Model:
BK/RK
BF/IF/RF

202-070726

DK   Indholdsfortegnelse

SE   Innehåll

UK   Contents

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Vigtige informationer

1. For at få det fulde udbytte af skabet, bør De læse denne brugsvejledning igennem.
2. Det er brugers ansvar at anvende skabet i henhold til instruktionerne.
3. Kontakt omgående forhandleren, såfremt der opstår fejl ved skabet.
4. Skabet bør anbringes i et tørt og tilstrækkeligt ventileret rum.
5. Skabet bør ikke placeres i nærheden af varmekilder eller direkte sollys.
6. Bemærk at alle elektriske apparater kan medføre farer.
7. Opbevar ikke eksplosionsfarlige stoffer, f.eks. gas, benzin, æter og lignende.
8. Der er ikke brugt asbest eller CFC i konstruktionen.
9. Olien i kompressoren indeholder ikke PCB.

Udpakning og opstilling

Skabet leveres emballeret og på træpalle, fjern dette. Udvendige flader er monteret med beskyttelsesfolie, dette fjernes inden opstilling.

For korrekt funktion er det vigtigt at skabet står lige efter opstilling, hvis det har ben kan disse justeres i højde, se fig. 1.1.

Fig. 1.1
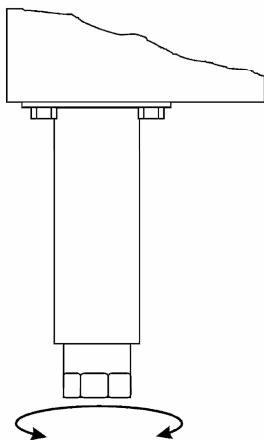
Hvis skabet indbygges, er man nødt til at tage hensyn til følgende:

1. Der skal være en passende luftsprække over skabet, mindst 15 cm., for at kølesystemet kan fungere tilfredsstillende.
2. Afstand til vægge o.lign. i hængselsiden skal være af passende størrelse, så man kan udskifte hylder og rengøre ved hængslet.

Vending af dør

HUSK dette skal foretages når døren er åben !
Åben toppen ved at fjerne markerede skruer i fig. 1.2, fjern låseskrue i dørfjeder, markeret i fig. 1.3, hængslet løsnes og døren løftes af.
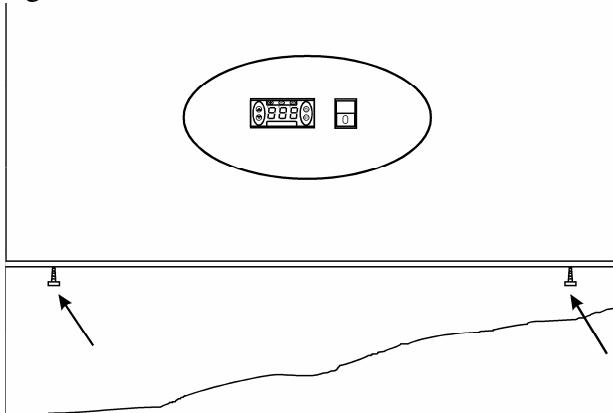
Fig. 1.2   Fig. 1.3
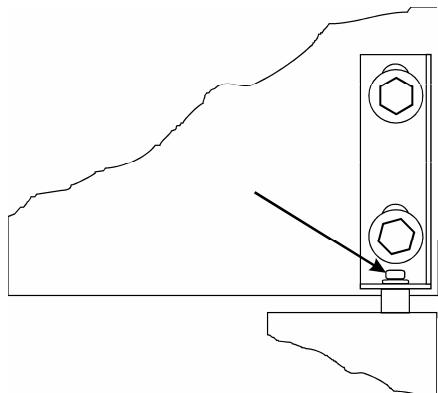
Døren ligges ned hvorefter dørfjederen og bund-bøsningen ombyttes, se fig. 1.4.

Fig. 1.4
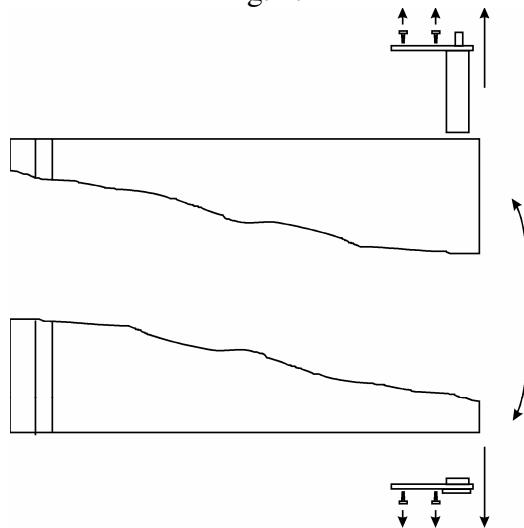
Bundhængsel flyttes ved at afmontere de forreste ben/hjul og derefter montere i modsatte side, se fig. 1.5.

Fig. 1.5
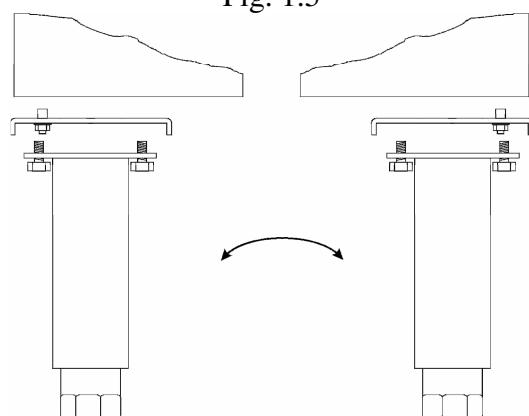
Tophængsel i ny hængselside løsnes og døren løftes på plads på bundhængsel. Hængsel trykkes ned på dørfjeder og fastgøres. Isæt låseskrue se fig. 1.6, luk og fastgør top med skruer se fig. 1.7.

Fig. 1.6
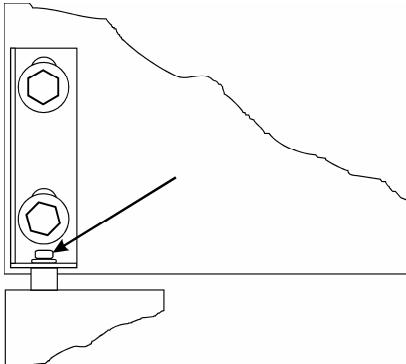
Fig. 1.7
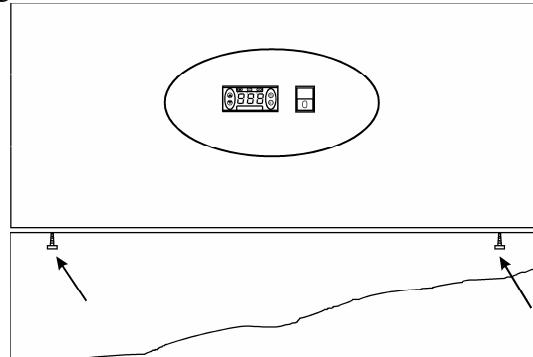
El-tilslutning

Skabet er beregnet for tilslutning til 220-240 V/50 Hz. Tilslutningen skal ske ved en stikkontakt, der bør være let tilgængelig.

Dette køleskab/fryseskab skal ekstrabeskyttes ifølge stærkstrømsreglementet. Dette gælder også, selvom der er tale om udskiftning af et eksisterende køleskab/fryseskab, der ikke har været ekstrabeskyttet. I bygninger opført før 1. april 1975 er ekstrabeskyttelsen i orden, hvis der er installeret HFI-afbryder, som beskytter den stikkontakt køleskabet/fryseskabet skal tilsluttes.

I begge disse tilfælde skal der, hvis stikkontakten er for trebenet stikprop, benyttes en trebenet stikprop, og lederen med grøn/gul isolation skal tilsluttes jordklemmen (mærket ⊕).
Hvis stikkontakten kun er for tobenet stikprop, benyttes en tobenet stikprop. Hvis brugeren selv monterer denne, skal lederen med grøn/gul isolation klippes af så tæt som muligt på det sted, hvor lederen går ind i stikproppen.
I alle andre tilfælde bør De lade en autoriseret el-installatør undersøge, hvordan De nemmest får ekstrabeskyttet køleskabet/fryseskabet. Hvis De ikke har ekstrabeskyttelse i bygningen i forvejen, anbefaler Elektricitetsrådet, at De lader el-installatøren opsætte en PFI- eller HPFI afbryder.

Opstart

Inden skabet tages i brug, anbefales det at rengøre dette, se afsnit om vedligeholdelse.

Vigtigt !
Hvis skabet har ligget ned under transport, vent 2 timer før opstart.
Husk at fjerne transportsikring på kompressor, fjern hele stangen som vist i fig. 1.8.

Fig. 1.8
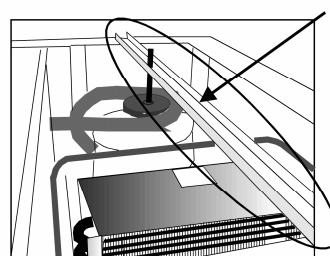
Tilslut skabet til stikkontakt og tænd for kontakten på kontrolpanel, se fig. 1.9.

Fig. 1.9
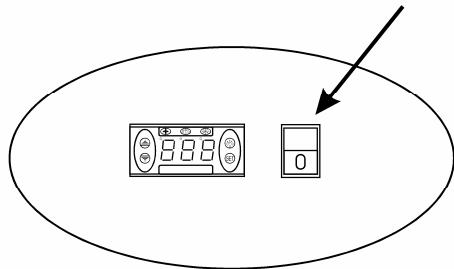
Termostaten

Termostaten er placeret i kontrolpanel, se fig. 2.0.

Fig. 2.0
DP3   DP2   DP1
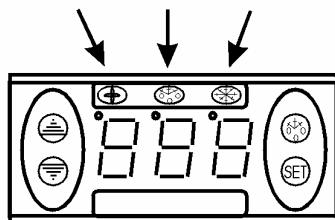
Termostaten er forprogrammeret til skabet, så i de fleste tilfælde er det unødvendigt at justere indstillinger.

Når skabet tændes vil display vise den aktuelle temperatur i skabet.

Indikations LED's:
DP1:   Blinkende, indikerer at en parameter er under ændring.
             Tændt, indikerer at kompressor er aktiveret.

DP2:   Tændt, indikerer at afrimning er aktiveret.

DP3:   Tændt, indikerer at fordamper-ventilator er aktiveret.

Tastatur lås:
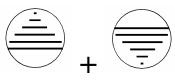
+   Tryk på disse taster samtidigt i 5 sek. for at låse, display viser 'Pof' eller for at låse op, display viser 'Pon'.

Vis indstillet temperatur:

Tryk på denne tast og display viser den indstillede temperatur, tryk igen for at vende tilbage til normal visning.

Vis fordamper temperatur:

Hold denne tast inde for at se fordamperens temperatur, slip for at vende tilbage til normal visning.

Indstil ny temperatur:

(SET) Tryk på denne tast og display viser den indstillede temperatur.

Tryk på denne tast for at hæve den indstillede temperatur.

Tryk på denne tast for at sænke den indstillede temperatur.

(SET) Tryk på denne tast for at gemme den nye indstilling, display blinker med den nye værdi og vender derefter tilbage til normal visning.

Ændring af parametre:

(SET) Hold denne tast inde i 5 sek. for at få adgang til parameter-liste, display vil vise parameter-nummer og efter 2 sek. værdien af denne.

Tryk på denne tast for at øge værdien.

Tryk på denne tast for at sænke værdien.

(SET) Tryk på denne tast for at gemme den nye indstilling, display blinker med den nye værdi og viser derefter næste parameter.

Se parameter-oversigt fra side 65.

Fejlkoder:

PF1 Blinkende i display, betyder at skabets rum- føler er defekt.
     Skabet vil tilstræbe at holde den indstillede temperatur indtil reparation.

PF2 Blinkende i display, betyder at skabets fordamper-føler er defekt.
     Dette har ikke indflydelse på skabets drift, men bør udbedres snarest.

Afrimning

Skabet afrimer automatisk med forprogrammerede intervaller. Hvis skabet belastes ekstremt med hyppige åbninger af dør eller hyppig udskiftning af varer, kan det blive nødvendigt at udføre en manuel afrimning.

Tryk på denne tast i mere end 3 sec., dette vil starte en manuel afrimning og derefter vende tilbage til normal drift.

Tøvand ledes ud til fordampning i en beholder, der er placeret i kompressorrum.

Vedligeholdelse

Afbryd skabet på stikkontakten.

Med passende mellemrum skal skabet rengøres. Udvendig og indvendig rengøring foretages med svag sæbeopløsning og aftørres grundigt. Udvendige overflader kan vedligeholdes med stålolie.

Filteret på kondensatoren(se fig. 2.1), aftages og rengøres med støvsuger og evt. svag sæbeopløsning.

Fig. 2.1
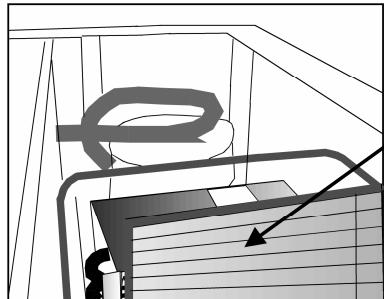
Rengøringsmidler må IKKE indeholde klor, klorforbindelser eller andre aggresive midler, da de kan forårsage tæringer på de rustfri flader og på det indvendige kølesystem.

Kondensator og det øvrige kompressorrum holdes bedst rent ved hjælp af en støvsuger og en stiv børste.

Der må ikke spules med vand i kompressorrummet, da der kan opstå kortslutninger og skader på de elektriske dele.

Service

Kølesystemet er et hermetisk lukket system og kræver ikke tilsyn, kun renholdelse.

Ved svigt i kølevirkningen, undersøg om årsagen er afbrydelse i stikkontakt eller sikringsgruppe.

Kan grunden til svigt ikke findes, må De henvende Dem til Deres leverandør. Ved al henvendelse bedes De oplyse skabets typenavn og serienummer. Disse oplysninger findes indvendigt i skabet på typenummerskiltet placeret øverst i højre side.

Bortskaffelse

Når det udtjente køleskab/fryseskab skal bortskaffes, skal det ske på en miljømæssig forsvarlig måde. Vær opmærksom på reglerne for bortskaffelse. Der kan være særlige krav og betingelser, der skal overholdes.

Viktig information

1. Läs den här bruksanvisningen så att du får bästa möjliga nytta av skåpet.
2. Det är användarens ansvar att använda skåpet enligt anvisningarna.
3. Kontakta återförsäljaren omgående om det uppstår fel på skåpet.
4. Skåpet bör placeras i ett torrt rum med god ventilation.
5. Skåpet bör inte placeras i närheten av värmekällor eller i direkt solljus.
6. Observera att alla elektriska apparater kan innebära fara.
7. Förvara inte explosionsfarliga ämnen som t.ex. gas, bensin eter eller liknande.
8. Ingen asbest och inga freoner (CFC) har använts vid konstruktionen.
9. Oljan i kompressorn innehåller inte PCB.

Uppackning och uppställning

Skåpet levereras emballerat på träpall. Emballaget ska tas bort. Utvändiga ytor är monterade med skyddsfolie. Ta bort denna före montering.

För att funktionen ska bli korrekt är det viktigt att skåpet står plant efter monteringen. Om skåpet har ben kan dessa justeras i höjdled. Se fig. 1.1.

Fig. 1.1
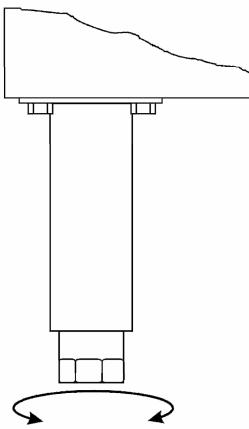
Om skåpet byggs in måste du ta hänsyn till följande:

1. Det ska finnas en lämplig luftspalt över skåpet (minst 15 cm) för att kylsystemet ska kunna fungera tillfredsställande.
2. Avstånd till väggar och liknande på gångjärnssidan ska vara av lämplig storlek, så att det blir möjligt att byta ut hyllor och rengöra vid gångjärnen.

