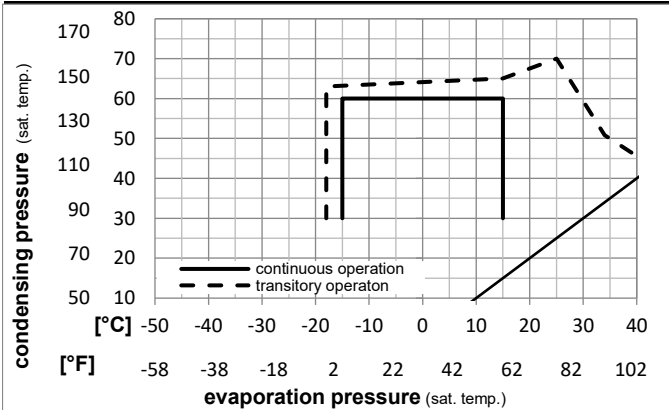


## Ambient/ machine room temperatures minimum /maximum

Ambient temperature range:	10 - 43°C / 50 - 110°F
Machine room temperature range:	10 - 48°C / 50 - 119°F
Compressor cooling:	fan 3m/s

## Operation Limits

## Operation pressure range



## Components

a2	relay	117U6000
c	start capacitor (60μF)	117U5014
d	cord relief	103N1010
b	plastic cover	103N2011

### Model

Designation **TL4GH** **220-240V/50Hz** Conf. 2 Sales code: **102G4455**

### Optimization + standard conditions

R513A, 220V/50Hz, CSIR, fan 3m/s, VDE, UL, CCC

	Evaporating pressure (saturation temperature)				Cooling capacity			COP	EER	P1	Power consumption		Ref. mass flow	
	pe	pc	RGT	Tliq	[W]	[Btu/h]	[kcal/h]				l	m		
[°C]	[°C]	[°C]	[°C]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[kcal/Wh]	[W]	[A]	[kg/h]		
-23	54	32	32	77,4	264	66,6	0,81	2,76	0,70	95,6	0,89	1,67	ASHRAE LBP	
[°F]														
-10	130	90	90											
-25	55	32	55	51,1	175	44,0	0,55	1,88	0,47	93,1	0,88	1,40	cecomaf LBP	
[°F]														
-13	131	90	131											
-35	40	20	40	35,4	121	30,4	0,51	1,74	0,44	69,5	0,80	0,87	EN12900 LBP	
[°F]														
-31	104	68	104											
-23	49	4,4	49	66,6	227	57,3	0,72	2,46	0,62	92,5	0,88	2,04	ARI540 LBP	
[°F]														
-10	120	40	120											
-23	41	32	32	103,2	352	88,8	1,15	3,92	0,99	89,9	0,87	2,22	AHAM LBP	
[°F]														
-9,9994	105	90	90											
-35	45	32	45	25,0	85	21,5	0,35	1,19	0,30	72,1	0,81	0,61	opt	
[°F]														
-31	113	90	113											

### Performance tables

R513A, 220V/50Hz, CSIR, fan 3m/s, VDE, UL, CCC

	pe		Cooling capacity			COP	EER	P1	l	m	
	[°C]	[°F]	[W]	[Btu/h]	[kcal/h]						
[°C / °F]	-15	5	139,2	475	119,8	1,28	4,36	1,10	109,1	0,94	3,41
cond. pressure	-10	14	179,6	613	154,5	1,49	5,08	1,28	120,7	0,98	4,41
pc= 45/113	-5	23	226,6	774	195,0	1,71	5,85	1,48	132,2	1,02	5,59
return gas temp.	0	32	281,2	960	242,0	1,97	6,72	1,69	143,0	1,06	6,98
RGT= 32/90	5	41	344,6	1177	296,5	2,26	7,71	1,94	152,7	1,10	8,59
liquid temp	10	50	417,5	1426	359,3	2,60	8,87	2,24	160,7	1,13	10,48
Tliq= 45/113	15	59	501,1	1711	431,3	3,01	10,28	2,59	166,5	1,15	12,68
[°C / °F]	-15	5	109,8	375	94,5	0,97	3,30	0,83	113,6	0,96	3,02
cond. pressure	-10	14	145,7	498	125,4	1,16	3,96	1,00	125,8	1,00	4,03
pc= 55/131	-5	23	187,3	640	161,2	1,35	4,61	1,16	138,6	1,05	5,20
return gas temp	0	32	235,6	805	202,8	1,55	5,31	1,34	151,6	1,09	6,58
RGT= 32/90	5	41	291,6	996	250,9	1,78	6,07	1,53	164,1	1,14	8,19
liquid temp	10	50	356,2	1217	306,6	2,03	6,92	1,74	175,7	1,18	10,09
Tliq= 55/131	15	59	430,5	1470	370,5	2,32	7,91	1,99	185,8	1,22	12,30

