Please read these instructions carefully as they will enable you to get maximum efficiency and reliability from your new Calorex Dehumidifier.

Technical Manual

DH/TTW 75/110

(SD405452 Iss 10)
09/06/09

HEALTH AND SAFETY WARNING
As the dehumidifier embodies electrical and rotational equipment, ONLY competent persons should carry out any work on this type of machine (see warranty).

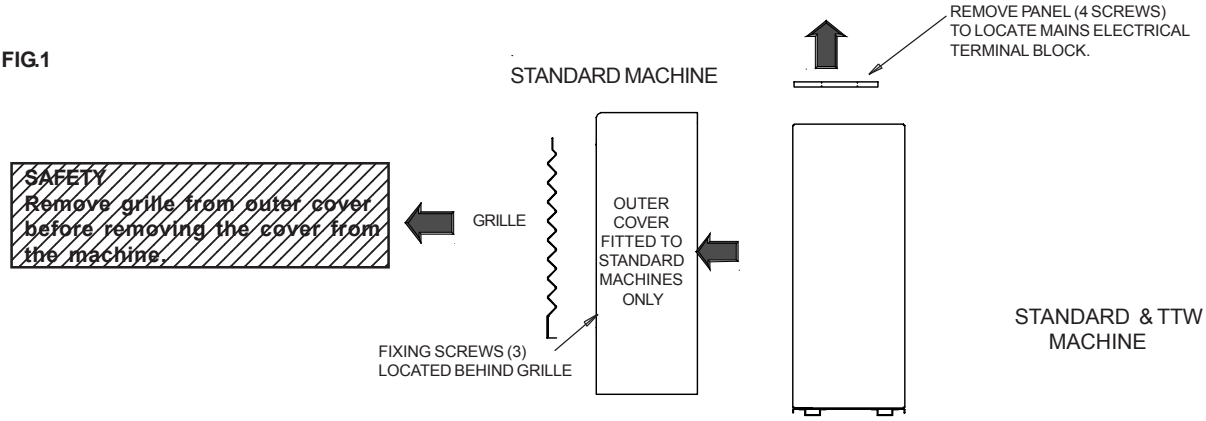
CONTENTS

SECTION 1.0 INSTALLATION INSTRUCTIONS/ USER CHECK LIST.

HEALTH & SAFETY WARNING.

As the Heat Pump contains electrical and rotational equipment , it is recommended that ONLY competent persons carry out any work on this type of machine (see warranty). ISOLATE ELECTRICALLY BEFORE ENTERING MACHINE OR REMOVING PANELS.

FIG.1



INSTALLATION - MODEL DH75/110

1. Remove machine from packaging and set on a level surface. Check that machine is level both vertically and horizontally.
2. Remove covers as shown in FIG.1 relative to machine type installed.
3. Electrical supply to unit must be sized according to the data on serial number label paying special attention to I.E.E. regulations latest edition regarding the special conditions governing electrical supply to machines in potentially damp areas (DH75/110 are IP45).
4. The electrical supply should be connected to the terminal block mounted inside the electrical box found in the top corner of the machine, see fig1, 2 & 4.

Wires to be connected as follows :- Brown/Red to Live, Blue/Black - to Neutral, and Earth to stud provided.

5. Fan mode switch can be set to cycle fan, then when Hygrostat senses demand, but should be set to continuous to promote good air circulation and reduce condensation. Note that on models fitted with LPHW and or remote Hygrostat the fans will start automatically whenever there is an air heating or dehumidification demand. During defrost the fans will stop. (Fan cycle not recommended for TTW machines with humidistat only).

Set Fan Speed switch to 'High' for maximum duty, 'Low' for minimum sound.

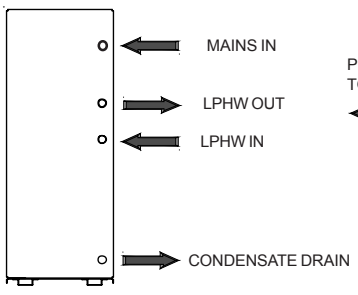
6. Locate drain, 15mm compression fitting, on side of unit and run it away to waste as preferred. A single hole is provided in the side of the unit. The drain is factory fitted to this hole. (In TTW machines there is an alternate position, see drawings).

MODELS WITH LPHW FITTED

7. Connect water circuit piping to the 22mm stubs provided on the side of the machine as per diagram.
8. It is recomended that isolation valves are fitted to enable isolation of the machine in the event of service.

The Circulating Pump must be sized to take into account the design flow rate of the machine plus the water system resistance (Flow Rate 9.6 L/min Pressure Drop 2.8 m hd).

FIG.2



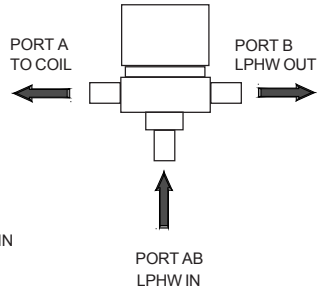
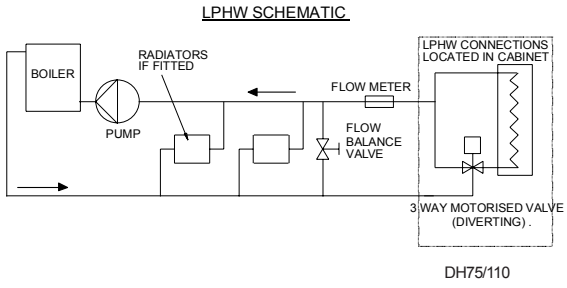


FIG.3



CONNECTIONS FOR REMOTE 12V AIR THERMOSTAT & OPTIONAL HYGROSTAT.

FIG.4

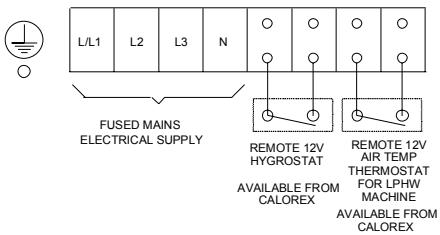
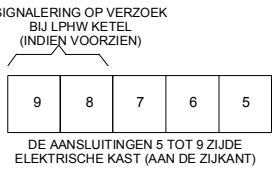


FIG.5



9. Connect remote Hygrostat as shown, ensure that knob on MACHINE HYGROSTAT is set FULLY ANTICLOCKWISE.
10. When LPHW coil & valve are fitted, a remote air temperature thermostat must be connected as shown.

USER CHECK LIST

OPERATION
A normal hygrostat setting (50-60%) is marked on the console.
Minimum air temperature 5°C.
Note :- The fan stops during defrost.
The fan will start automatically, as required, on machines fitted with LPHW and or remote Hygrostat (fan control switch set to cycle).