Vända dörren

KOM IHÅG att detta ska göras medan dörren är öppen!
Öppna toppen genom att ta bort de markerade skruvarna i fig. 1.2. Ta bort låsskruvarna i dörrfjädern, markerade i fig. 1.3,
lossa sedan gångjärnet och lyft av dörren.

Fig. 1.2
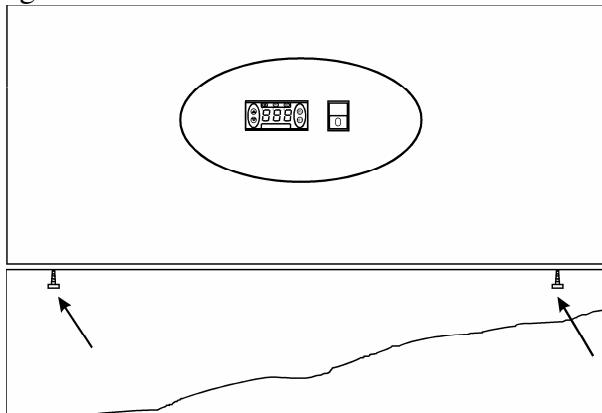
Fig. 1.3
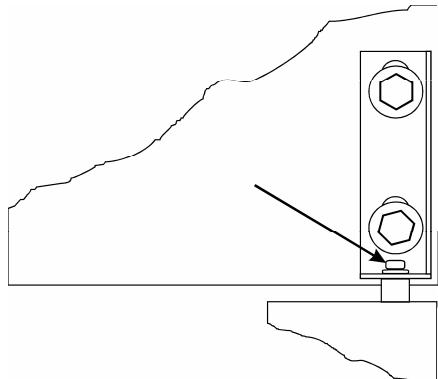
Lägg ned dörren och växla sedan dörrfjädern och nedre bussningen, se fig. 1.4.

Fig. 1.4
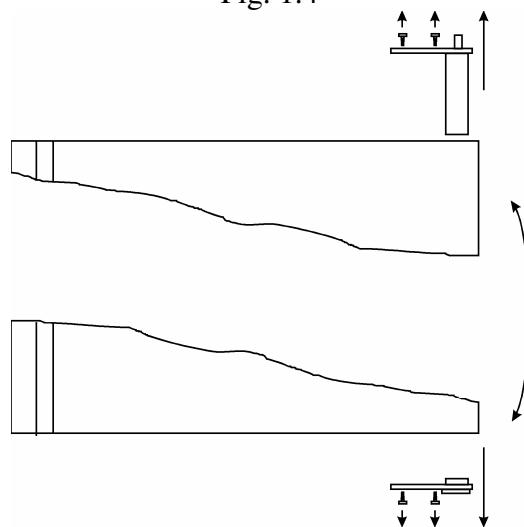
Nedre gångjärnet ska flyttas genom att demontera de främre benen/hjulen och därefter montera på motsatta sidan, se fig. 1.5.

Fig. 1.5
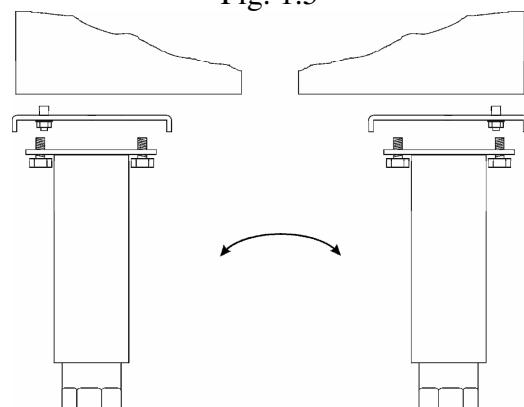
Lossa sedan övre gångjärnet på den nya gångjärnssidan och lyft dörren på plats på nedre gångjärnet. Tryck ner gångjärnet på dörrfjädern och fäst det. Sätt in låsskruvarna (se fig. 1.6) lås fast och fäst med skruvarna (se fig. 1.7).

Fig. 1.6
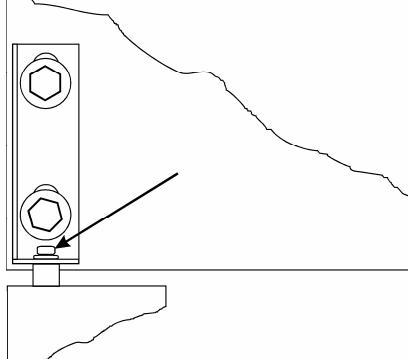
Fig. 1.7
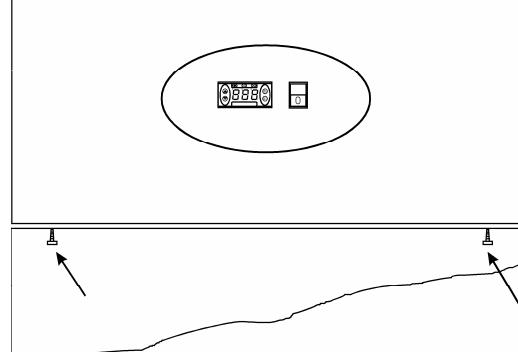
Elanslutning

Skåpet är beräknat för anslutning till 220–240 V/50 Hz. Anslutningen ska göras med en stickkontakt som bör vara lätt åtkomlig.

Detta kylskåp/frysskåp ska extraskyddas enligt starkströmsbestämmelserna. Detta gäller också även vid utbyte av ett befintligt kylskåp/frysskåp som inte haft sådant extraskydd.

Driftsstart

Innan skåpet tas i bruk ska det rengöras. Se avsnittet om underhåll.

Viktigt!
Om skåpet har legat ner under transporten ska du vänta två (2) timmar innan det startas.
Ta bort transportsäkringen på kompressorn genom att ta bort hela stången enligt fig. 1.8.

Fig. 1.8
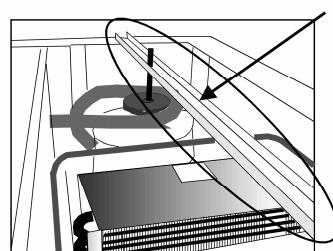
Anslut skåpet till vägguttaget och tryck på knappen på manöverpanelen, se fig. 1.9.

Fig. 1.9
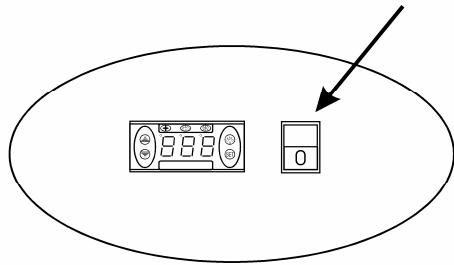
Termostaten

Termostaten sitter i manöverpanelen, se fig. 2.0.

Fig. 2.0
DP3   DP2   DP1
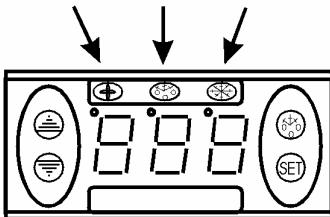
Termostaten är förprogrammerad för skåpet, och oftast behöver inga inställningar justeras.

När skåpet startas kommer displayen att visa den aktuella temperaturen i skåpet.

Lysdioder för indikering:
DP1:   Blinkning: en parameter håller på att ändras.
              Tänd: kompressorn är aktiv.

DP2:   Tänd: avfrostning på.

DP3:   Tänd: förångare-ventilator är aktiv.

Knapplås:
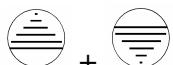
 + Tryck på dessa knappar samtidigt i fem (5) sek för att låsa, displayen visar 'Pof' om
 du ska låsa upp visar displayen 'Pon'.

Visa inställd temperatur:

(SET) Tryck på den här knappen så visar displayen den inställda temperaturen. Tryck på nytt för att
 återvända till normal visning.

Visa förångningstemperatur:

 Håll in den här knappen för att visa förångarens temperatur, släpp för att återgå till normal
 visning.

Ställa in ny temperatur:

(SET) Tryck på den här knappen så visar displayen den inställda temperaturen.

Tryck på den här knappen för att höja temperaturen.

Tryck på den här knappen för att sänka temperaturen.

(SET) Tryck på den här knappen för att spara den nya inställningen. Det nya värdet blinkar på displayen och därefter återgår displayen till normal visning.

Ändra parametrarna:

(SET) Håll in den här knappen under fem (5) sekunder så visas parameterlistan. Displayen visar först parameternummer och efter två (2) sekunder visas parametervärdet.

Tryck på den här knappen för att öka värdet.

Tryck på den här knappen för att minska värdet.

(SET) Tryck på den här knappen för att spara den nya inställningen. Det nya värdet blinkar på displayen och därefter visas nästa parameter.

Se parameteröversikt på sida 65.

Felkoder:

PF1 Blinkande display betyder att skåpets rumstemperaturgivare är defekt.
       Skåpet försöker hålla den inställda temperaturen fram tills reparationen.

PF2 Blinkande display betyder att skåpets förångningsgivare är defekt.
       Detta påverkar inte skåpets drift, men bör åtgärdas snarast möjligt.

Avfrostning

Skåpet avfrostas automatiskt enligt förprogrammerade intervall. Om skåpet belastas extremt mycket med återkommande öppningar av dörren eller återkommande byte av innehållet kan en manuell avfrostning bli nödvändig.

Tryck på den här knappen i minst tre (3) sekunder. Då startar den manuella avfrostningen och därefter återgår skåpet till normal drift.

Smältvatten leds ut till förångning i en behållare som sitter i kompressorutrymmet.

Underhåll

Bryt strömmen till skåpet genom att dra ut stickkontakten.

Skåpet ska rengöras med lämpliga mellanrum. Utvändig och invändig rengöring ska utföras med en svag tvållösning (milt diskmedel) och därefter ska skåpet torkas av noggrant. Utvändiga ytor kan underhållas med stålolja.

Filtret på kondensatorn (se fig. 2.1) kan tas loss och rengöras med dammsugare och eventuellt en svag tvållösning (milt diskmedel).

Fig. 2.1
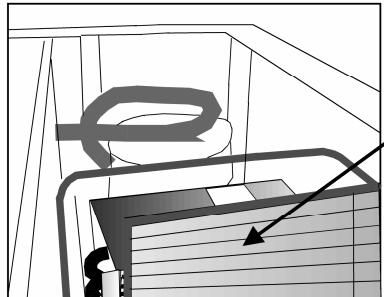
Rengöringsmedel får INTE innehålla klor, klorföreningar eller andra aggressiva medel eftersom de kan orsaka skador på de rostfria ytorna och på det interna kylsystemet.

Kondensatorn och det övriga kompressorutrymmet rengörs bäst med en dammsugare och en styv borste.

Du får inte spola vatten i kompressorrummet, eftersom detta kan orsaka kortslutningar och skador på de elektriska delarna.

Service

Kylsystemet är ett hermetiskt slutet system och kräver ingen tillsyn – endast rengörning.

Vid dålig kylverkan: kontrollera först om orsaken är ett avbrott i stickkontakten eller proppskåpet.

Kontakta återförsäljaren om det inte går att lokalisera felet. Vi ber dig alltid uppge skåpets typbeteckning och serienummer vid alla kontakter med oss. Informationen sitter på skåpets insida, på märkskylten överst på högra sidan.

Bortskaffande

Ett uttjänt kyl-/frysskåp måste bortskaffas på ett miljömässigt försvarbart sätt. Var uppmärksam på vilka regler som gäller för bortskaffande. Det kan finnas särskilda krav och bestämmelser som måste följas.

Important safety instructions

1. To obtain full use of the cabinet, we recommend reading this instruction manual.
2. It is the user's responsibility to operate the appliance in accordance with the instructions given.
3. Contact your dealer immediately in case of any malfunctions.
4. Place the cabinet in a dry and ventilated place.
5. Keep the cabinet away from strongly heat-emitting sources and do not expose it to direct sunlight.
6. Always keep in mind that all electrical devices are sources of potential danger.
7. Do not store inflammable material such as thinner, gasoline etc. in the cabinet.
8. We declare that no asbestos nor any CFC are used in the construction.
9. The oil in the compressor does not contain PCB.

Unpacking and installation

Remove the wooden pallet and the packing. External surfaces are supplied with a protection foil, which must be removed before installation.

To ensure correct function it is important that the cabinet is level. If the cabinet is supplied with legs, these can be adjusted. See fig. 1.1.

Fig. 1.1
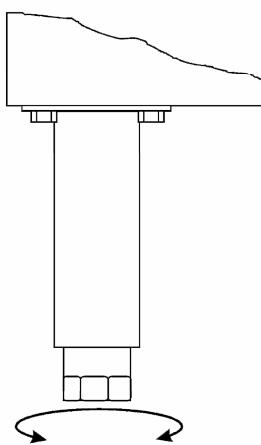
If you want to build in your cabinet please note the following:

1. There must be at least 15 cm free space above the cabinet in order for the cooling system to work satisfactorily.
2. There must be sufficient space at the hinge side to clean and replace the shelves and clean around the hinge.

Door reversal

NOTE that the following procedure must be made with the door open!

Open the top by removing the screws shown in fig. 1.2. Remove lock screw in door spring as shown in fig. 1.3. Loosen the hinge and remove the door.
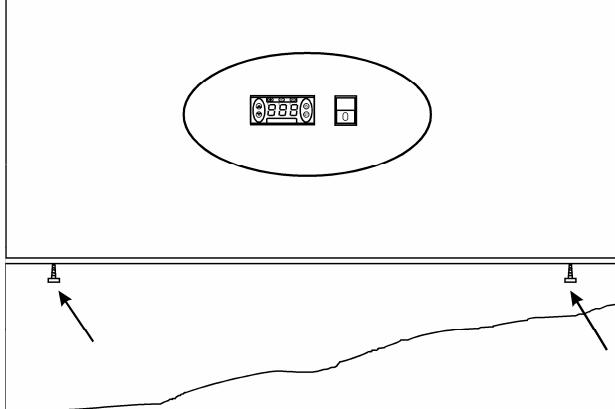
Fig. 1.2   Fig. 1.3
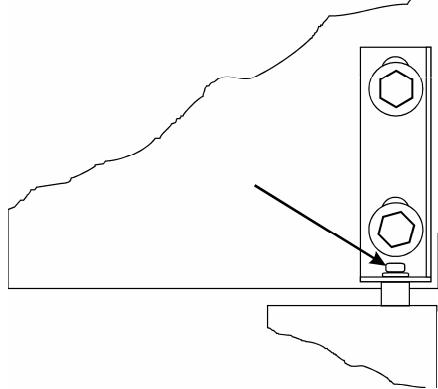
The door is placed horizontally and the door spring and bottom bush are reversed, see fig. 1.4.

Fig. 1.4
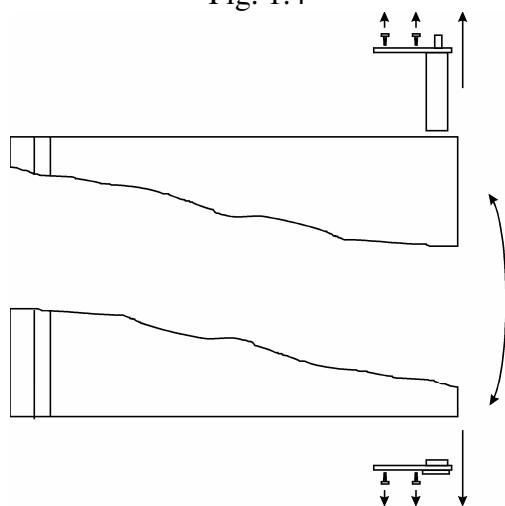
The bottom hinge is reversed by demounting the front legs/wheels and mount them in the other side of the cabinet, see fig. 1.5.

Fig. 1.5
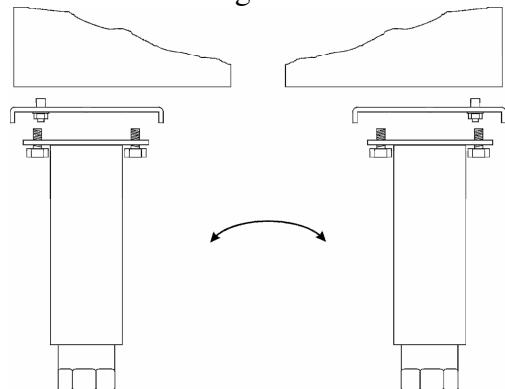
Loosen the top hinge in the new hinge side and replace the door on the bottom hinge. The hinge is pressed downwards on the door spring and is fastened. Put in the lock screw see fig. 1.6, close and fasten the top with screws, see fig. 1.7.