## Model

Designation	<b>TL4GH</b>	<b>208-230V/60Hz</b>	<b>Conf. 3</b>	Sales code:	<b>102G4455</b>
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## Configuration

Motorconfiguration	CSIR	
Power supply (nominal)	208-230V/60Hz 1~	
Refrigerant	R134a	
Application	MBP+HBP	
Voltage range	198-254V	
Starting torque	HST	
Approvals	VDE	
	UL	SA3693
	CCC	

## Electrical accessories / wiring diagram

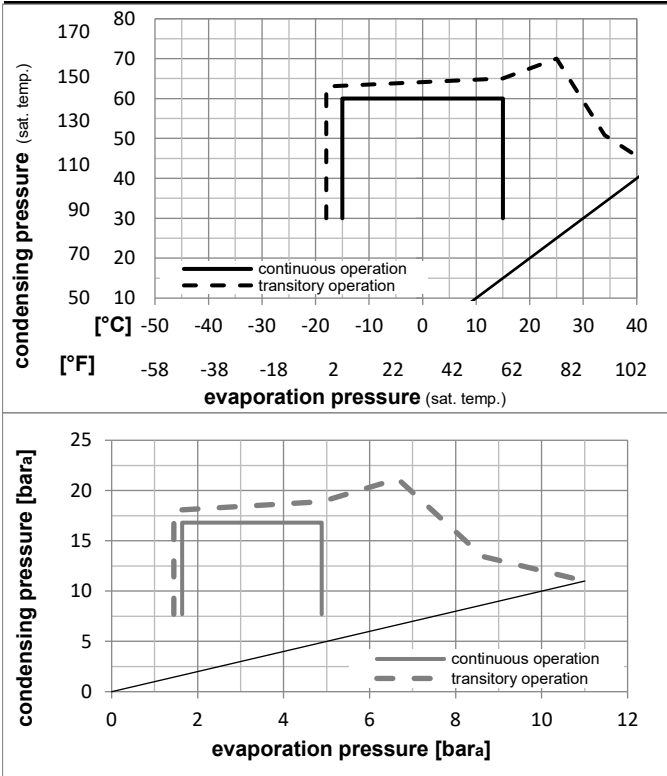


## Ambient/ machine room temperatures minimum /maximum

Ambient temperature range:	10 - 43°C / 50 - 110°F
Machine room temperature range:	10 - 48°C / 50 - 119°F
Compressor cooling:	fan 3m/s

## Operation Limits

## Operation pressure range



## Components

a2	relay	117U6000
c	start capacitor (60μF)	117U5014
d	cord relief	103N1010
b	plastic cover	103N2011