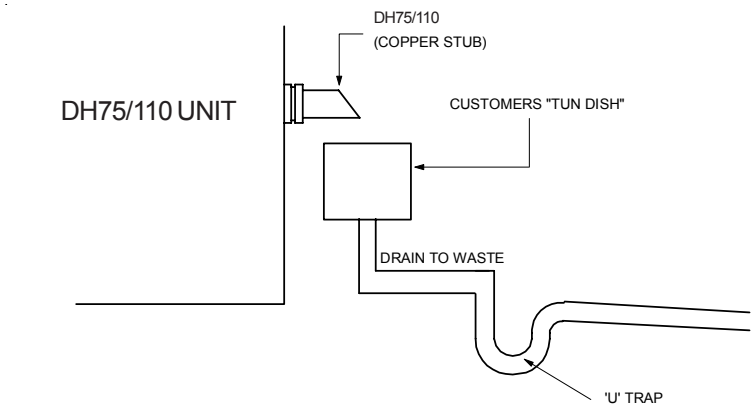
OPERATING
a. Ensure air inlets/outlets and filters are kept clear and clean. Filters are located behind inlet grille.
b. Wipe clean with damp cloth or cleaning fluid suitable for painted surfaces.
Note. The Reply Paid Warranty Registration Card must be returned to ensure the correct warranty is given. If you do not find a Registration Card with your machine, please contact Calorex Service Department or your dealer giving your name, address and serial number of your machine, a card will then be sent to you.

FILTER CLEANING
The filter can be washed in warm, soapy water, rinsed and shaken dry before replacement. Frequency of cleaning depends on user although no more than two months should elapse between cleaning. The dehumidifier must not be run without a filter fitted.

MACHINE NOT RUNNING AT ALL.
CHECK THE FOLLOWING.
1. Is supply switched on?
2. Is supply fuse healthy?.
3. Turn Hygrostat knob fully clockwise.
4. Check air inlet and outlet for obstructions and that the filter is not blocked.
5. Check fault lamp - if illuminated reset the HP and LP switches (see control panel layout on page 4).
6. If, after carrying out the above and waiting 30 mins, the machine does not start, telephone for service.

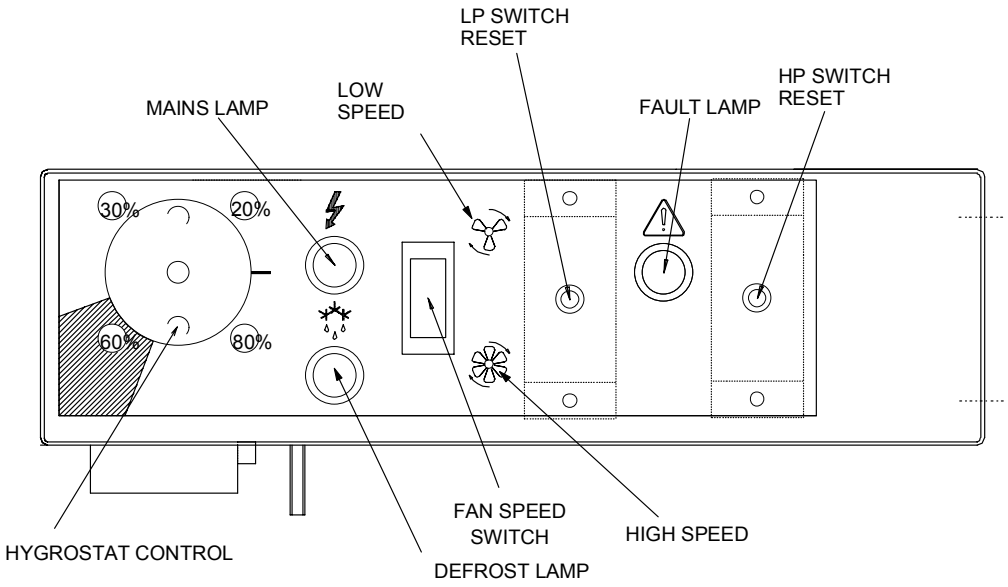
MACHINE FAN ONLY RUNNING
7. Turn Hygrostat knob fully clockwise.
8. Check air inlet and outlet for obstructions and that filter is not blocked.
9. Check that HP and LP switch are reset,(see control panel layout on page 4) if after 30 mins the machine has not restarted, telephone for service.

WATER LEAKING FROM BASE OF UNIT
10. Check connection from machine to drain for blockages and clear accordingly. Check fall is adequate.
11. Check that machine is level both vertically and horizontally.
12. Check that “tun dish”, if fitted, is not blocked (see below).
The user check list should be carried out before initiating a service call. Do not attempt to interfere with any internal control settings as these have been factory calibrated and sealed.
If in doubt or if advice is required, contact Calorex Service Department. Telephone (01621)857171 or 856611.



SECTION 2.0 CONTROL LAYOUT & LPHW OPERATION.

SECTION 2.1 CONTROL LAYOUT



SECTION 2.2 LPHW OPERATION

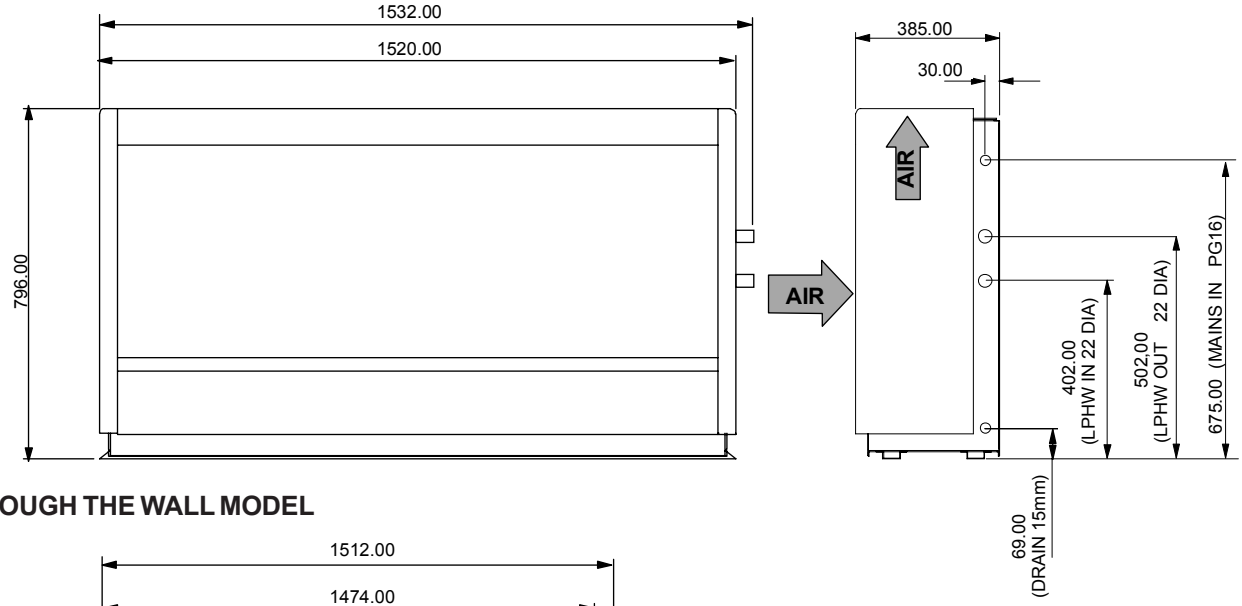
The 3 way, motorised, diverting valve fitted to machines with the LPHW option is operated by a remote 12V AC air temperature thermostat (available from Calorex).