Fig. 1.6
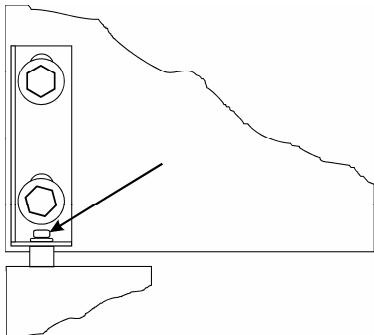
Fig. 1.7
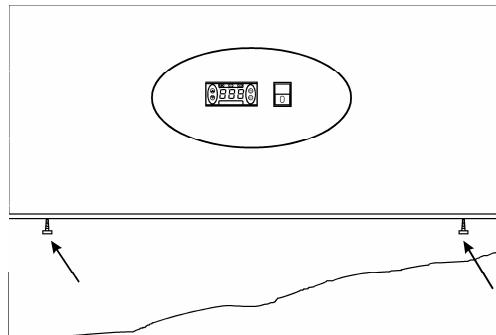
Electrical connecting

The cabinet operates on 230 V/50 Hz.

The wall socket should be easily accessible.

All earthing requirements stipulated by the local electricity authorities must be observed. The cabinet plug and wall socket should then give correct earthing. If in doubt, contact your local supplier or authorized electrician.

The flexible cord fitted to this appliance has three cores for use with a 3-pin 13-Amp or 3-pin 15-Amp plug. If a B.S. 1363 (13-Amp) fused plug is used, it should be fitted with a 13-Amp fuse.

The wires in this mains lead are coloured in accordance with the following code:
Green/Yellow: Earth, Blue: Neutral, Brown: Live.

The main electrical connections must be done by skilled electricians.

Start-up of the cabinet

Before use, we recommend that the cabinet is cleaned, see the section on maintenance and cleaning.

Important !
If the cabinet has been horizontally placed during transport, please wait 2 hours before starting up the cabinet.
Remember to remove the transport safety device on the compressor. Remove the whole bar as shown in fig. 1.8.

Fig. 1.8
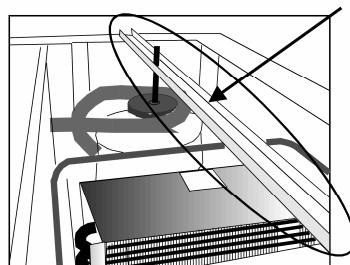
Connect the cabinet to a socket and turn on the switch on the control panel, see fig. 1.9.

Fig. 1.9
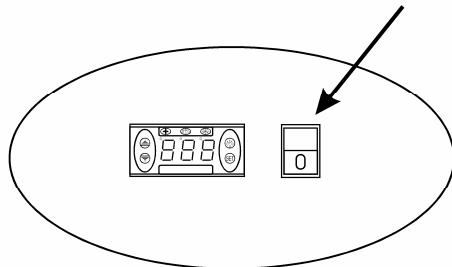
Thermostat

The thermostat is placed in the control panel, see fig. 2.0.

Fig. 2.0
DP3   DP2   DP1
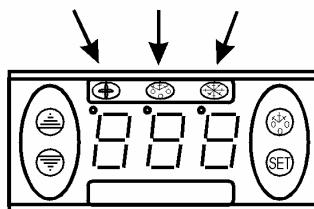
The thermostat has been pre-set and in most cases it is not necessary to adjust the settings.

When turning on the cabinet the display will show the current temperature in the cabinet.

Indications LED's:

DP1:   Flashing, indicates that a parameter is being changed
              Switched on, indicates that the compressor is activated

DP2:   Switched on, indicates that defrosting is activated.

DP3:   Switched on, indicates that the evaporator fan is activated.

Keyboard lock:
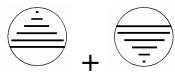
+   To lock or unlock the keyboard, press these keys simultaneously for about 5 seconds
              (to lock the display reads 'Pof', to unlock the display reads 'Pon').

Display set temperature:

Press this key and the display will show the set temperature. Press the key again to return to
normal reading

Display evaporator temperature:

Press this key continously to show the evaporator temperature, let go to return to normal
reading.

Set new temperature:

(SET) Press this key and the display shows the set temperature.

(≜) Press this key to increase the set temperature.

(≜) Press this key to lower the set temperature.

(SET) Press this key to save the new settings. The display will flash with the new value and will then return to normal reading.

Changing of parameters:

(SET) Press this key continuously for 5 seconds to access the list of parameters. The display will show the number of the parameter and after 2 seconds the value.

(≜) Press this key to increase the value.

(≜) Press this key to lower the value.

(SET) Press this key to save the new settings. The display will flash with the new value and will then return to normal reading.

See table of parameters from page 65.

Alarm codes:

PF1 Flashing in the display: indicates that the cabinet sensor is defective.
The cabinet will strive to keep the set temperature until it has been repaired.

PF2 Flashing in the display: indicates that the evaporator sensor is defective.
This does not influence the operation of the cabinet, but should be repaired as soon as possible.

Defrosting

The cabinet defrosts automatically with pre-set intervals. If the door to the cabinet is opened or the contents of the cabinet is changed frequently it may become necessary to defrost the cabinet manually.

(☀💧) Pressing this key continuously for more than 3 seconds will start a manual defrosting and then return to normal operation.

Defrosted water runs to a container placed in the compressor compartment and evaporates.

Maintenance and cleaning

Switch the cooler off at the socket.

The cabinet must be periodically cleaned. Clean the external and internal surfaces of the cabinet with a light soap solution and subsequently wipe dry. External surfaces can be maintained using steel oil.

Remove the condenser filter (see fig. 2.1), and clean it with a vacuum cleaner and if necessary a light soap solution.

Fig. 2.1
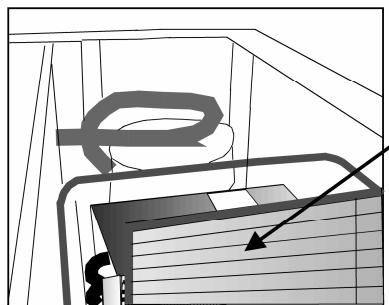
Do NOT use cleansers containing chlorine or other harsh cleansers, as these can damage the stainless steel surfaces and the internal cooling system.

Clean the condenser and the compressor compartment using a vacuum cleaner and a stiff brush.

Do NOT hose the compressor compartment with water as this can cause short circuits and damage on the electrical parts.

Service

The cooling system is a hermetically sealed system and does not require supervision, only cleaning.

If the cabinet fails to cool, check if the reason is a power cut.

If you cannot locate the reason to the failure of the cabinet, please contact your supplier. Please inform model and serial number of the cabinet. You can find this information on the rating label which is placed inside the cabinet in the top right hand side.

Disposal

Disposal of the cabinet must take place in an environmentally correct way. Please note existing regulation on disposal. There may be special requirements and conditions which must be observed.

$$\boxed{\textbf{D}}$$

Wichtige Sicherheitsvorschriften

1. Vor Inbetriebnahme des Gerätes machen Sie sich bitte mit der Gebrauchanweisung insbesondere der Sicherheitsvorschriften vertraut.
2. Bei Zuwiderhandlung gegen diese oder fahrlässigem Gebrauch übernimmt der Anwender des Produktes die Haftung für eventuell dadurch entstehende Sach- sowie Personschäden.
3. Im Falle einer Störung kontaktieren Sie bitte daher umgehend Ihren Fachhändler.
4. Platzieren Sie den Schrank an einem trockenen Standort.
5. Der Schrank darf nicht in der Nähe von Hitzeabstrahlenden Geräten platziert werden. Vermeiden Sie Standorte mit direktem Sonnenlicht.
6. Bitte denken Sie daran, dass alle elektrischen Geräte gefährlich sein können.
7. Bewahren Sie keine explosiven Stoffe wie z.B. chemische Verdünnungsmittel und Benzin in diesem Gerät auf.
8. Wir erklären, dass kein Asbest noch CFC im Aufbau verwendet worden ist.
9. Das Öl im Kompressor enthält nicht PWB.

Aufstellung

Der Schrank wird auf einer Holzpalette für sicheren Transport geliefert. Entfernen Sie diese und stellen Sie den Schrank in einer geraden/waagrechten Position auf.

Schränke mit Beinen werden mit Hilfe der einstellbaren Beine waagerecht aufgestellt, sehe Fig. 1.1.

Fig. 1.1
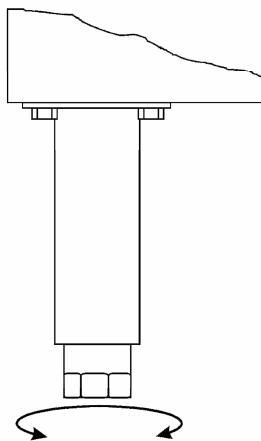
Bitte beachten Sie unbedingt folgende Einbauhinweise:

1. Mindestens 15 cm müssen oberhalb des Gerätes frei gehalten werden, damit das Kühlsystem ordnungsgemäβ funktioniert.
2. Achten Sie auf genügend Freiraum an der Seite des Scharnier-/Türanschlages um das Gerät reinigen und der Roste/Einlegeböden ersetzen bzw. entnehmen zu können.

Wechseln des Türanschlages

Wichtig! Die Tür muss geschlossen werden, wenn der Türanschlag gewechselt wird!
Öffnen Sie das Top um die in Fig. 1.2 markierte Schrauben zu entfernen. Entfernen Sie die
Schlossschraube in der Türfeder, wie in Fig. 1.3 markiert. Danach lösen sie das Türscharnier und
heben die Tür aus.

Fig. 1.2
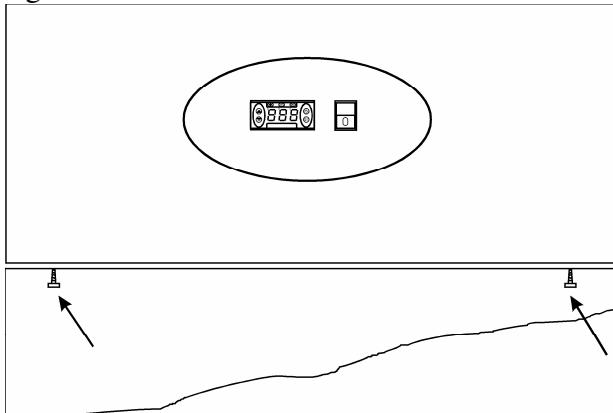
Fig. 1.3
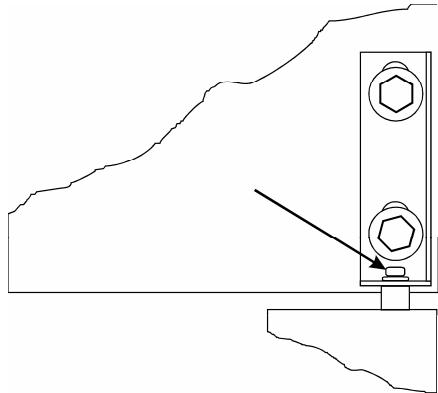
Legen Sie die Tür in der horizontaler Position und wechseln Sie die Türfeder und die Bodenbusche,
siehe Fig. 1.4.

Fig. 1.4
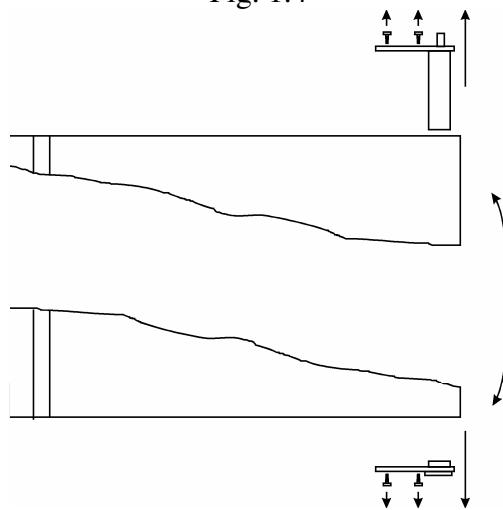
Um das Bodenscharnier zu wechseln muss man die vorne Stellschrauben/Rollen abmontieren und
danach das Scharnier in der anderen Seite montieren, siehe Fig. 1.5.

Fig. 1.5
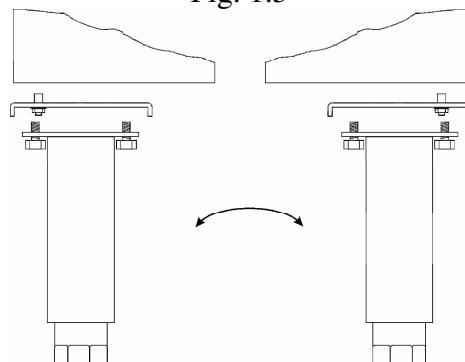
Lösen Sie das Obenscharnier in der neuen Scharnierseite und heben sie die Tür wieder auf das Bodenscharnier auf.

Drücken Sie das Scharnier auf der Türfeder und festmachen. Setzen Sie die Schlossschraube ein (siehe Fig. 1.6), das Top zumachen und mit Schrauben festmachen. Siehe Fig. 1.7.

Fig. 1.6   Fig. 1.7
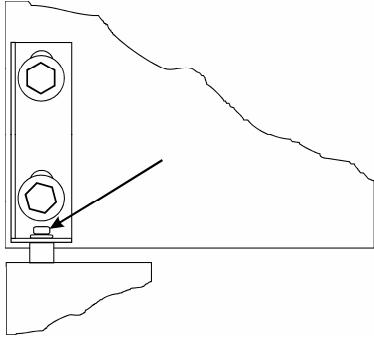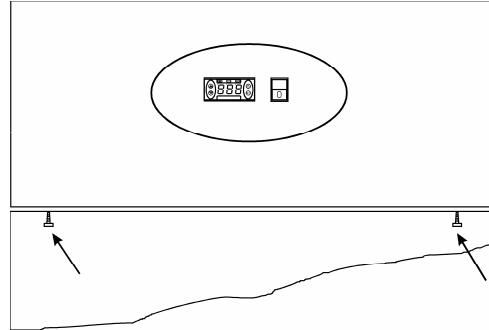
Anschlieβen

Das Gerät hat eine Spannung von 230 V/50 Hz.

Der Stecker muss geerdet sein (Schuko).

Müssen Sie das Kabel ersetzen, benutzen Sie unbedingt ein entsprechendes geerdetes Kabel.

Bitte beachten Sie, dass der Anschluss lediglich durch einen erfahrenen Elektriker erfolgen darf.

Wenn der Kabel beschädigt ist, sollte es bei entweder der Hersteller oder ein Service Vertreter ersetzt werden um Gefahr zu vermeiden.

Einschalten

Es empfiehlt sich das Gerät vor Inbetriebnahme zu reinigen (Näheres unter „Reinigen").

Wichtig!
Wenn der Schrank liegend geliefert ist, warten Sie 2 Stunden vor Einschalten.
Bitte erinnern Sie die Transportsicherung auf dem Kompressor zu entfernen. Die ganze Stange entfernen wie auf Fig. 1.8 gezeigt.

Fig. 1.8
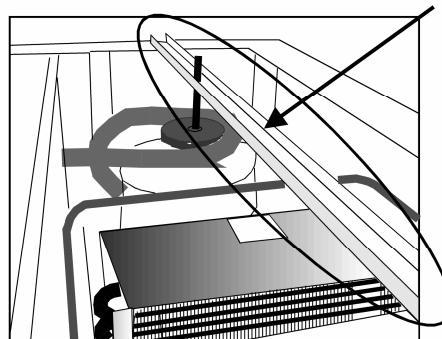
Mit dem Anschließen d.h. Netzstecker in Steckdose und der Schalter am Panel einschalten ist das Gerät betriebsbereit, sehe Fig. 1.9.

Fig. 1.9
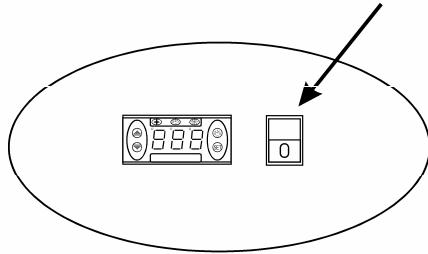
Temperaturregelung

Der Regler ist im Kontrollpaneel plaziert, siehe Fig. 2.0.