### Model

Designation **TL4GH** **208-230V/60Hz** Conf. 3 Sales code: **102G4455**

### Optimization + standard conditions

R134a, 230V/60Hz, CSIR, fan 3m/s, VDE, UL, CCC

		Evaporating pressure (saturation temperature)				Condensing pressure (saturation temperature)						Power consumption			
		Return gas temp.		Liquid temp.		Cooling capacity		COP	EER		Current consumption		Ref. mass flow		
		pe	pc	RGT	Tliq	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[kcal/Wh]	P1	I	m	
[°C]	[°F]	[°C]	[°F]	[°C]	[°F]							[W]	[A]	[kg/h]	
[°C]	-23	54	32	32	76,6	262	66,0	0,76	2,61	0,66	100,4	0,79	1,49	ASHRAE LBP	
[°F]	-10	130	90	90											
[°C]	-25	55	32	55	49,6	169	42,7	0,51	1,75	0,44	97,0	0,77	1,19	cecomaf LBP	
[°F]	-13	131	90	131											
[°C]	-35	40	20	40	48,7	166	41,9	0,67	2,29	0,58	72,6	0,71	1,07	EN12900 LBP	
[°F]	-31	104	68	104											
[°C]	-23	49	4,4	49	79,1	270	68,1	0,81	2,75	0,69	98,2	0,79	2,09	ARI540 LBP	
[°F]	-10	120	40	120											
[°C]	-23	41	32	32	123,8	423	106,5	1,28	4,39	1,11	96,3	0,80	2,40	AHAM LBP	
[°F]	-10	105	90	90											
[°C]	-35	45	32	45	33,9	116	29,1	0,45	1,55	0,39	74,5	0,70	0,73	opt	
[°F]	-31	113	90	113											

### Performance tables

R134a, 230V/60Hz, CSIR, fan 3m/s, VDE, UL, CCC

	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]	-15	5	162,3	554	139,7	1,36	4,64	1,17	119,5	0,87	3,54
cond. pressure	-10	14	207,1	707	178,2	1,54	5,26	1,33	134,5	0,92	4,53
pc= 45/113	-5	23	259,4	886	223,2	1,73	5,90	1,49	150,2	0,98	5,70
return gas temp.	0	32	320,3	1094	275,7	1,93	6,58	1,66	166,2	1,04	7,08
RGT= 32/90	5	41	391,0	1335	336,5	2,15	7,33	1,85	182,2	1,10	8,71
liquid temp	10	50	472,8	1615	406,9	2,39	8,17	2,06	197,7	1,16	10,61
Tliq= 45/113	15	59	566,8	1936	487,8	2,67	9,11	2,30	212,4	1,22	12,84
[°C / °F]	-15	5	118,2	404	101,8	0,96	3,29	0,83	122,8	0,89	2,85
cond. pressure	-10	14	159,9	546	137,6	1,15	3,94	0,99	138,7	0,95	3,87
pc= 55/131	-5	23	208,0	710	179,0	1,33	4,55	1,15	156,0	1,02	5,06
return gas temp	0	32	263,8	901	227,1	1,51	5,17	1,30	174,3	1,09	6,45
RGT= 32/90	5	41	328,5	1122	282,7	1,70	5,80	1,46	193,3	1,16	8,09
liquid temp	10	50	403,1	1377	346,9	1,90	6,48	1,63	212,5	1,23	10,02
Tliq= 55/131	15	59	489,0	1670	420,9	2,11	7,21	1,82	231,6	1,31	12,28

## Model

Designation	<b>TL4GH</b>	<b>208-230V/60Hz</b>	<b>Conf. 4</b>	Sales code:	<b>102G4455</b>
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## Configuration

Motorconfiguration	CSIR	
Power supply (nominal)	208-230V/60Hz 1~	
Refrigerant	R513A	
Application	MBP+HBP	
Voltage range	198-254V	
Starting torque	HST	
Approvals	VDE	
	UL	SA3693
	CCC	