When the valve is energised the flow is through the LPHW coil.
When the valve is unenergised the flow is diverted.

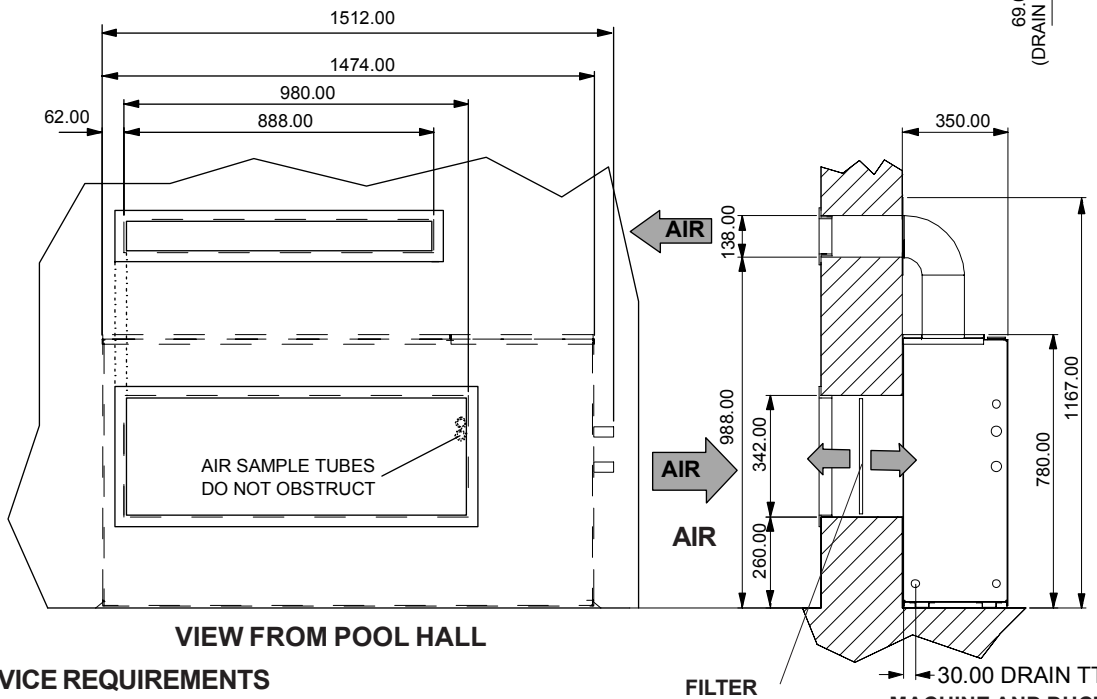
NOTE :- When the fan switch is set to cycle and the fan is not running, a demand on the LPHW valve will cause the fan to automatically start.

SECTION 3.0 MACHINE DIMENSIONS

STANDARD MACHINE WITH COVER



THROUGH THE WALL MODEL

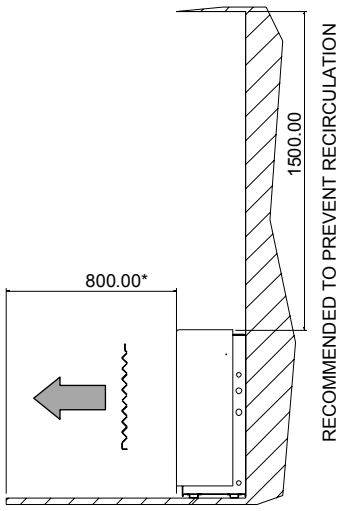


VIEW FROM POOL HALL

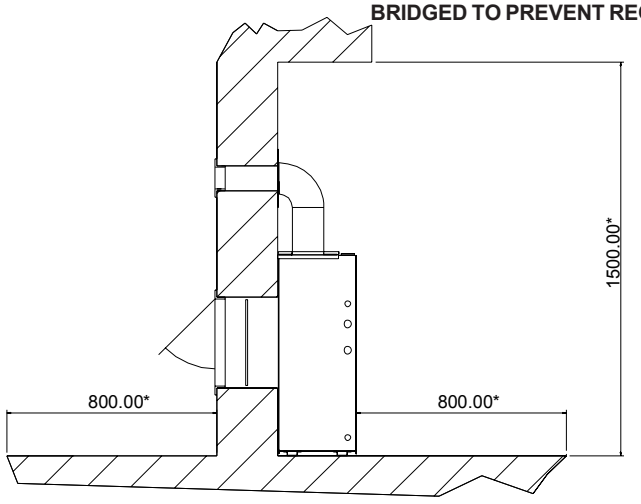
MACHINE AND DUCT MUST BE SEALED TO WALL AND ALL CAVITIES BRIDGED TO PREVENT RECIRCULATION

SERVICE REQUIREMENTS

*** DIMENSIONS MARKED THUS ARE RECOMMENDED FOR SERVICE ACCESS**



STANDARD MACHINE WITH COVER



THROUGH THE WALL MODEL

SECTION 4.0 DATA SHEET.