Fig. 2.0
DP3   DP2   DP1
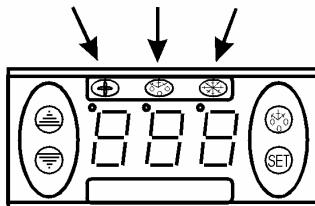
Der Regler ist voreingestellt für den Schrank und normalerweise es ist nicht notwendig die Einstellung zu regulieren.

Bei Anschließen zeigt das Display die aktuelle Temperatur im Schrank.

Indikations LED's:
DP1:   Lampe blinkt: zeigt an, dass ein Parameter geändert wird.
            Lampe eingeschaltet: zeigt an, dass der Kompressor aktiv ist.

DP2:   Lampe eingeschaltet: zeigt an, dass die Abtauung aktiv ist.

DP3:   Lampe eingeschaltet: zeigt an, dass der Verdampferventilator aktiv ist. .

Tastaturschloss:
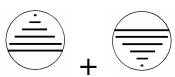
+ Drücken Sie gleichzeitig auf diese Tasten für 5 Sekunden um die Tastatur zu verschliessen (Display zeigt „Pof") oder aufzuschliessen (Display zeigt 'Pon').

Eingestellte Temperatur zeigen

Drücken Sie auf diese Taste und die eingestellte Temperatur erscheint im Display. Nochmals drücken um die normale Temperatur zu zeigen

Verdampfertemperatur zeigen:

Drücken Sie auf diese Taste und halten Sie die Taste nieder um die Verdampfertemperatur zu zeigen. Loslassen um die normale Temperatur wieder zu zeigen.

Neue Temperatur einstellen:

(SET) Drücken Sie auf diese Taste und Display zeigt die eingestellte Temperatur.

(≛) Drücken Sie auf diese Taste um die eingestellte Temperatur zu erhöhen.

(≝) Drücken Sie auf diese Taste um die eingestellte Temperatur zu senken.

(SET) Drücken Sie auf diese Taste um die neue Einstellung zu lagern. Display blinkt mit den neuen Wert und geht zurück zu der normalen Funktion.

Änderung der Parameter:

(SET) Drücken Sie auf diese Taste für 5 Sekunden um Zugang in der Parameterliste zu gelangen. Das Display zeigt die Parameternummer und nach 2 Sekunden den Wert.

(≛) Drücken Sie auf diese Taste um den Wert zu erhöhen.

(≝) Drücken Sie auf diese Taste um den Wert zu senken.

(SET) Drücken Sie auf diese Taste um die neue Einstellung zu lagern. Das Display blinkt mit dem neuen Wert und zeigt den nächsten Parameter.

Siehe Parameterübersicht vom Seite 65.

Störungsanzeigen:

PF1 Erscheint in Display: bedeutet das der Raumsensor defekt ist. Kundendienst heranziehen. Der Schrank versucht die eingestellte Temperatur bis Reparatur zu halten.

PF2 Erscheint in Display: bedeutet das der Verdampfersensor defekt ist. Kundendienst heranziehen. Es hat kein Einfluss auf den Betrieb des Schrankes, es ist aber notwendig schnellstens zu besichtigen.

Abtauen

Der Schrank wird in vorprogrammierten Intervallen automatisch abgetaut. Falls der Schrank mit häufigen Öffnungen der Tür order häufigen Auswechseln von Gefriergut äußerst belastet wird, ist es vielleicht notwendig der Schrank manuell abzutauen.

(❄) Drücken Sie auf diese Taste länger als 3 Sekunden fängt die manuellen Abtauung an, und der Schrank wird danach zu normalen Betrieb zurückkehren.

Tauwasser zur Verdampfung wird in einen Behälter im Kompressorraum abgelassen.

Reinigung und Pflege Ihres Gerätes

Der Schrank auf Steckdose ausschalten.

In regelmäßigen Zwischenräumen den Schrank mit mildem Geschirrspülmittel innen und außen reinigen. Alles mit einem Tuch gut trocken. Oberflächen außen mit Stahlöl behandeln.

Der Filter auf dem Kondensator (sehe Fig. 2.1) entfernen und mit Staubsauger und eventuell auch mit mildem Geschirrspülmittel reinigen.

Fig. 2.1
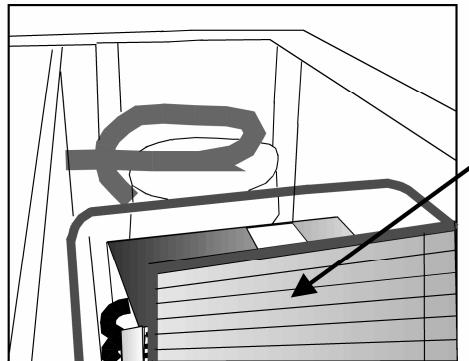
Verwenden Sie keine säurehaltige oder chemische Putz- oder Lösungsmittel, diese könnten Rostfraß auf die Edelstahlflächen und dem Innenkühlsystem verursachen.

Kondensator und das übrige Kompressorraum mit Staubsauger und eine steife Bürste reinigen.

Achten Sie darauf, dass kein Wasser im Kompressorraum und in den elektrischen Teilen kommt, was Kurzschluss verursachen kann.

Wartung und Kundendienst

Das Kühlsystem ist ein hermetisch geschlossenes System und fordert keine Besichtigung, sondern Reinigung.

Bei Ausfall der Kühlung prüfen Sie ob der Netzstecker richtig in der Stockdose sitzt und ob die Sicherung der Stockdose in Ordnung ist.

Wenn keine Ursachen vorliegen und Sie die Störung nicht selbst beseitigen können, wenden Sie sich bitte an die Kundendienststelle. Teilen Sie die Typenbezeichnung und Seriennummer mit. Diese Informationen finden Sie auf den Typenschild im Schrank an der rechten Seite oben.

Entsorgung

Wenn der Schrank ausgedient hat, muss die Entsorgung auf eine umweltmäßige anständige art und weise vorgenommen werden. Beachten Sie die Vorschriften für Entsorgung. Es gäbe z.B. Spezialforderungen und Bedingungen zu beachten.

$$\boxed{F}$$

Instructions importantes

1. Avant d'utiliser votre armoire, nous vous recommandons de lire ce mode d'emploi dans son entier.
2. C'est la responsabilité de l'utilisateur de manier l'appareil selon les instructions données.
3. Contacter votre revendeur immédiatement en cas de défauts de fonctionnement de l'armoire.
4. L'armoire doit être placée dans un endroit sec et ventilé.
5. L'armoire ne doit pas être exposée aux rayons du soleil ou à tout autre source de chaleur.
6. N'oublier pas que tous les appareils électriques sont des sources de danger potentiel.
7. Ne conserver pas et n'utilisez pas des produits qui pourraient provoquer des explosions ou qui sont inflammables, tels que gaz, briquets, essence, éther etc. dans l'armoire.
8. Aucune asbeste ou CFC est utilisée dans la construction de l'armoire.
9. L'huile dans le compresseur ne contient pas de PCB.

Désassemblage et mise en place

L'armoire est livrée avec une palette en bois afin de l'assurer pendant le transport. Enlever la palette et placer l'armoire d'une position verticale. Les surfaces extérieures sont équippées d'un film pelable, qu'il faut enlever avant la mise en place.
Lors de la mise en place, l'armoire doit être de niveau, ce qui s'obtient aisément grâce aux pieds réglables, voir figure 1.1. (Quelques armoires sont livrées avec roulettes au lieu de pieds réglables).

Figure 1.1
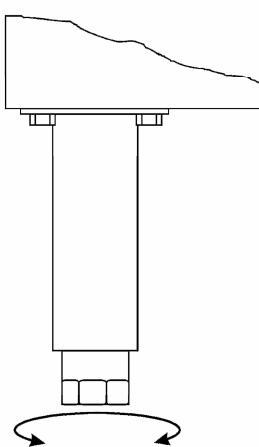
Si vous voulez installer l'armoire dans un placard ou similaire, il faut tenir compte des points suivants :

1. Il faut au minimum 15 cm d'espace au-dessus de l'armoire afin que le système frigorifique peut fonctionner de façon satisfaisante.
2. Il faut assez d'espace autour de l'armoire pour pouvoir nettoyer et remplacer les clayettes. L'armoire ne doit pas être appuyé contre un mur du côté charnières.

Inversement de la porte

N'oublier pas de fermer la porte avant de l'inverser.
Ouvrir le dessus de l'armoire en demontant les vis (figure 1.2), demonter le vis de blocage dans le ressort de la porte (figure 1.3), la charnière s'est lâchée et vous pouvez demonter la porte.

Figure 1.2
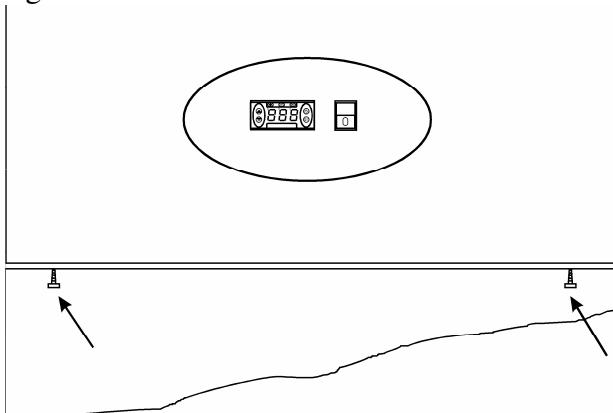
Figúre 1.3
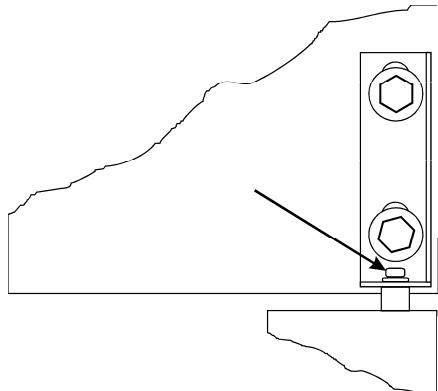
Mettre la porte aux horizontal. Échanger le ressort de la porte et la boîte de fond (figure 1.4).

Figure 1.4
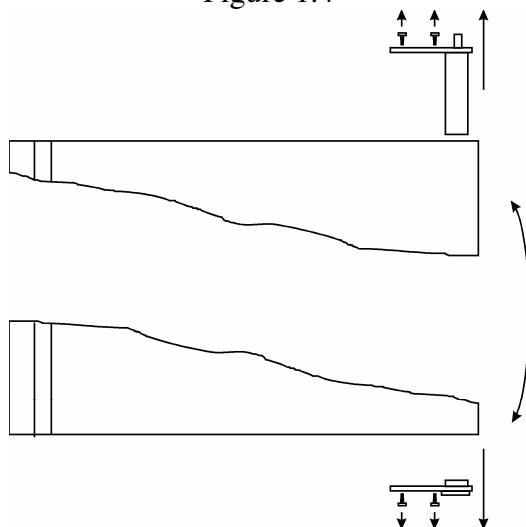
La charnière de fond est déplacée en demontant les pieds/roulettes de devant, et puis les monter au côté opposé (figure 1.5).

Figure 1.5
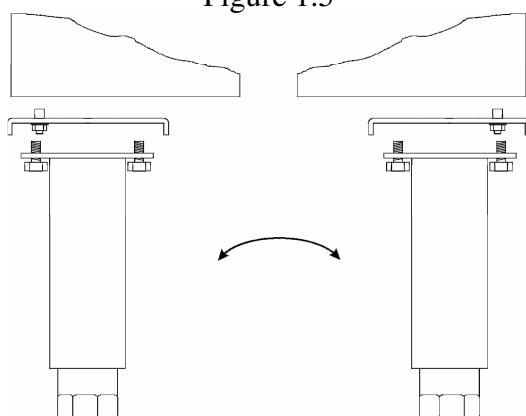
Lâcher la charnière dessus au nouveau côté charnière et monter la porte sur la charnière de fond. Presser la charnière sur le ressort de la porte et fixer-là. Monter le vis de blocage (figure 1.6), fermer et fixer le dessus avec les vis (figure 1.7).

Figure 1.6
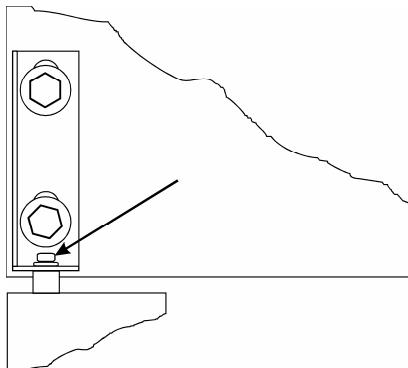
Figure 1.7
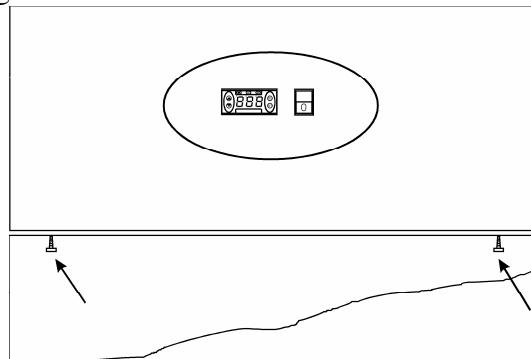
Branchement électrique

L'armoire doit être branchée par une prise d'un accès facile avec la tension de 220-240V/ 50Hz.

Les installations électriques doivent être effectués par un électricien spécialisé.

Démarrage

Avant d'utiliser votre armoire, nous vous recommandons de la nettoyer, voir la section « entretien ».

Important !
Si l'armoire a été transportée aux horizontal, il faut attendre 2 heures après l'installation pour démarrer l'appareil.
N'oublier pas d'enlever la protection du compresseur ; enlever le bâton entier (figure 1.8).

Figure 1.8
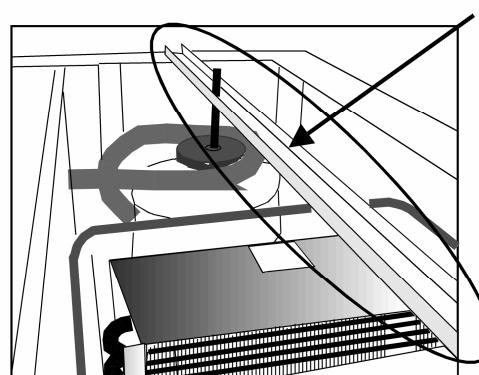
Brancher l'armoire par la prise et allumer le panneau de contrôle en appuyant sur l'interrupteur (figure 1.9).

Figure 1.9
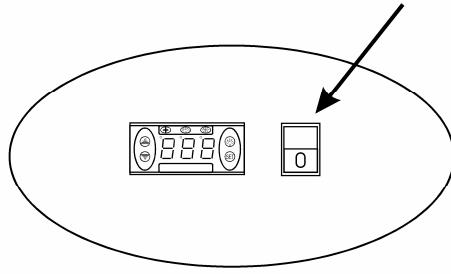
Thermostat

Le thermostat est placé dans le panneau de contrôle (figure 2.0).

Figure 2.0
DP3   DP2   DP1
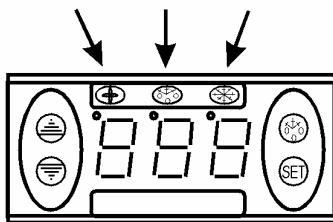
Il est préprogrammé pour l'armoire ; dans la plupart des cas il est donc inutile de le régler.

Quand l'armoire est allumée, l'afficheur va montrer la température actuelle à l'intérieur de l'armoire.

DEL Indications:

DP1 :   Scintillant, indique changement d'un paramètre
               Allumé, indique que le compresseur est activé.

DP2 :   Allumé, indique que le dégivrage est activé.

DP3 :   Allumé, indique que l'évaporateur-ventilateur est activé.

Serrure de clavier :
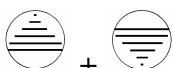
+ Presser ces boutons simultanément pendant 5 secondes pour bloquer, l'afficheur montre « Pof » ou pour débloquer, l'afficheur montre « Pon ».