## Electrical accessories / wiring diagram

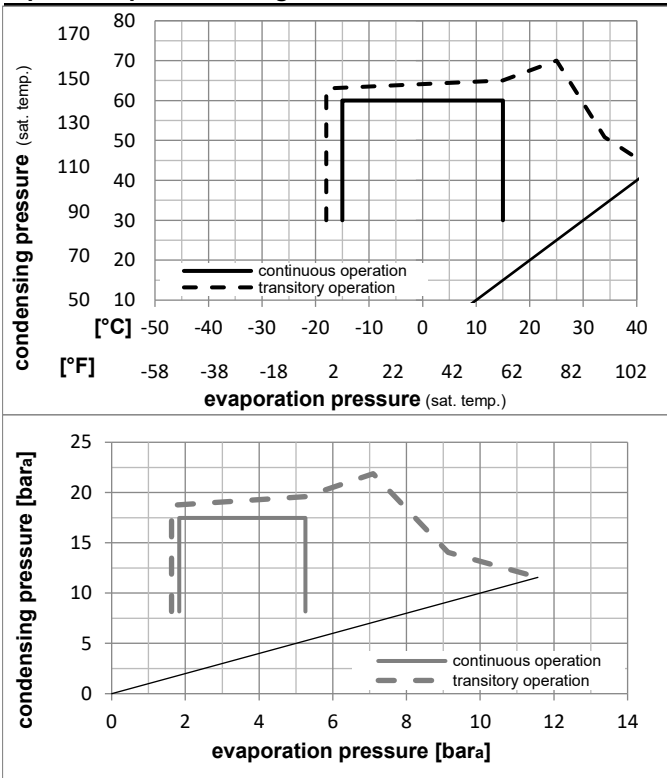


## Ambient/ machine room temperatures minimum /maximum

Ambient temperature range:	10 - 43°C / 50 - 110°F
Machine room temperature range:	10 - 48°C / 50 - 119°F
Compressor cooling:	fan 3m/s

## Operation Limits

## Operation pressure range



## Components

a2	relay	117U6000
c	start capacitor (60μF)	117U5014
d	cord relief	103N1010
b	plastic cover	103N2011

## Model

Designation	<b>TL4GH</b>	<b>208-230V/60Hz</b>	<b>Conf. 4</b>	Sales code:	<b>102G4455</b>
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## Optimization + standard conditions

R513A, 230V/60Hz, CSIR, fan 3m/s, VDE, UL, CCC

	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]						P1	I	m		
[°C]																	
[°F]																	
	-23	54	32	32	85,9	293	73,9	0,80	2,72	0,69	107,7	0,82	1,85				
	-9,9994	130	90	90													
	-25	55	32	55	54,5	186	46,9	0,52	1,78	0,45	104,2	0,80	1,49				
	-13	131	90	131													
	-35	40	20	40	56,2	192	48,4	0,73	2,50	0,63	76,7	0,70	1,39				
	-31	104	68	104													
	-23	49	4,4	49	84,0	287	72,3	0,80	2,73	0,69	104,9	0,81	2,57				
	-9,9994	120	40	120													
	-23	41	32	32	136,5	466	117,5	1,33	4,55	1,15	102,4	0,80	2,94				
	-9,9994	105	90	90													
	-35	45	32	45	40,2	137	34,6	0,51	1,73	0,44	79,1	0,71	0,98				
	-31	113	90	113													

## Performance tables

R513A, 230V/60Hz, CSIR, fan 3m/s, VDE, UL, CCC

	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]	-15	5	173,1	591	148,9	1,37	4,67	1,18	126,7	0,89	4,24
cond. pressure	-10	14	218,7	747	188,2	1,54	5,26	1,33	142,0	0,95	5,38
pc= 45/113	-5	23	271,5	927	233,7	1,72	5,87	1,48	157,9	1,01	6,70
return gas temp.	0	32	332,7	1136	286,4	1,91	6,53	1,65	174,0	1,08	8,25
RGT= 32/90	5	41	403,5	1378	347,2	2,12	7,25	1,83	190,0	1,14	10,06
liquid temp	10	50	484,8	1656	417,3	2,36	8,06	2,03	205,4	1,20	12,17
Tliq= 45/113	15	59	578,0	1974	497,4	2,63	8,98	2,26	219,9	1,26	14,62
[°C / °F]	-15	5	124,5	425	107,1	0,95	3,25	0,82	130,8	0,91	3,43
cond. pressure	-10	14	166,4	568	143,2	1,13	3,87	0,97	146,9	0,97	4,60
pc= 55/131	-5	23	214,4	732	184,5	1,31	4,46	1,12	164,3	1,04	5,96
return gas temp.	0	32	269,7	921	232,1	1,48	5,04	1,27	182,7	1,11	7,53
RGT= 32/90	5	41	333,3	1138	286,8	1,65	5,65	1,42	201,6	1,18	9,37
liquid temp	10	50	406,5	1388	349,8	1,84	6,29	1,58	220,8	1,26	11,51
Tliq= 55/131	15	59	490,3	1674	421,9	2,04	6,98	1,76	239,8	1,33	14,00



# TL Compressors





## Service/Repair – R600a, R290



8545

## Brazing on Suction Connectors (Direct Intake)

representative image



**! max. 150°C/302°F !  
at socket**  
brazing solder: phosphor (LP7) or silver

Refer to Product Bulletin:  
**Brazing on Suction Connectors  
(Compressors with Direct Suction Intake)**

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