MODEL		DH75AX	DH110AX	DH110BX	TTW75AX	TTW110AX	TTW110BX
DUTY							
DEHUMIDIFICATION	L/hr	3,6	4,5	4,5	3,6	4,5	4,5
AIR HEATING (SENSIBLE) DEHUMIDIFIER ONLY	kW	4,7	6,4	6,4	4,7	6,4	6,4
AIR HEATING (SENSIBLE) DEHUMIDIFIER & LPHW	kW	11,3	12,2	12,2	11,3	12,2	12,2
AIR HEATING (SENSIBLE) LPHW ONLY	kW	8,9	8,9	8,9	8,9	8,9	8,9
NOMINAL POWER CONSUMED							
FAN ONLY	kW	0,16	0,16	0,16	0,16	0,16	0,16
COMPRESSOR AND FAN	kW	1,46	2,12	1,94	1,46	2,12	1,94
ELECTRICAL DATA							
ELECTRICAL SUPPLY		230V ~1N 50Hz	230V ~1N 50Hz	400V ~3N 50Hz	230V ~1N 50Hz	230V ~1N 50Hz	400V ~3N 50Hz
MAX FUSE RATING	AMP	13	20	10	13	20	10
NOMINAL RUNNING	AMP	6,4	9,3	4,2	6,4	9,3	4,2
FULL LOAD AMPS (MIN SUPPLY CAPACITY)	AMP	9,5	12	5,5	9,5	12	5,5
COMPRESSOR LRA	AMP	55	66	30	55	66	30
AIR DATA							
AIR FLOW (NOMINAL)	m³/h	1180	1180	1180	1180	1180	1180
WATER DATA							
LPHW FLOW RATE	L/min	9,6	9,6	9,6	9,6	9,6	9,6
LPHW PRESSURE	m hd	2,80	2,80	2,80	2,80	2,80	2,80
LPHW COIL VOLUME	L	0,63	0,63	0,63	0,63	0,63	0,63
GENERAL DATA							
HERMETIC SYSTEM							
REFRIGERANT kg	R407c	2	2	2	2	2	2
SOUND PRESSURE LEVEL @ 1m	dB(A)	53	53	53	53	53	53
DIMENSIONS							
WIDTH (UNPACKED	mm	1520	1520	1520	1474	1474	1474
DEPTH (UNPACKED	mm	385	385	385	350	350	350
HEIGHT (UNPACKED	mm	796	796	796	1167	1167	1167
WEIGHT (UNPACKED STD/LPHW	kg	143/147	144/148	144/148	143/147	144/148	143/147
WIDTH (PACKED)	mm	1575	1575	1575	1575	1575	1575
DEPTH (PACKED)	mm	420	420	420	420	420	420
HEIGHT (PACKED)	mm	932	932	932	932	932	932
WEIGHT (PACKED) STD/LPHW	kg	163/167	164/168	164/168	163/167	164/168	163/167

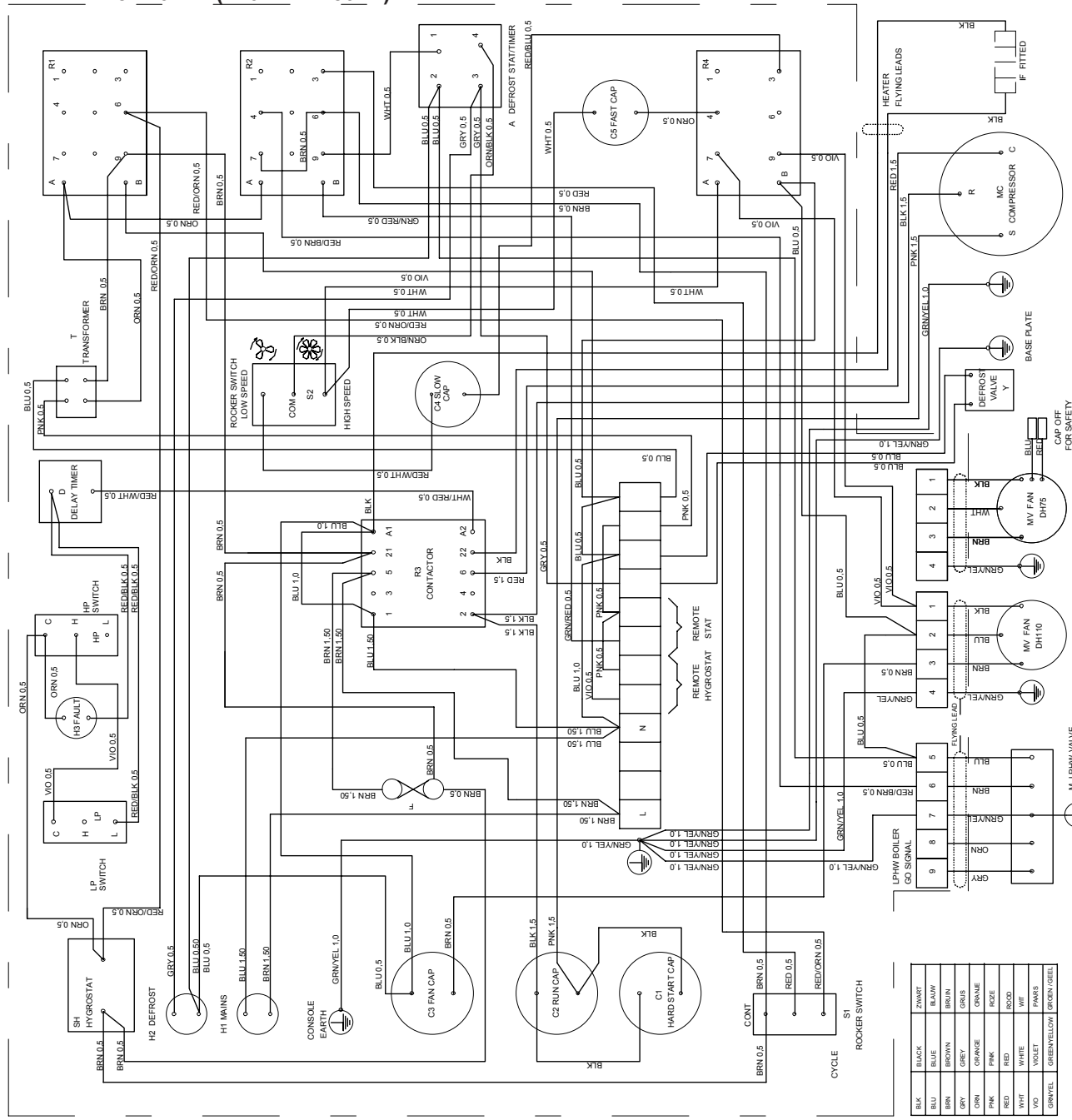
NOTES:-

a) These performance figures are based on air @ 30º C and 60% RH & pool water @ 28º C, boiler water at 80º C.
b) Hygrostat adjustable from 20% to 80%RH.
c) Minimum air temperature on standard models 5º C, Maximum air temperature on standard models 40º C.
d) R407c Global warming potential (GWP) 1700.