Montrer la température réglée :

Presser ce bouton et l'afficheur montre la température réglée, presser encore une fois pour retourner à l'indication normale.

Montrer la température de l'évaporateur :

Réprimer ce bouton pour voir la température de l'évaporateur ; lâcher le bouton pour retourner à l'indication normale.

Régler la nouvelle température :

(SET) Presser ce bouton et l'afficheur montre la température réglée.

(≜) Presser ce bouton pour augmenter la température réglée.

(≡) Presser ce bouton pour baisser la température réglée.

(SET) Presser ce bouton pour garder le nouveau réglage, l'afficheur clignote avec la nouvelle température, puis il retourne à l'indication normale.

Changement des paramètres :

(SET) Réprimer ce bouton pendant 5 secondes pour être admis a la liste des paramètres, l'afficheur va montrer le numéro de paramètre, et après 2 secondes sa valeur.

(≜) Presser ce bouton pour augmenter la valeur.

(≡) Presser ce bouton pour baisser la valeur.

(SET) Presser ce bouton pour garder le nouveau réglage, l'afficheur clignote avec la nouvelle valeur, puis il montre le paramètre suivant.

Voir table des paramètres page 65.

Codes d'érreurs :

PF1   Clignotant dans l'afficheur signifie que la sonde du thermostat est défectueuse. L'armoire va tendre à maintenir la température réglée jusqu'à réparation.

PF2   Clignotant dans l'afficheur signifie que la sonde de l'évaporateur est défectueuse. Cela n'influence pas le fonctionnement de l'armoire, mais l'erreur doit être réparé dès que possible.

Dégivrage:

L'armoire se dégivre automatiquement avec des intervalles programmés. Si l'armoire est exposée aux ouvertures de la porte ou remplacements des marchandises très fréquents, un dégivrage manuel peut être nécessaire.

(≈) Presser ce bouton pendant plus de 3 secondes ; cela va lancer un dégivrage manuel et après retourner au fonctionnement normal.

L'eau de dégivrage est évacuée et s'évapore dans un récipient placé dans le compartiment compresseur.

Entretien :

Débrancher l'armoire pendant le nettoyage.

Le nettoyage de l'intérieur et l'extérieur de l'armoire doit être effectué par intervalles convenables à l'aide d'un produit à vaisselle non parfumé. L'armoire doit être essuyée minutieusement après le nettoyage. L'extérieur peut être maintenu avec un produit (creme, huile) pour l'inox.

Le filtre du condensateur (figure 2.1) peut s'enlever, ce qui permet de le nettoyer avec un aspirateur et éventuellement une solution savonneuse douce.

Figure 2.1
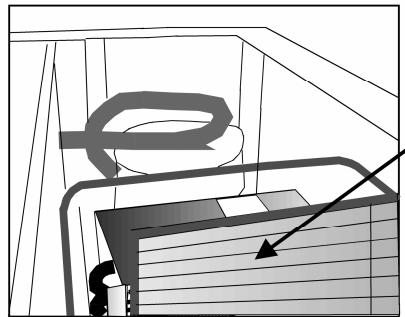
N'utiliser pas des produits à vaisselle chlorés ou d'autres produits aggrésifs, parce qu'ils pourraient causer la corrosion de l'acier inox et du système frigorifique interne.

Le condensateur et le compartiment compresseur doivent être nettoyés par l'aide d'un aspirateur et d'une brosse raide.

Ne laver jamais le compartiment compresseur à grande eau ; on risque les courts-circuits et les dégâts sur les éléments électriques de l'armoire.

Service:

Le système frigorifique est étanche à l'air ; il n'est donc pas nécesssaire de le surveiller, il suffit de le nettoyer.

Si l'armoire ne rafraîchit pas, vérifier que la fiche est bien enfoncée, que la fusible est intact et qu'il n'y a pas de coupure de courant.

Si vous ne pouvez pas trouver la cause du défaut, contacter votre revendeur. Informer la référence et le numéro de série de l'armoire, ce que vous pouvez trouver à l'intérieur de l'armoire sur l'étiquette placée en haut à droite.

Élimination:

Quand l'armoire usée doit être éliminée, il doit se passer d'une manière qui ne compromet pas l'environnement. Veuillez prendre note des règles d'élimination et examiner s'il existe des demandes et conditions spécifiques qu'il faut respecter.

$$\boxed{\text{I}}$$

Importanti nozioni di sicurezza

1. Per utilizzare correttamente l'apparecchio, consigliamo una lettura approfondita del presente libretto di istruzioni
2. Sarà responsabilità dell'utente finale fare in modo che l'apparecchio venga utilizzato in maniera propria.
3. In caso di qualsiasi malfunzionamento, l'utente è pregato contattare senza esitazioni il fornitore.
4. Installare l'apparecchio in un luogo asciutto e ventilato.
5. Mantenere il frigorifero al riparo da fonti di calore e non sottoporre l'oggetto alla luce del sole.
6. Sempre tenere in considerazione che tutti I dispositivi elettronici sono potenzialmente pericolose.
7. Non avvicinare o inserire materiale infiammabile (diluente, benzina,ecc.) al frigorifero.
8. Il fornitore dichiara che per l'oggetto non contiene sostanze inquinanti quali CFC e amianto.
9. L'olio del compressore non contiene PCB.

Rimozione dell'imballaggio e installazione.

Rimuovere il pallet di legno e l'imballo. Le superfici esterne sono ricoperte da una pellicola protettiva che deve essere rimosse prima dell'installazione.

Per assicurare un corretto funzionamento è necessario che l'apparecchio sia a livello. Nel caso il frigorifero sia dotato di piedini , questi possono essere regolati per ottenere un perfetto posizionamento.

Fig. 1.1
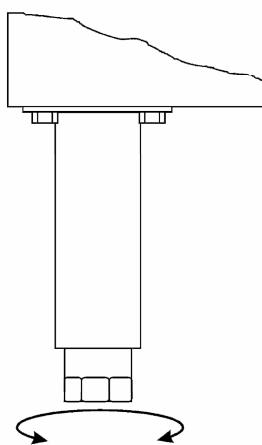
Se si desidera incassare il frigorifero, si prega di attenersi alle seguenti precauzioni:

1. Almeno 15 cm di spazio deve essere lasciato sopra il frigorifero per garantire un corretto funzionamento del sistema refrigerante.
2. Sul lato di fissaggio delle cerniere della porta è necessario tenere uno spazio adeguato per la pulitura dei cardini e per rimuovere le griglie interne.

Capovolgimento delle porte

NOTA BENE: il seguente procedimento deve essere fatto con le porte aperte!

Aprire il pannello frontale rimuovendo le viti come da figura 1.2. Rimuovere la vite di chiusura come mostrato in fig 1.3. Allentare la cerniera e estrarre la porta.
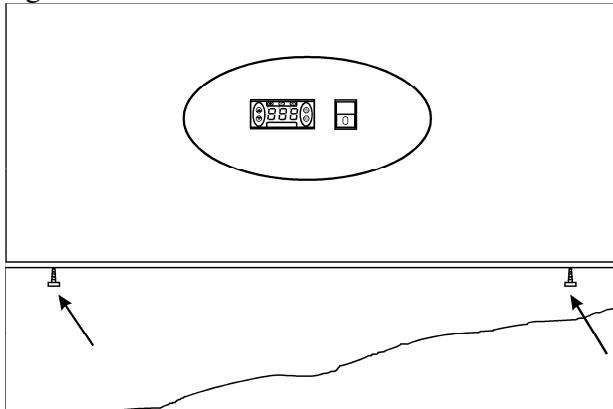
Fig. 1.2   Fig. 1.3
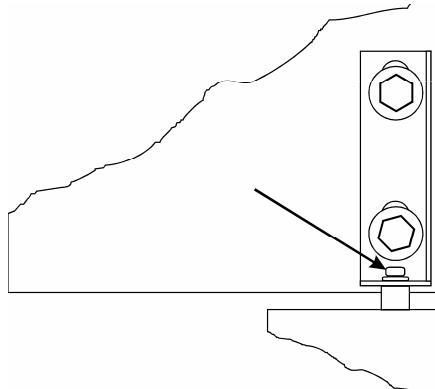
Invertire la posizione della cerniera a molla e del supporto in plastica, come da fig.1.4.

Fig. 1.4
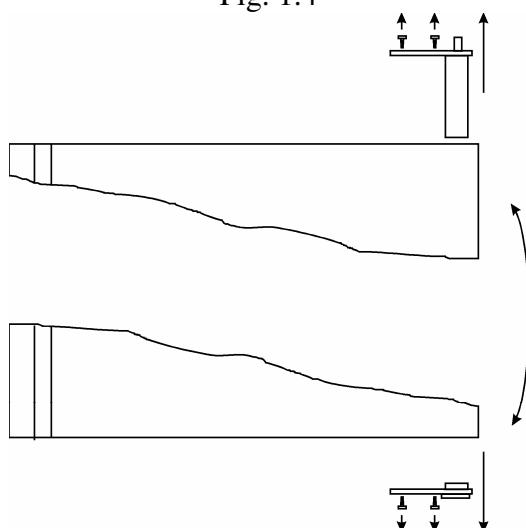
La cerniera in fondo può essere rimossa smontando i due piedini (o ruote) frontali e montandoli nel lato opposto dell'armadio; deve essere cambiata la posizione del perno da destra verso sinistra e successivamente rimontare i piedini. vedi fig. 1.5.

Fig. 1.5
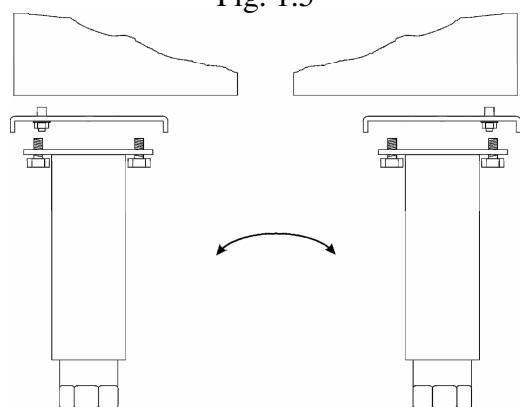
Fissati i piedini, vanno allentate le viti del supporto superiore ed inserita la porta. Controllare l'allineamento e il posizionamento della guarnizione magnetica. Successivamente, fissare definitamene le viti di fissaggio del supporto superiore.
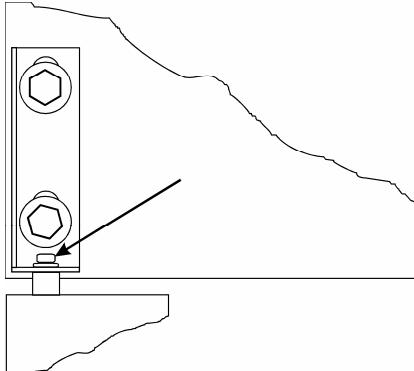
Fig. 1.6   Fig. 1.7
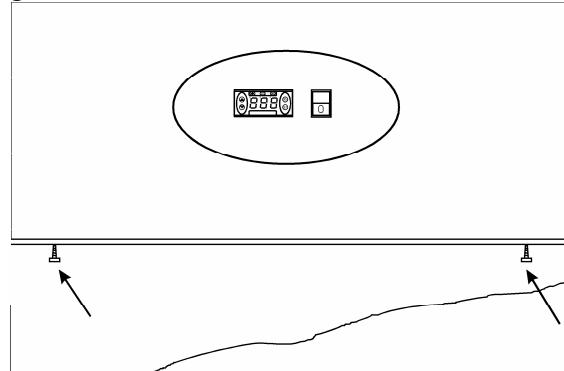
Inizializzazione dell'armadio

Prima dell'utilizzo, assicurarsi che l'armadio venga pulito, vedere paragrafo "manutenzione e pulizia"

Importante!
Se l'armadio è stato mantenuto in posizione orizzontale durante il trasporto, si prega di aspettare almeno 3 ore prima di procedure all'accensione dell'apparecchio.

Ricordarsi di rimuovere il dispositivo di sicurezza sul compressore. Rimuovere l'intera barra come mostrato in figura 1.8.

Fig. 1.8
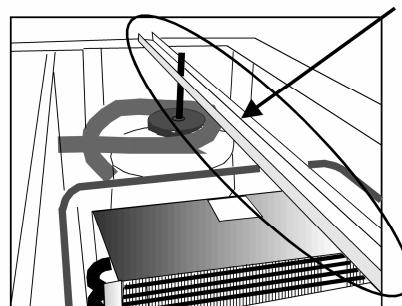
Connettere la presa dell'apparecchio ad una presa di corrente e premere l'interruttore posizionato sul pannello frontale, come nella fig.1.9.

Fig. 1.9
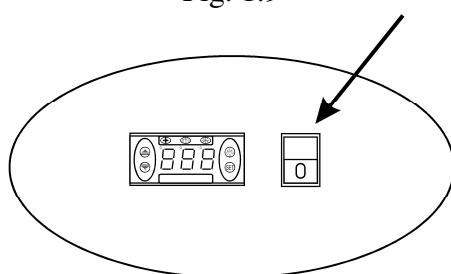
Termostato

Il termostato è posizionato sul pannello frontale, vedi fig 2.0.

Fig. 2.0
DP3   DP2   DP1
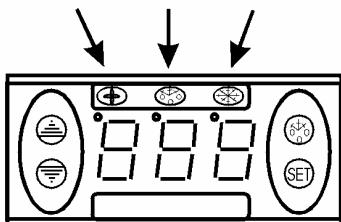
Il termostato è già stato configurato per un corretto funzionamento e nella maggioranza dei casi non sarà necessario modificare I parametric impostati.

Appena l'apparecchio viene acceso, si potrà leggere sul display la temperatura dell'armadio.

Indicazione dei LED:

DP1:   Lampeggiante, indica che il parametro è stato cambiato.
             Acceso, indica che il compressore è attivato.

DP2:   Acceso, indica che l'apparecchio è in fase di sbrinamento.

DP3:   Acceso, indica che la ventola dell'evaporatore è in funzione

Blocco della tastiera:
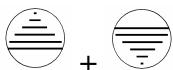
+ Per bloccare o sbloccare la tastiera, premere simultaneamente per circa 5 secondi
             (Per bloccare il display si legge Pof, per sbloccare si legge PON)

Visione della temperatura del vano interno:

Premere questo tasto per visualizzare sul display la temperature impostata. Nuovamente premuto, il display tornerà a visualizzare la temperatura corrente dell'apparecchio.

Visione della temperatura dell'evaporatore:

Premere il tasto "freccia in alto" per visionare la temperatura dell'evaporatore; rilasciato il tasto, la visualizzazione sarà nuovamente quella standard.

Impostare una nuova temperature:

(SET) Premere questo tasto per visionare la temperature impostata.

(↑) Premere il tasto "freccia in alto" per aumentare la temperature.

(↓) Premere il tasto "freccia in giù" per abbassare la temperature.

(SET) Premere il tasto "SET" per memorizzare I nuovi parametric. Il display lampeggerà mostrando il nuovo valore impostato per tornare, subito dopo, a visualizzare il corrente valore di temperatura.

Cambio dei parametri:

(SET) Tenere premuto il tasto "SET" per almeno 5 secondi in modo da accedere alla lista dei parametri. Il display visualizzerà il numero dei parametri e, dopo 2 secondi, il valore.

(↑) Premere il tasto "freccia in alto" per aumentare I valori.

(↓) Premere il tasto "freccia in basso" per abbassare I valori.

(SET) Premere il tasto SET per memorizzare I nuovi parametric. Il display lampeggerà mostrando i nuovi valori impostati per poi tornare a visualizzare i valori correnti.

Vedi elenco dei parametri a pag. 65

Codici di allarme:

PF1 Lampeggiante sul display: indica che la sonda nel frigorifero è difettosa.
L'apparecchio terrà la temperatura impostata fino alla riparazione.

PF2 Lampeggiante sul display: indica che la sonda dell'evaporatore è difettosa.
Ciò non influenza l'operatività dell'apparecchio, ma deve essere riparata nel più breve tempo possibile.

Sbrinamento

L'apparecchio è impostato per effettuare lo sbrinamento ad intervalli regolari. Se la porta rimane aperta o il contenuto viene cambiato di frequente, può essere necessario impostare manualmente lo sbrinamento.