SECTION 5.0 WIRING DIAGRAMS

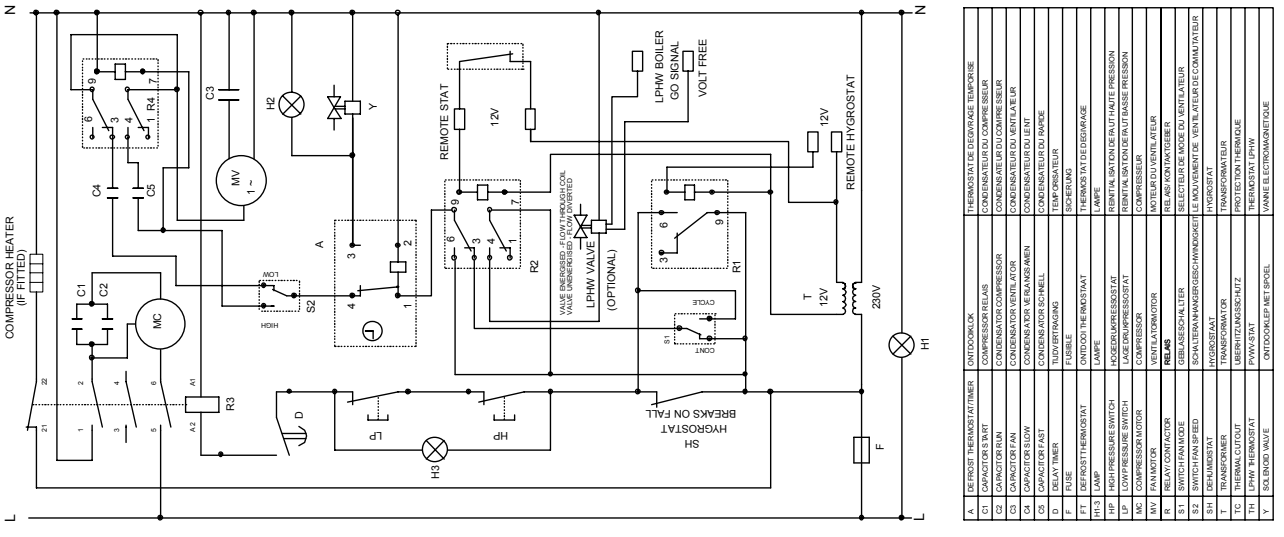
DH/TTW 75/110 AX (240V ~ 1N 50Hz)

DRG No D402950



BLK	BLACK
BLU	BLUE
BRN	BROWN
GRY	GREY
ORN	ORANGE
PNK	PINK
RED	RED
WHT	WHITE
VIO	VIOLET
GRN/YEL	GRIEN/YELLOW

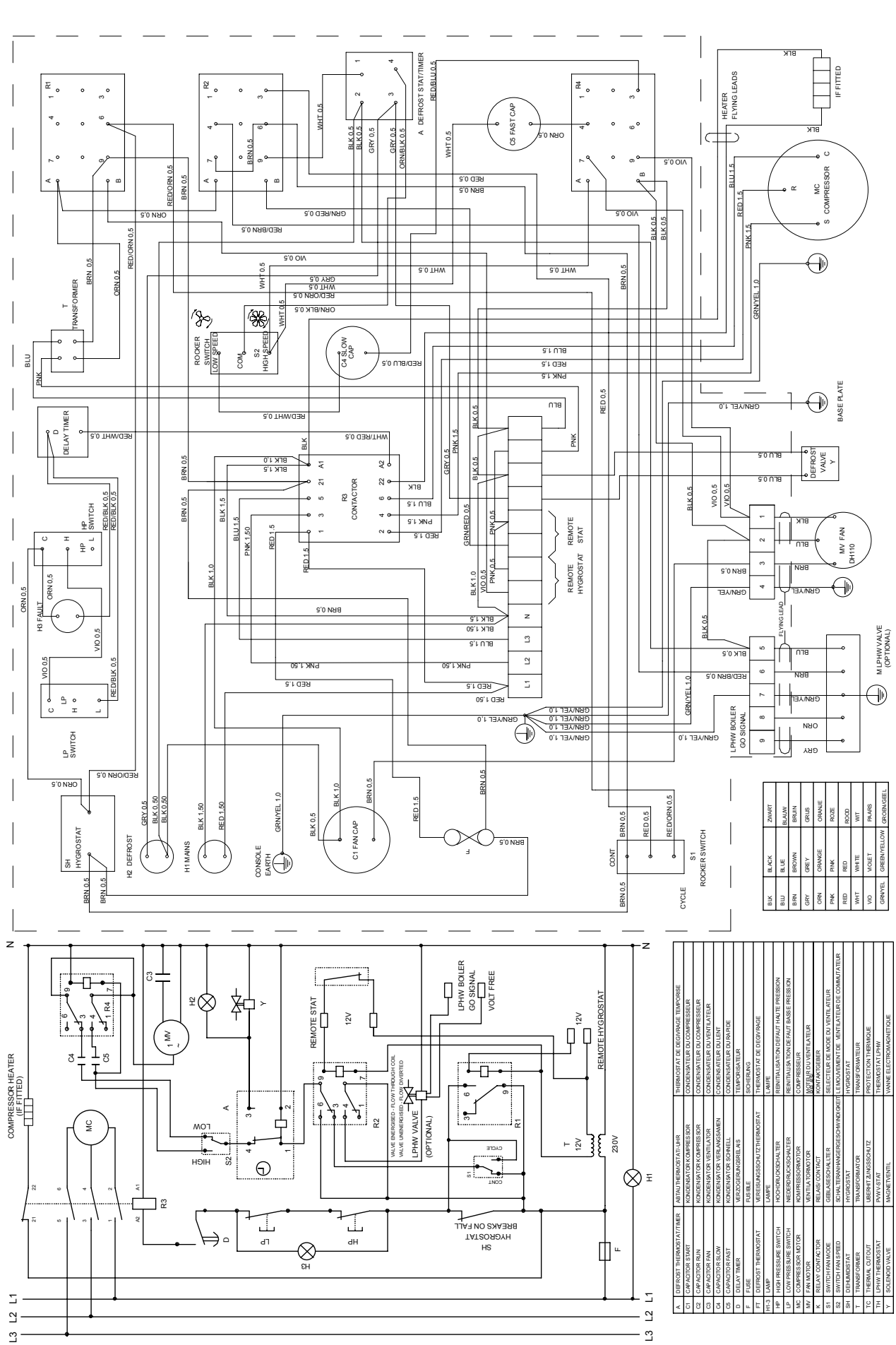
ZWART	
BLAUW	
BRUIN	
GRIJS	
ORANJE	
ROZE	
ROOD	
WIT	
PAARS	
GROEN /GEEL	



A	DEFROST THERMOSTAT/TIMER	ONTDOOIKLOK
C1	CAPACITOR START	COMPRESSOR RELAIS
C2	CAPACITOR RUN	CONDENSATOR COMPRESSOR
C3	CAPACITOR FAN	CONDENSATOR VENTILATOR
C4	CAPACITOR SLOW	CONDENSATOR VEREANGEMEEN
C5	CAPACITOR FAST	CONDENSATOR SCHNELL
D	DELAY TIMER	TIJDVERTRAGING
F	FUSE	ZEKERING
FT1	DEFROST THERMOSTAT	ONTDOOI THERMOSTAAT
H1-3	LAMP	LAMPE
HP	HIGH PRESSURE SWITCH	HOGERDRUKPRESSOSTAT
LP	LOW PRESSURE SWITCH	LAGE DRUKPRESSOSTAT
MC	COMPRESSOR MOTOR	COMPRESSOR
MV	FAN MOTOR	VENTILATORMOTOR
R	RELAY/CONTACTOR	RELAIS/CONTACTGEVER
S1	SWITCH-FAN MODE	GEBLAASSCHAKELTER
S2	SWITCH-FAN SPEED	SCHAKELEBATMAKERGESCHWINDIGHEID
SH	DEFROSTSTAT	HYGROSTAAT
T	TRANSFORMER	TRANSFORMATEUR
TC	THERMAL CUTOUT	UBERHITZUNGSSCHUTZ
TH	LPHW THERMOSTAT	PWW-STAT
Y	SOLENOID VALVE	ONTDOOKLEP MET SPOEL

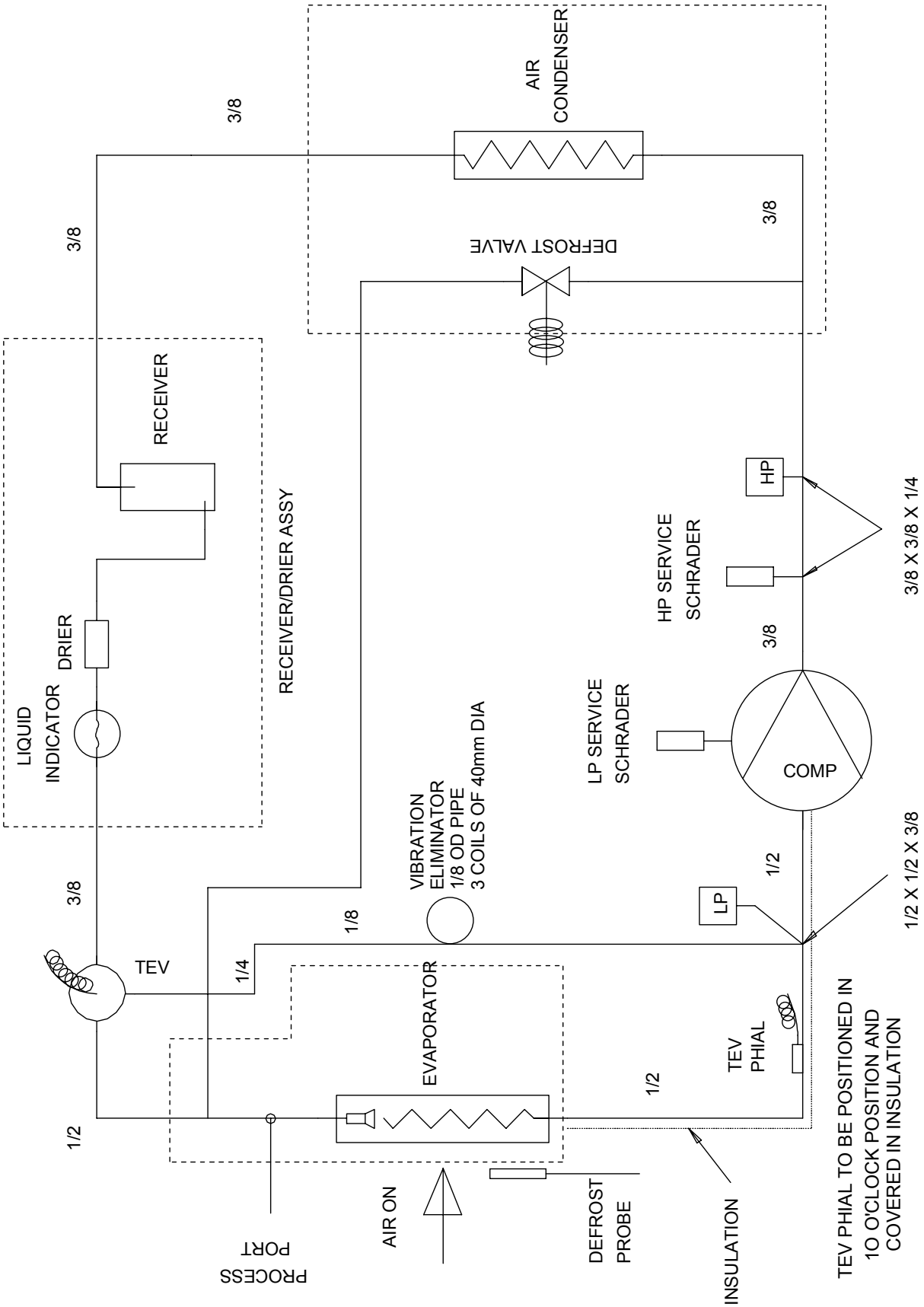
THERMOSTAT DE DEGIVRAGE TEMPORISE	
CONDENSATEUR DU COMPRESSEUR	
CONDENSATEUR DU COMPRESSEUR	
CONDENSATEUR DU VENTILATEUR	
CONDENSATEUR DU LENT	
CONDENSATEUR DU RAPIDE	
TEMPORISATEUR	
SECTEUR/240	
THERMOSTAT DE DEGIVRAGE	
LAMPE	
REMOTTAKSTON DE RUIT HAUTE PRESSION	
REMOTTAKSTON DE RUIT BASSE PRESSION	
COMPRESSEUR	
MOTEUR DU VENTILATEUR	
RELAIS/ CONTACTGEVER	
SELECTEUR DE MODE DU VENTILATEUR	
LE MOUVEMENT DE VENTILATEUR DE COMMUTATEUR	
HYGROSTAT	
TRANSFORMATEUR	
PROTECTION THERMIQUE	
THERMOSTAT LPHW	
VANNE ELECTROMAGNETIQUE	

DH/TTW 110 BX (400V ~ 3N 50Hz)