(❄) Tenendo premuto il tasto per un tempo superiore a 3 secondi, lo sbrinamento manuale avrà inizio per tornare successivamente ad un funzionamento standard.

L'acqua di sbrinamento convoglia ad un contenitore posto nell'unità motore per poi evaporare automaticamente.

Manutenzione e pulizia.

Scollegare la presa di corrente.

L'apparecchio deve essere periodicamente pulito. Pulire le superfici interne ed esterne utilizzando detergenti non aggressivi, asciugare successivamente. Le superfici esterne possono essere pulite non aggressivi
Rimuovere il filtro del condensatore (vedi Fig.2.1) ed utilizzare un aspirapolvere o una soluzione detergente non aggressiva per pulirlo; tenere in considerazione che il filtro deve essere pulito una volta a settimana.

Fig. 2.1
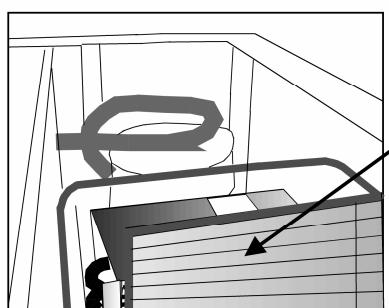
 Non utilizzare detergenti a base di cloro o altri componenti dannosi; essi potrebbero danneggiare la superficie dell'acciaio inossidabile e il sistema di raffreddamento interno.

Pulire il condensatore e l'unità motore utilizzando un aspirapolvere.

NON lavare l'unità motore con acqua in quanto altamente rischioso per le parti elettriche e potrebbe recare danni seri all'operatore. Irreparabili corto circuiti possono manomettere il corretto funzionamento dell'apparecchio.

Assistenza

Il sistema refrigerante è sigillato ermeticamente e non richiede manutenzione,ma solo una periodica pulizia.

Se l'apparecchio non raffedda, assicurarsi di non aver problemi con la rete elettrica.

Se l'eventuale danno non è localizzabile, non esitate a contattare il fornitore. Per assicurarsi una corretta assistenza, fornire il modello ed il numero seriale dell'apparecchio riportati sull'etichetta posta sul lato destro del vano interno e sul retro dell'apparecchio.

Smaltimento

Lo smaltimento dell'apparecchio deve essere effettuato in accordo con le norme di prevenzione dell'ambiente. Vi sono specifici procedimenti che devono essere seguiti in accordo con le normative nazionali vigenti.

Importantes instrucciones de seguridad

1. Para obtener el uso completo y adecuado del aparato, recomendamos leer este manual de instrucciones.
2. Es responsabilidad del usuario el manejo adecuado del aparato, de acuerdo con las instrucciones dadas.
3. Contacte a su comerciante inmediatamente en caso de cualquier funcionamiento defectuoso.
4. Coloque el aparato en un lugar seco y ventilado.
5. Mantenga el aparato totalmente alejado de cualquier fuente de calor y no lo exponga a la luz directa del sol.
6. Tenga siempre presente que todo dispositivo eléctrico es una fuente potencial de peligro.
7. No almacene material inflammable tal como gas, gasolina, éter ó similares en el aparato.
8. No ha sido utilizado ningún asbesto ni CFC en la construcción.
9. El aceite en el compresor no contiene TCI.

Desembalaje e instalación

El aparato se entrega embalado y en un palet, desembálelo. Las superficies exteriores están forradas con un plástico protector, quítelo antes de hacer la instalación.

Para asegurar el funcionamiento correcto, es importante que el aparato esté plano y horizontal después de la instalación. Si el aparato ha sido suministrado con patas, estas pueden ser ajustadas, ver fig. 1.1.

Fig. 1.1
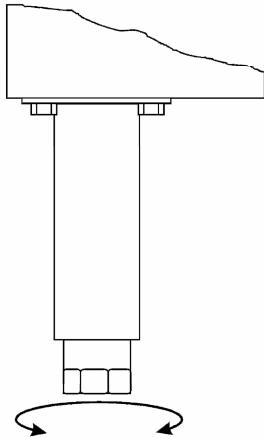
Si el aparato va ha ser empotrado, deberá tener en cuenta lo siguiente:

1. Debe de haber por lo menos 15 cm de espacio libre por encima del aparato, para que el sistema de refrigeración trabaje satisfactoriamente.
2. Debe de haber espacio suficiente hacia la pared, e igualmente del lado de la visagra, para que se puedan cambiar los estantes y limpiar alrededor de la visagra.

Cambio de la puerta

Recuerde, que se debe hacer con la puerta abierta.

Abra la parte alta quitando los tornillos mostrados en Fig. 1,2. Quite la contratuerca del resorte de la puerta, como se muestra en Fig. 1,3. Afloje la bisagra y quite la puerta.
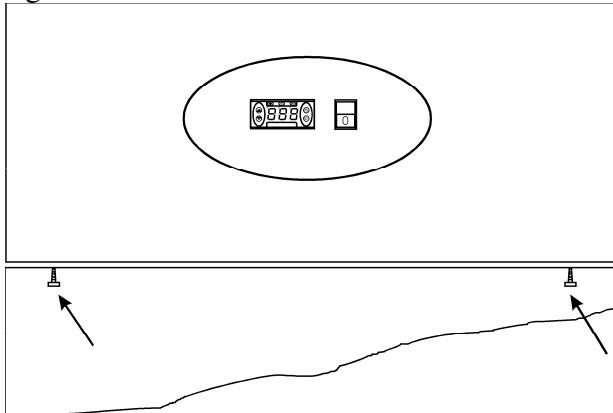
Fig. 1.2   Fig. 1.3
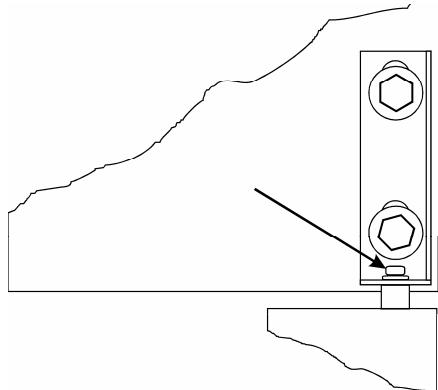
La puerta se coloca horizontalmente abajo, y después se pasa a invertir el resorte de la puerta y el casquillo/manguito del fondo, ver Fig. 1.4.

Fig. 1.4
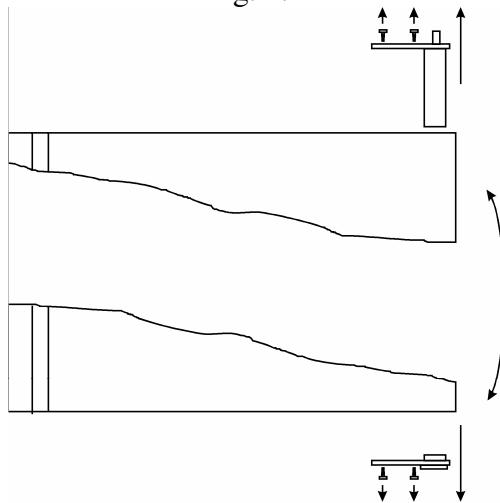
La bisagra inferior es invertida desmontando las patas/las ruedas delanteras, y después las monta en el otro lado del aparato, ver Fig. 1.5.

Fig. 1.5
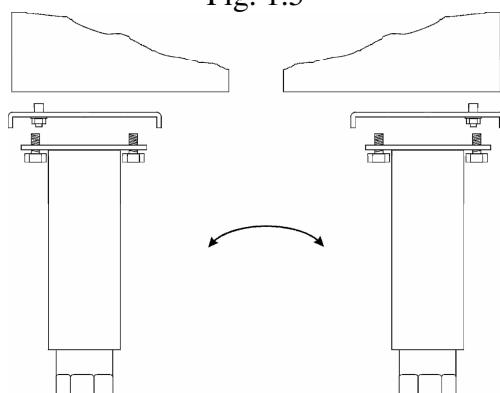
En el lado de la nueva visagra, afloje la visagra de arriba, y coloque la puerta en la visagra de abajo. La visagra se ajusta/aprieta en el resorte de la puerta para que se quede fija. Coloque la contrapuerca, como en Fig. 1.6, cierre y fije la parte superior con los tornillos ver Fig. 1.7.
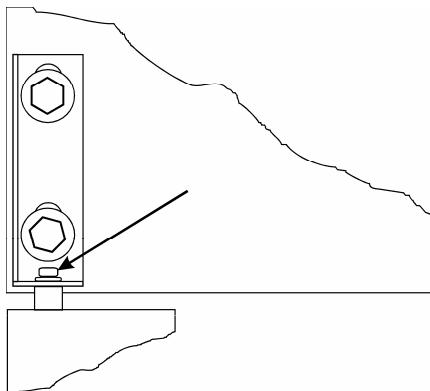
Fig. 1.6   Fig. 1.7
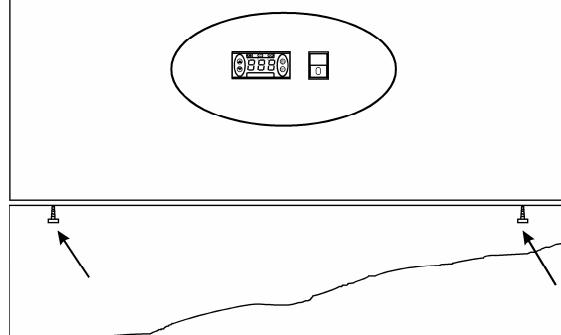
Conexión eléctrica

El aparato está hecho para una conexión de 230-240 V/50 Hz.

Las conexiones eléctricas principales deben ser hechas por electricistas autorizados.

Puesta en marcha del aparato

Antes de su uso, recomendamos que el aparato se limpie, vea la sección de mantenimiento y limpieza.

Importante !
Si el aparato ha sido colocado horizontalmente durante su transporte, espere, por favor, 2 horas antes de la puesta en marcha del aparato.
Recuerde quitar el dispositivo de seguridad de transporte en el compresor. Quite la barra entera, como se muestra en fig. 1.8.

Fig. 1.8
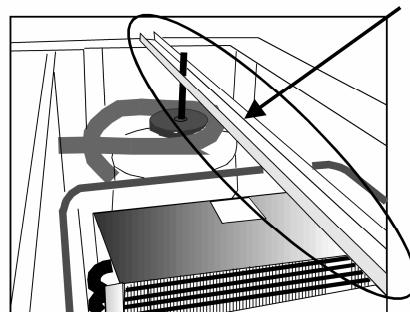
Conecte el aparato a un enchufe, y encienda el interruptor en el tablero de control, ver Fig. 1.9.

Fig. 1.9
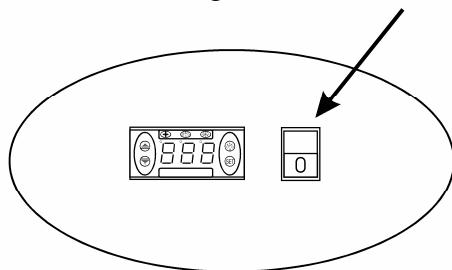
Termostato

El termostato está colocado en el tablero de control, ver fig. 2.0.

Fig. 2.0
DP3   DP2   DP1
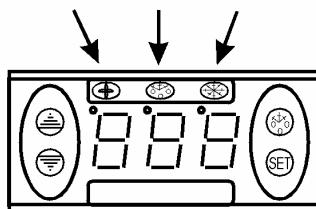
El termostato ya está programado para este aparato. En la mayoria de los casos, no es necesario ajustar las posiciones.

Al encender el aparato, el display/pantalla mostrará la temperatura actual en el aparato.

LED de indicaciones:

DP1:   Destellando, indica que un parámetro está cambiando.
            Encendido, indica que el compresor está activado.

DP2:   Encendido, indica que la descongelación está activada.

DP3:   Encendido, indica que el ventilador de evaporacion está activado.

Cierre del teclado:
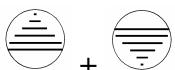
+   Para cerrar o activar el teclado, apriete estas teclas simultáneamente durante 5 segundos.
(Para cerrar, la pantalla muestra 'POF', para activar, la pantalla muestra 'PON')

Para indicar temperatura:

(SET) Apriete esta tecla y la pantalla mostrará la temperatura fija. Apriete la tecla otra vez para normalizar la lectura.

Para indicar temperatura de evaporación:

Apriete continuamente esta tecla para mostrar la temperatura de evaporación, suelte para normalizar la lectura.

Cambio a nueva temperatura:

Apriete esta tecla, la pantalla mostrará la temperatura fija.

Apriete esta tecla para aumentar la temperatura fija.

Apriete esta tecla para bajar la temperatura fija.

Apriete esta tecla para guardar la nueva posición. La pantalla destellará con el nuevo valor, y después volverá a la lectura normal.

Cambio de parámetros:

Apriete esta tecla continuamente durante 5 segundos para conseguir acceso a la lista de parámetros. La pantalla muestra el número de parámetro y después de 2 segundos el valor de este.

Apriete esta tecla para aumentar el valor.

Apriete esta tecla para bajar el valor.

Apriete esta tecla para guardar la nueva posición. La pantalla destellará con el nuevo valor y después volverá a la lectura normal.

Vea lista de parámetros en la página 65.

Codigos de alarma:

PF1 Destellando en la pantalla, indica que el sensor del aparato está defectuoso.
El aparato se esforzará por mantener la temperatura fija hasta que haya sido reparado.

PF2 Destellando en la pantalla, indica que el sensor de evaporación está defectuoso.
Esto no influye en el funcionamiento del aparato, pero debe ser reparado, tan pronto como sea possible.

Descongelación

El aparato descongela automáticamente con intervalos fijos programados. Si la puerta del aparato está abierta o el contenido del aparato se cambia con frecuencia, puede llegar a ser necesario descongelar el aparato manualmente.

Apriete esta tecla continuamente, más de 3 segundos, esto activará una descongelación manual, y después volverá a operar normalmente.

El agua de la descongelación circula para su evaporación a un contenedor, que está situado en el compartimento del compresor.

Mantenimiento y limpieza

Apague el aparato desde el enchufe.

El aparato debe ser limpiado periódicamente. Limpie las superficies externas e internas del aparato con una solución ligera de jabón, y seque bien. Las superficies externas pueden mantenerse limpias con un aceite especial para acero.

Quite el filtro del condensador (ver fig. 2.1), y lo limpie con una aspiradora y, si es necesario use una solución ligera de jabón.

Fig. 2.1
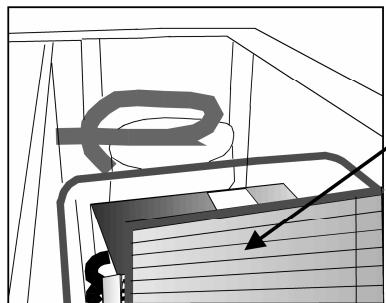
No utilice limpiadores que contienen cloro u otros productos agresivos, pues pueden dañar las superficies inoxidables del acero y el sistema interior de refrigeración.

Limpie el condensador y el compartimento del compresor con la ayuda de un aspirador y un cepillo duro.

No riegue con una manguera el compartimento del compresor, ya que el agua puede causar cortocircuitos y daño en las partes eléctricas.

Servicio técnico

El sistema de refrigeración es un sistema herméticamente sellado, y no requiere supervisión, sólo limpieza.

Si el aparato falla en la refrigeración, verifique que la razón no sea un apagón, bien desde el enchufe o de los plomos.

Si no puede localizar la razón del fallo del aparato, contacte, por favor, a su suministrador. Informe, por favor, del modelo y el número de serie del aparato.Usted puede encontrar esta información en la etiqueta que está colocada dentro del aparato arriba, a mano derecha.

Como deshacerse del aparato

Cuando se tenga que deshacer del aparato, deberá hacerlo teniendo en cuenta las normas al respecto. Puede que haya unas exigencias y condiciones que se deban cumplir.

Instruções importantes de segurança

1. Para se obter uma utilização plena desta arca vertical, recomendamos-lhe que leia este manual de instruções.
2. A utilização do aparelho de acordo com as instruções fornecidas é da inteira responsabilidade do utilizador.
3. Contacte imediatamente o distribuidor em caso de avarias.
4. Coloque a máquina num local seco e ventilado.
5. Mantenha o aparelho afastado de fontes de calor intenso e não o exponha a luz solar directa.
6. Tenha sempre presente que qualquer dispositivo eléctrico é uma fonte de perigo potencial.
7. Não armazene na arca quaisquer materiais inflamáveis, como diluente, gasolina, etc.
8. Declara-se que não foi usado amianto ou CFC na construção deste aparelho.
9. O óleo no compressor não contém PCB.