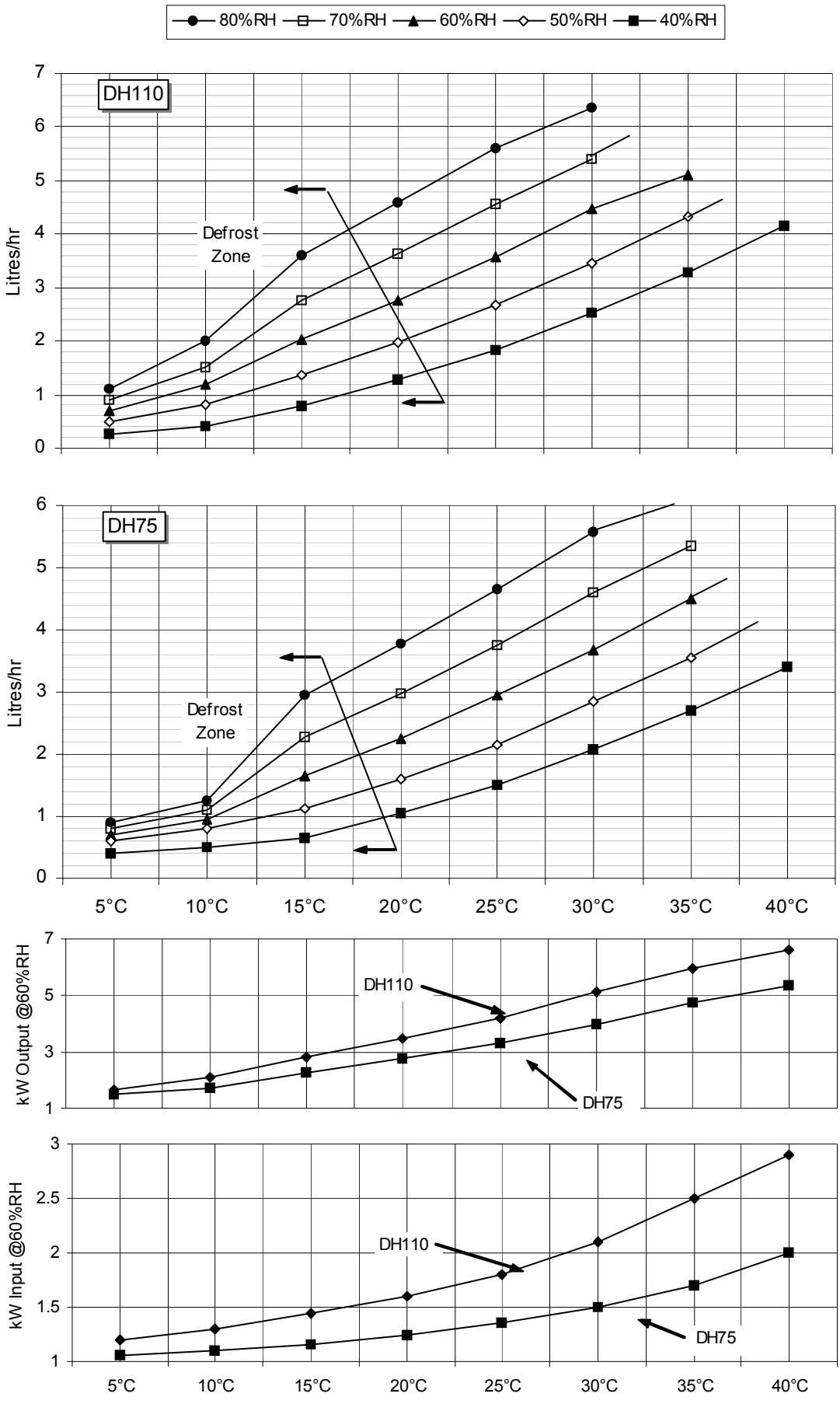


A	DEFROST THERMOSTAT/TIMER	ABTAU THERMOSTAT/-UHR	THERMOSTAT DE DEGIVRAGE TEMPORISE
C1	CAPACITOR START	KONDENSATOR KOMPRESSOR	CONDENSATEUR DU COMPRESSEUR
C2	CAPACITOR RUN	KONDENSATOR KOMPRESSOR	CONDENSATEUR DU COMPRESSEUR
C3	CAPACITOR FAN	KONDENSATOR VENTILATOR	CONDENSATEUR DU VENTILATEUR
C4	CAPACITOR SLOW	KONDENSATOR VERLANGSAMEN	CONDENSATEUR DU LENT
C5	CAPACITOR FAST	KONDENSATOR SCHNELL	CONDENSATEUR DU RAPIDE
D	DELAY TIMER	VERZÖGERUNGSRELAIS	TEMPORISATEUR
F	FUSE	FUSIBLE	SICHERUNG
FT	DEFROST THERMOSTAT	VERFEISUNGSSCHUTZTHERMOSTAT	THERMOSTAT DE DEGIVRAGE
H1-3	LAMP	LAMPE	LAMPE
HP	HIGH PRESSURE SWITCH	HOCHDRUCKSCHALTER	REINITIALISATION DEFAUT HAUTE PRESSION
LP	LOW PRESSURE SWITCH	NIEDERDRUCKSCHALTER	REINITIALISATION DEFAUT BASSE PRESSION
MC	COMPRESSOR MOTOR	KOMPRESSORMOTOR	COMPRESSEUR
MV	FAN MOTOR	VENTILATORMOTOR	MOTEUR DU VENTILATEUR
K	RELAY CONTACT	RELAIS CONTACT	KONTAKTGEBER
S1	SWITCH FAN MODE	GEBLÄSESCHALTER	SELECTEUR DE MODE DU VENTILATEUR
S2	SWITCH FAN SPEED	SCHALTERANHANGERGESCHWINDIGKEIT	LEMOUVEMENT DE VENTILATEUR DE COMMUTATEUR
SH	DEHUMIDISTAT	HYGROSTAT	HYGROSTAT
T	TRANSFORMER	TRANSFORMATOR	TRANSFORMATEUR
TC	THERMAL CUTOUT	ÜBERHITZUNGSSCHUTZ	PROTECTION THERMIQUE
TH	LPHW THERMOSTAT	PVWV-STAT	THERMOSTAT LPHW
Y	SOLENOID VALVE	MAGNETVENTIL	VANNE ELECTROMAGNETIQUE