Desembalagem e instalação

Retire a palete de madeira e a embalagem. As superfícies externas encontram-se revestidas com uma película de protecção que deverá ser removida antes da instalação.

Para garantir o correcto funcionamento da arca, é importante que esta esteja nivelada. Se a arca tiver pés, estes podem ser ajustados. Veja a fig. 1.1.

Fig. 1.1
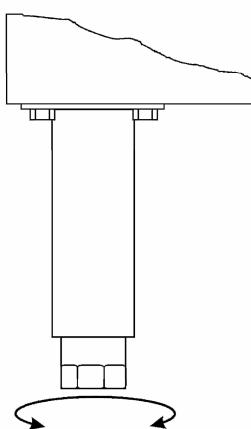
Se pretender configurar a sua arca à sua medida, tenha atenção aos aspectos seguintes:

1. Deverá ser deixado um intervalo de, pelo menos, 15 cm acima da arca para o sistema de arrefecimento trabalhar de forma satisfatória.
2. Deverá haver espaço suficiente do lado da dobradiça para limpar e substituir as prateleiras, e para limpeza em redor das dobradiças.

Inversão da porta

NOTE que o procedimento seguinte deverá ser levado a cabo com a porta aberta!

Abra a parte superior retirando o parafuso mostrado na fig. 1.2. Retire o parafuso de fixação na mola da porta como mostrado na fig. 1.3. Desaperte o a dobradiça e retire a porta.

Fig. 1.2
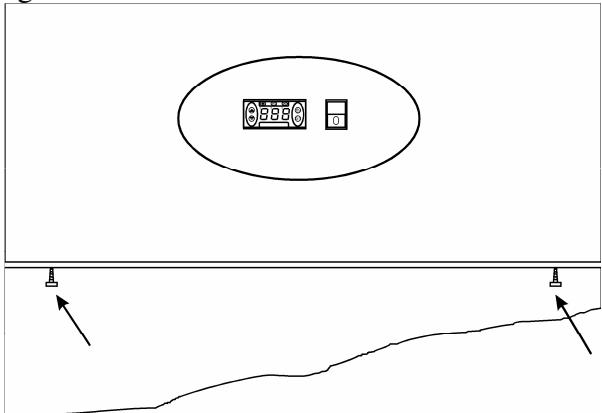
Fig. 1.3
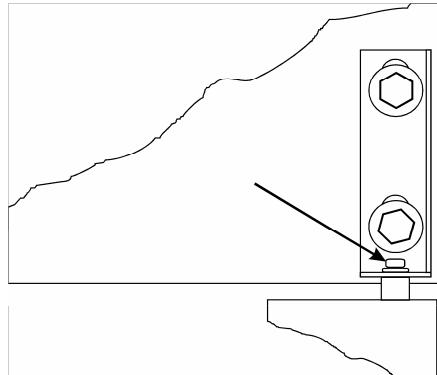
A porta é colocada na horizontal e a mola da porta e o apoio inferior são invertidos, como mostrado na fig. 1.4.

Fig. 1.4
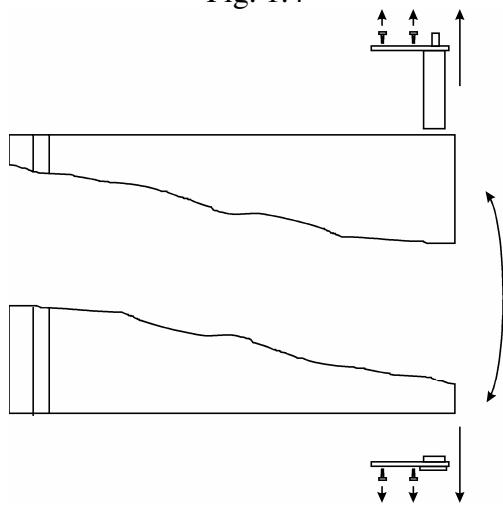
A dobradiça inferior é invertida desmontando-se o pé/roda dianteira e tornando a montar-se no outro lado da arca, conforme mostrado na fig. 1.5.

Fig. 1.5
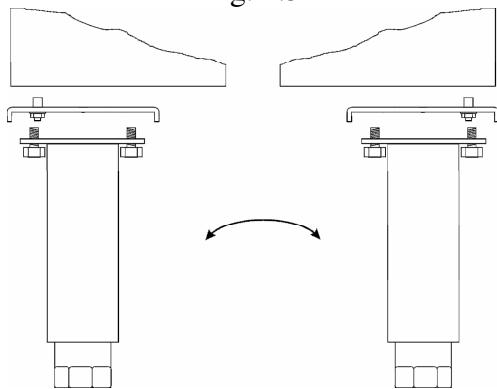
Desaperte a dobradiça superior na sua nova posição e substitua a porta na dobradiça inferior. A dobradiça é pressionada para baixo na mola da porta e é apertada. Coloque o parafuso de fixação, como mostrado na fig. 1.6, feche e aperte a parte de cima com o parafuso, como se vê na fig. 1.7.

Fig. 1.6
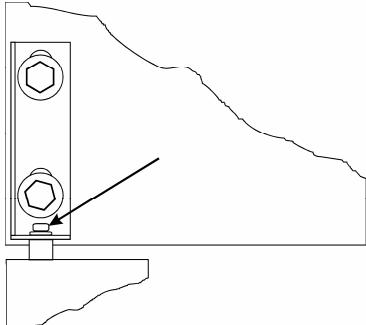
Fig. 1.7
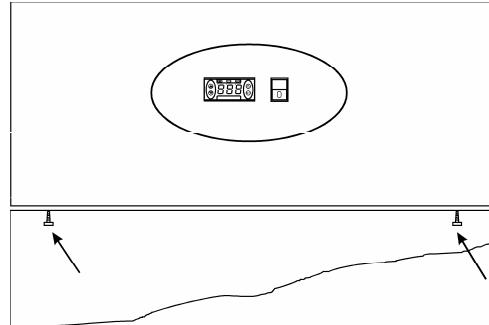
Ligações Eléctricas

A arca funciona a 230 V/50 Hz.

A tomada de parede deverá estar facilmente acessível.

Todas as ligações à terra estipuladas pelas autoridades eléctricas locais deverão ser observadas. A ficha da arca e a tomada de parede deverão fornecer a ligação à terra adequada. Se houver qualquer dúvida, contacte o distribuidor local ou um electricista qualificado.

O cabo flexível fornecido com este aparelho possui três contactores para utilização com uma tomada de três pinos de 13 amperes ou três pinos de 15 amperes. Se for usado uma tomada 1363 com fusível (13 Amp), esta deverá estar equipada com um fusível de 13 amperes.

A cablagem deste cabo de alimentação possuem cores de acordo com o código seguinte: Verde/Amarelo: Terra, Azul: Neutro, Castanho: Fase.

As principais ligações eléctricas deverão ser executadas por electricistas credenciados.

Arranque da arca

Antes de utilizá-la, recomendamos que a arca seja limpa; consulte a secção sobre manutenção e limpeza.

Importante!
Se a arca tiver sido colocada na horizontal durante o transporte, aguarde duas horas até ligá-la. Lembre-se de retirar o dispositivo de segurança do compressor. Retire a barra completa, conforme mostrado na fig. 1.8.

Fig. 1.8
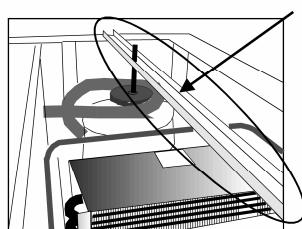
Ligue a arca a uma tomada de parede e ligue o interruptor no painel de controlo; veja fig. 1.9.

Fig. 1.9
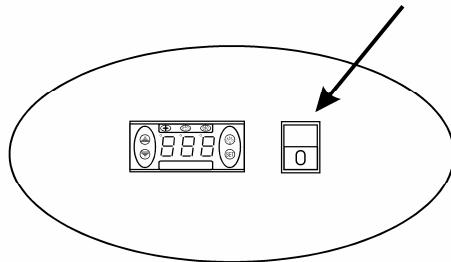
Termostato

O termóstato encontra-se no painel de controlo, como se mostra na fig. 2.0.

Fig. 2.0
DP3   DP2   DP1
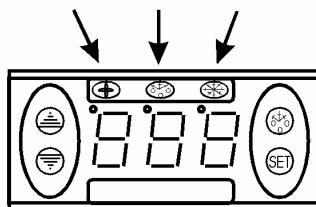
O termóstato foi pré-regulado e, na maioria dos casos, não é necessário qualquer ajuste.

Quando a arca é ligada, o visor irá exibir a temperatura actual na câmara.

LED de aviso

DP1:   Quando estiver a piscar, indica que o parâmetro está a ser alterado.
            Ligado, indica que o compressor está activo.

DP2:   Ligado, indica que a descongelação está a ter lugar.

DP3:   Ligado, indica que a ventoinha de evaporação está activa.

Bloqueio do teclado :
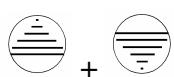
+ Para bloquear ou desbloquear o teclado, prima estas teclas simultaneamente durante cerca de 5 segundos (para bloquear, o visor exibe "Pof", para desbloquear, o visor exibe "Pon").

Exibir a temperatura definida:

(SET) Pressione este botão e o visor vermelho irá exibir, piscando, a temperatura definida. Prima a tecla novamente para regressar à leitura normal.

Exibir a temperatura do evaporador:

Prima esta tecla continuamente para exibir a temperatura do evaporador, liberte-a para regressar à leitura normal.

Definir uma nova temperatura:

Pressione este botão e o visor vermelho irá exibir a temperatura definida.

Pressione este botão para aumentar a temperatura definida.

Pressione este botão para diminuir a temperatura definida.

Pressione este botão para guardar o novo parâmetro. O visor irá exibir o novo valor a piscar e regressará à leitura normal.

Alteração de parâmetros:

Prima esta tecla continuamente durante 5 segundos para aceder à lista de parâmetros. O mostrador indicará o número do parâmetro e o respectivo valor 2 segundos depois.

Pressione este botão para aumentar o valor.

Pressione este botão para diminuir o valor.

Pressione este botão para guardar o novo parâmetro. O visor irá exibir o novo valor a piscar e regressará à leitura normal.

Consulte a tabela de parâmetros na página 65.

Códigos de Alarme:

PF1 A piscar no visor: indica que o sensor da arca tem uma anomalia.
A arca irá tentar manter a temperatura até que o sensor seja reparado.

PF2 A piscar no visor: indica que o evaporador da arca tem uma anomalia.
Isso não influencia o funcionamento da arca mas deverá ser reparado o mais rapidamente possível.

Descongelamento

A arca descongela automaticamente em intervalos pré-definidos. Se houver frequentes aberturas da porta da arca ou mudanças do conteúdo, poderá ser necessário descongelar a arca manualmente.

Se este botão for premido continuamente durante mais de 3 segundos, dá-se início à descongelação manual e depois regressará ao funcionamento normal.

A água daí resultante é recolhida num receptáculo colocado no compartimento do compressor e depois evapora.

Manutenção e Limpeza

Desligue a arca da tomada de parede.

A arca deve ser limpa periodicamente. Limpe as superfícies interna e externa da arca com uma solução ligeiramente ensaboada e seque de seguida. As superfícies externas poderão ser conservadas com um óleo de máquina.

Retire o filtro do condensador (ver fig. 2.1) e limpe-o com um aspirador e, se necessário, com uma solução ligeiramente ensaboada.

Fig. 2.1
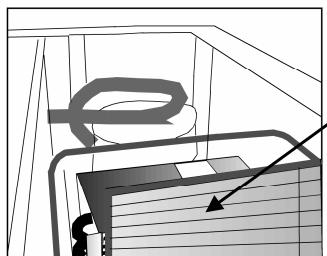
NÃO utilize produtos de limpeza que contenham cloro ou produtos abrasivos pois poderão danificar as superfícies de aço inoxidável e o sistema de arrefecimento interno.

Limpe o condensador e o compartimento do compressor utilizando um aspirador e uma escova de cerdas duras.

NÃO lave à mangueira o compartimento do compressor pois poderá provocar curto-circuitos e danos às partes eléctricas.

Assistência Técnica

O sistema de arrefecimento é hermeticamente selado e não requer supervisão; apenas limpeza.

Se a arca não arrefecer, verifique se isso se deve a uma falta de electricidade.

Se não conseguir diagnosticar a causa da falha da arca, contacte o distribuidor. Informe o modelo e o número de série da arca. Poderá encontrar esta informação na etiqueta de características localizada na parte de dentro da arca, do lado superior direito.

Eliminação

A eliminação da arca deverá efectuar-se de modo ambientalmente correcto. Aquando da eliminação, tenha em consideração a legislação existente. Poderá haver requisitos e condições especiais a serem observados.

Внимание

1. Перед использованием шкафа необходимо прочитать инструкцию.
2. Пользователь несёт ответственность за использование шкафа в соответвии с инструкциями.
3. В случае неполадков свяжитесь с дистрибьютором.
4. Шкаф должен быть расположен в сухом и хорошо проветриваемом помещении.
5. Не допускается установка изделия вблизи источников теплового излучения, т.е.плит, батарей отопления и т.п., а также в местах действия прямых солнечных лучей.
6. Обратите внимание на то, что любой електрический аппарат может быть опасным.
7. Нельзя использовать для хранения взрывоопасных веществ, таких как например газ. бензин и т.п.
8. В конструкции изделия не использованы асбест или CFC.
9. Компрессорное масло не содержит PCB

Распаковка и установка

Шкаф поставляется в упаковке и на деревянных платформах. Шкаф надо распаковать и снять с платформ, необходимо также снять предохраняющую полиэтиленовую пленку.

Для правильной работы шкафа, место установки должно быть ровным, прочным и жёстким. Если прилагаются ножки, то вмонтируйте их, см. фигуру 1.1.

Рис.1.1
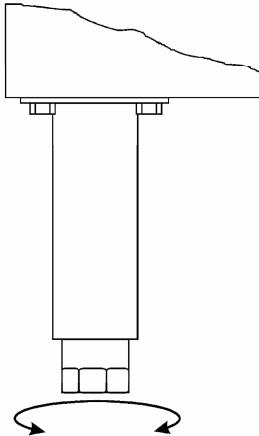
В случае, если шкаф должен встраиваться, обратите внимание на следующее:
1. Для безупречной работы системы охлаждения, над шкафом должно быть свободное расстояние не менее 15 см, обепечивающее свободную циркуляцию воздуха.
2. Свободное расстояие от стенок и до боковых сторон двери шкафа, должно быть достаточным, чтобы обеспечить легкую и удобную замену полок.

Установка двери в противоположную сторону

ВНИМАНИЕ! Устанавливать только при открытых дверях.
Открутите винты и откройте верхнюю часть шкафа, как показано на рисунке 1.2, снимите болты, дверь освободится и легко отойдёт, рис.1.3.
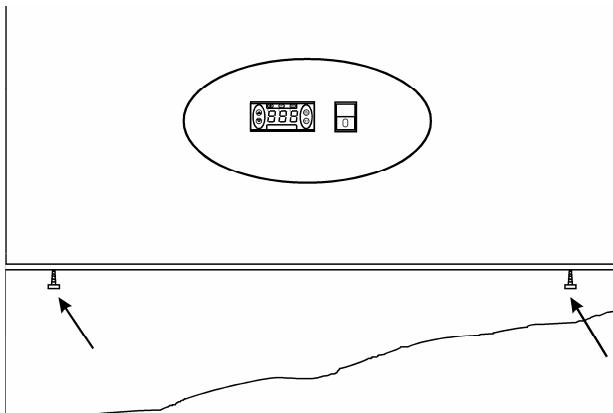
Рис. 1.2   Рис. 1.3
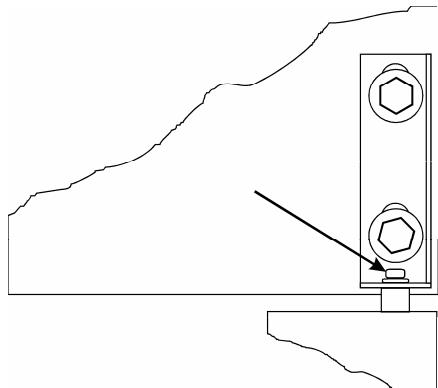
Положите дверь на пол и поменяйте держатель и пружину на другую сторону, рис.1.4.