SECTION 6.0 REFRIGERATION CIRCUIT

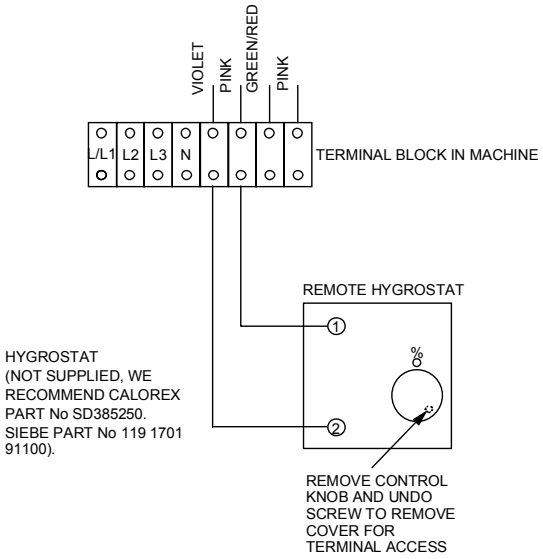


SECTION 7.0 PERFORMANCE GRAPHS (FANS AT FULL SPEED)



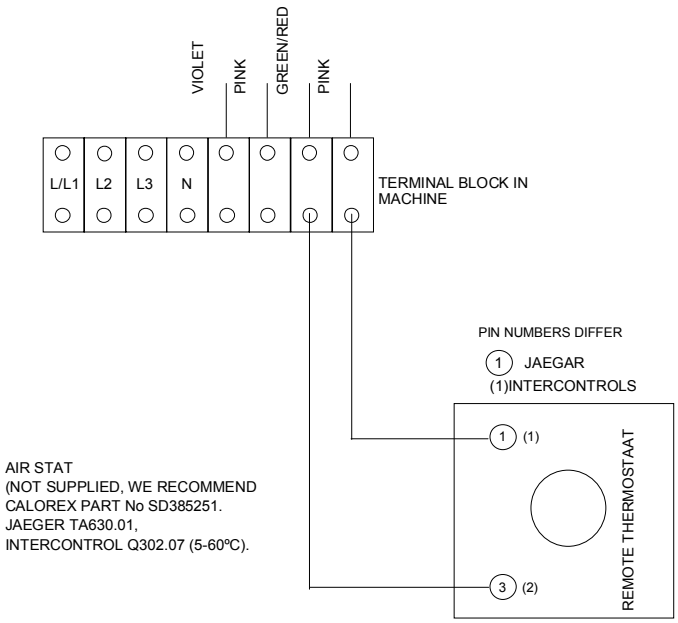
SECTION 9.0 OPTIONAL ITEMS, REMOTE CONTROLS.
REMOTE HYGROSTAT INSTALLATION INSTRUCTIONS.

Isolate machine from mains supply before commencing with installation.
Remove cover of unit for access to electric box mains supply terminal block.
Terminate remote Hygrostat to unit with minimum 0.5mm² cable as shown below.



REMOTE THERMOSTAT INSTALLATION
MUST BE FITTED TO LPHW VERSIONS

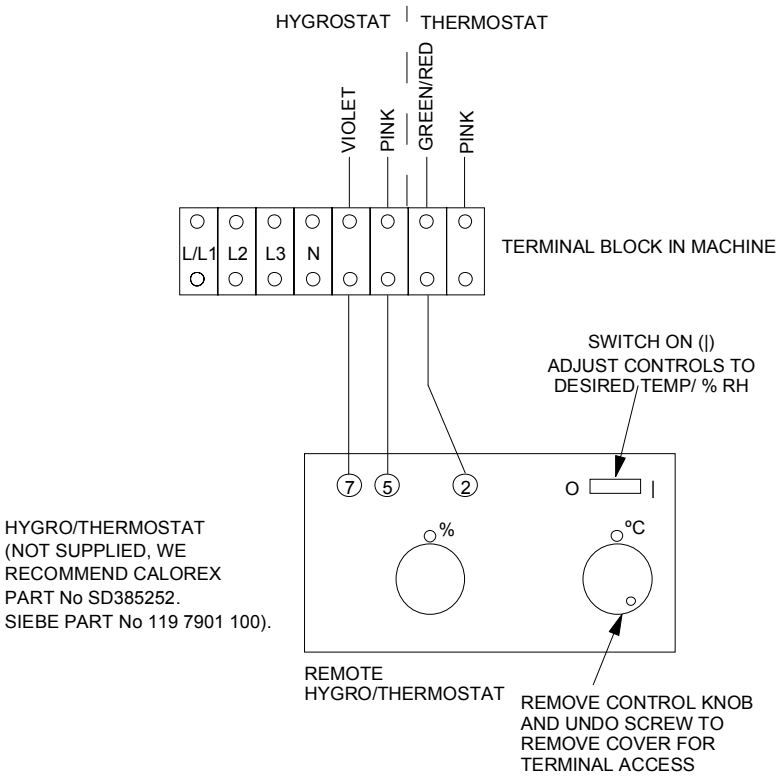
Isolate machine from mains supply before commencing with installation.
Remove cover of unit for access to electric box mains supply terminal block.
Terminate remote Thermostat to unit with minimum 0.5mm² cable as shown below.



REMOTE HYGRO/THERMOSTAT INSTALLATION INSTRUCTIONS.

Isolate machine from mains supply before commencing with installation.
Remove cover of unit for access to electric box mains supply terminal block.
Terminate remote Hygro/Thermostat to unit with minimum 0.5mm² cable as shown below.

IMPORTANT NOTE :- Set existing Hygrostat in machine to fully anti-clockwise ie 80% Dehumidification.



SECTION 10.0 WARRANTY CONDITIONS

The following exclusions apply to the Warranty given by Calorex Heat Pumps Ltd.
No claims will be accepted if :-

1. The dehumidifier is incorrectly sized for the application.

2. The dehumidifier is installed in any way that is not in accordance with the current procedures as defined by Calorex Heat Pumps Ltd.

3. The dehumidifier has been worked upon or is adjusted by anyone other than a person authorised to do so by Calorex Heat Pumps Ltd.

4. The air flow through the machine is outside the specified limits.

5. The water flow through the machine is outside the specified limits. (LPHW units).

6. The electrical supply is insufficient or in any way incorrect.

7. The dehumidifier has suffered frost damage.

IF IN DOUBT PLEASE ASK.

Note:- The Reply Paid Warranty Registration Card must be returned, to ensure that the correct warranty is given.If you do not find a Registration Card with your Dehumidifier please contact the Calorex Service Department giving your name, address and serial number of your Dehumidifier. A card will be sent to you for completion.

Email service@calorex.com

Web Site http://www.calorex.com

PHONE 01621 857171

FAX 01621 850871

Please give MODEL NUMBER and SERIAL NUMBER of your Dehumidifier when making technical or service enquiries. This will assist in correct diagnosis and ensure service can provide with a minimum delay.