Рис. 1.4
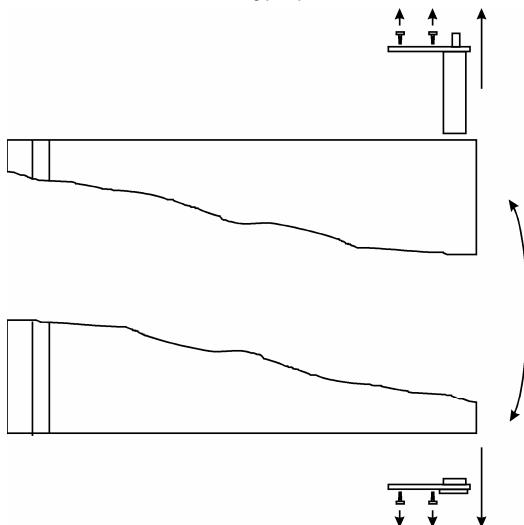
Нижняя дверная петля откручивается после снятия передних ножек, после чего ножки встраиваются на противоположную сторону, рис.1.5.

Рис. 1.5
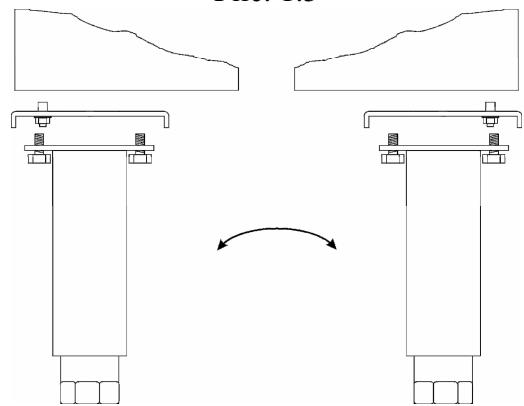
После того как все детали вмонтированы на противоположной стороне, расслабьте верхние петли , поставьте дверь на место, надстроив на нижние петли. Вставьте винт, как показано на рис.1.6. и закрепите верхнюю часть, рис.1.7.

Рис. 1.6
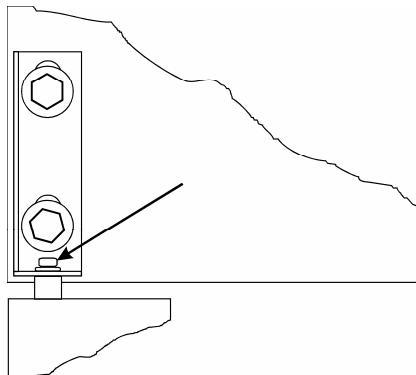
Рис. 1.7
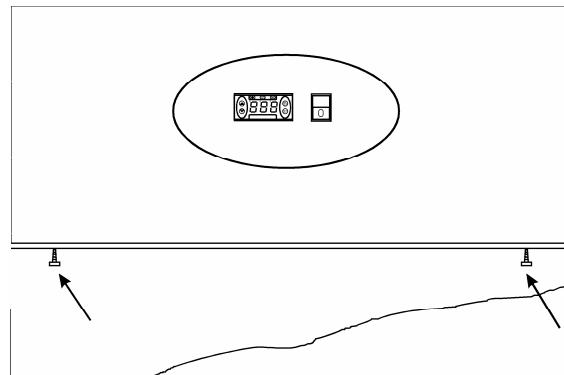
Подключение к электросети

Шкаф должен быть подключён к питающей электрической сети 220-240 V/50Hz.
Розетка должна находится в легко доступном месте. Подключение к электросети допускается только через стационарную розетку или удлинитель с заземляющим проводом.

Запуск

Перед использованием шкаф необходимо почистить, см. раздел «Обслуживание».

Внимание!
Если шкаф при перевозке находился в лежачем состоянии, подождите 2 часа до того как влючать его в электросеть.
Не забудьте снять с компрессора защитное устройства защищающее от повреждений при перевозке, рис.1.8.

Рис. 1.8
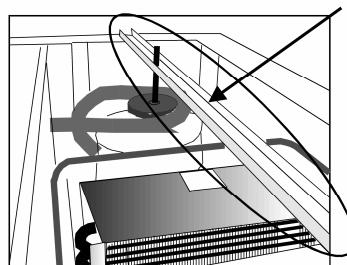
Включите к электросети и нажмите на кнопку-включатель на контрольной панели Рис.1.9.

Рис. 1.9
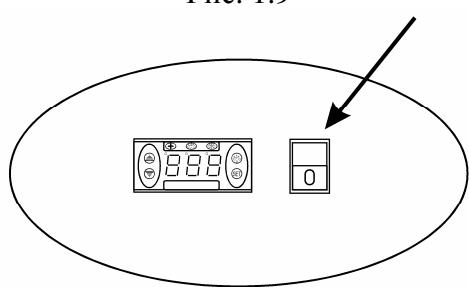
Термостат

Термостат находится на контрольной панели, рис.2.0.

Рис. 2.0
DP3   DP2   DP1
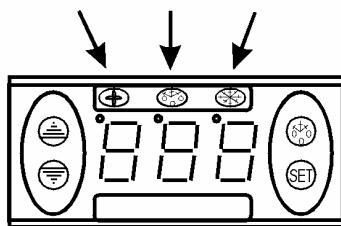
Термостат запрограммирован, поэтому нет необходимости в его настройке.

При включении шкафа, на экране дисплея появится актуальная внутренняя температура шкафа.

Значение показателей на дисплее:

DP1: Мигающая лампа означает, что данный параметр меняется.
        Горящая лампа указывает на то, что компрессор работает.
DP2: Горящая лампа указывает на то, что включено размораживание.
DP3: Горящая лампа указывает на то, что включен испаритель-вентилятор.

Блокирование кнопок.
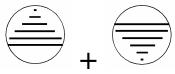
+   Для избежания случайных нажиманий на кнопки, их блокируют. Для этого нажмите одновременно на обе кнопки в течение 5 секунд пока на экране не появится «Pof». Для разблокирования повторите тоже самое, пока на экране не появится «Pon»

Показ внутренней температуры:

(SET)   Нажмите на данную кнопку и на экране дисплея покажется настроенная температура. Чтобы вернуться в исходное положение надо ещё раз нажать на кнопку.

Показ температуры испарителя:

При нажатии на данную кнопку покажется температура испарителя. Для того чтобы вернуться в исходное положение, отпустите кнопку.

Настройка температуры:

(SET) При нажатии на эту кнопку,на экране появится актуальная температура.

(≜) При нажатии на данную кнопку, температура возрастает.

(≡) При нажатии на данную кнопку, температура снижается.

(SET) Нажмите на эту кнопку, чтобы запомнить/зарегистрировать новые данные.

Регулирование температуры

(SET) Нажмите на кнопку в течение 5 секунд и получите доступ к списку данных.

(≜) Нажмите на кнопку для увеличения данных

(≡) Нажмите на кнопку для снижения данных

(SET) Нажмите на эту кнопку, чтобы установить необходимую температуру, на дисплее должна замигать требуемая температура.

См.таблицу параметров на стр. 65.

Аварийная сигнализация

PF1 – Мигающая лампа указывает на повреждение датчика.
      Температура шкафа будет неизменяемой пока шкаф не отремонтируется.
PF2 - Мигающая лампа указывает что повреждён датчик испарителя.
      Это не влияет на работу шкафа, но следует починить как можно скорей.

Размораживание шкафа

Шкаф размораживается автоматически с запрограммированными интервалами.
В случае частого открывания дверцы шкафа может возникнуть необходимость ручного размораживания.

(❄) Механическое размораживание запускается при помощи нажатия на данную кнопку более 3 секунд, после чего изделие запускается как обычно.

Оттаявщая вода стекается в ванночку расположенную в компрессорном отделе.

Техобслуживание

Отключите шкаф от сети.

Шкаф необходимо регулярно чистить. Мойка изделия производится теплой водой с небольшим количеством мыльного средства. После чего шкаф промыть чистой водой и просушить.
Чистка конденсаторного фильтра (Рис.2.1) производится с помощью пылесоса и водой с небольшим кол-вом мыльного средства.

Рис. 2.1
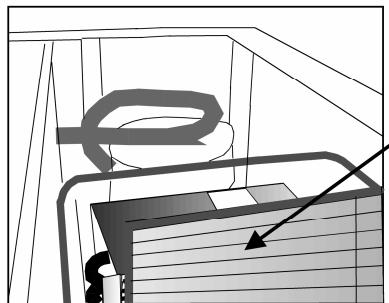
ЗАПРЕЩАЕТСЯ использовать хлоросодержащие моющие средства или другие едкие средства, которые могут повредить работе шкафа.

Чистка конденсатора производится при помощи пылесоса и жесткой щетки.

Избегайте попадания воды в компресорный отдел, т.к. это может привести к замыканию и повреждению электрических деталей шкафа.

Устранение неполадок

При неполадках в холодильной системе проверьте вставлена ли вилка в розетку и подключена ли розетка, а также если нет неполадков в сети.
Если причину неисправности не возможно выяснить, обратитесь к дилеру. Обращаясть к дилеру, назовите модель холодильника, серийный номер и номер изделия. Эти данные указаны на заводской табличке с правой стороны на внутренней панеле шкафа.

Утилизация

Если срок эксплуатации изделия подошёл к концу, его следует утилизировать без нанесения вреда окружающей среде. Следует принимать во внимание существующие правила утилизации. Помимо этого могут существовать определённые законодательные требования по утилизации, которым тоже необходимо следовать.

Front
RK/RF
1480
1370

Front
BK/BF/IF/RK/RF
740
630
335
1525

Side
RK/RF
830
760

Side
BK/BF/IF
990
920
1860
2010
150

59

Front
RK/RF

1365

Front
BK/BF/IF/RK/RF

625

Side
RK/RF

700

1400

Side
BK/BF/IF

860

1400

x23

55

70

140

180

145
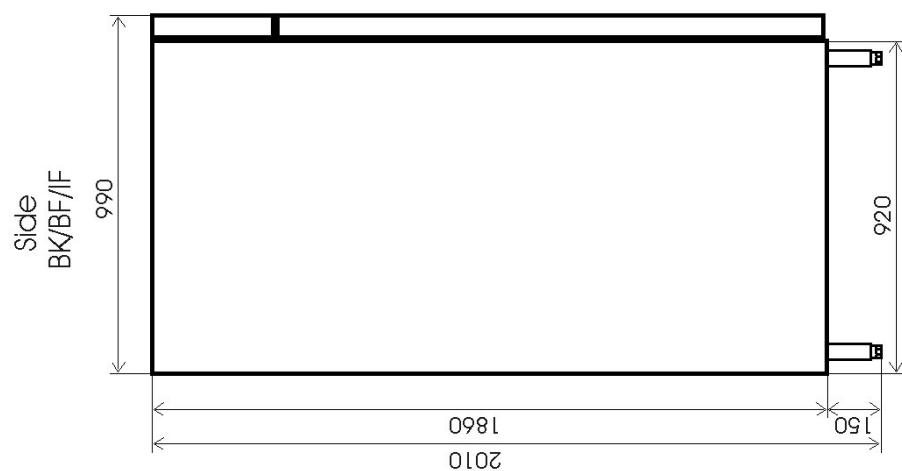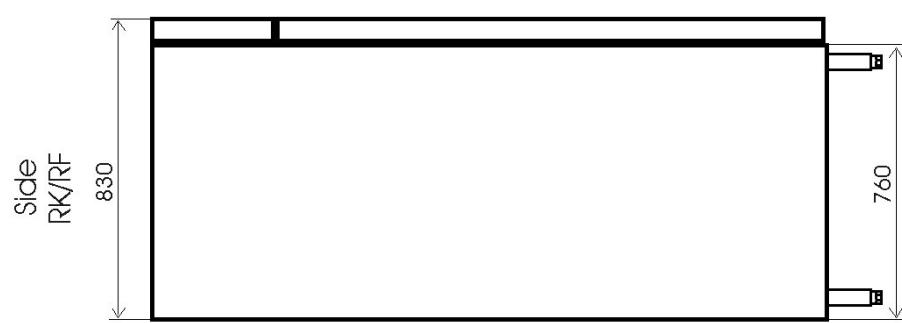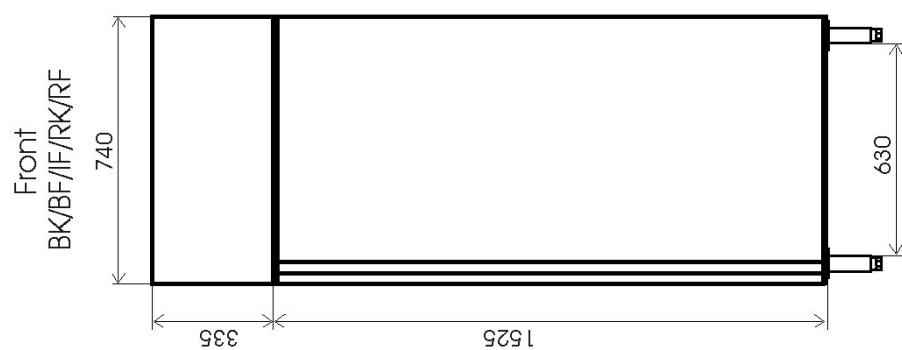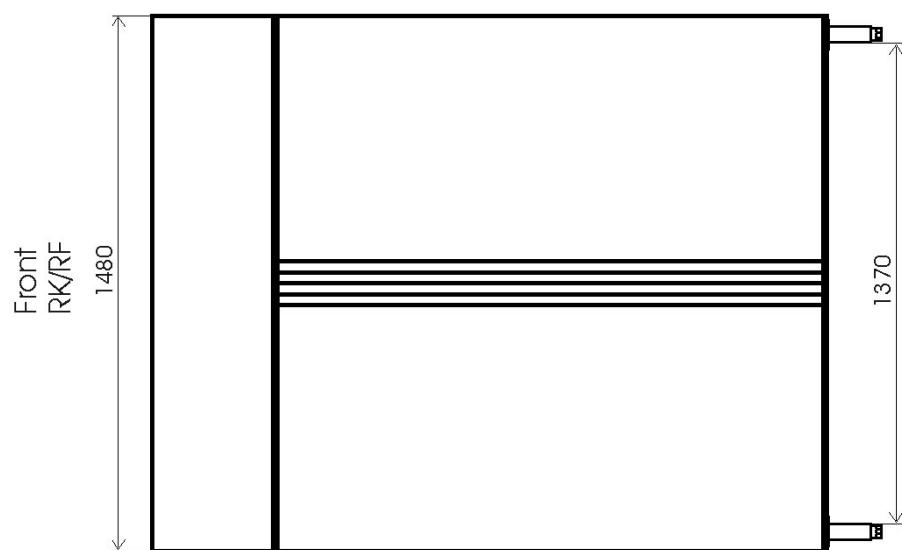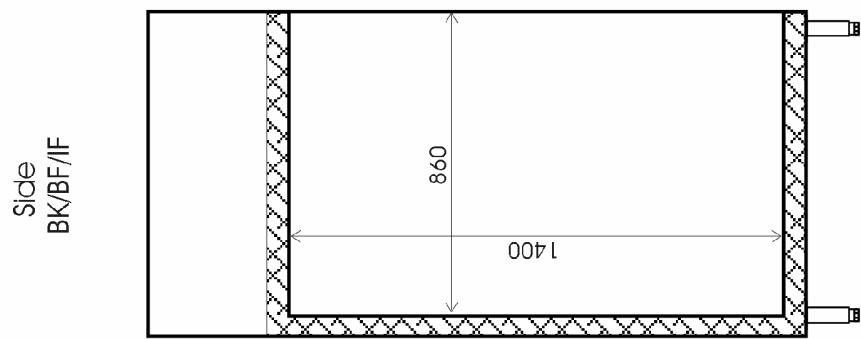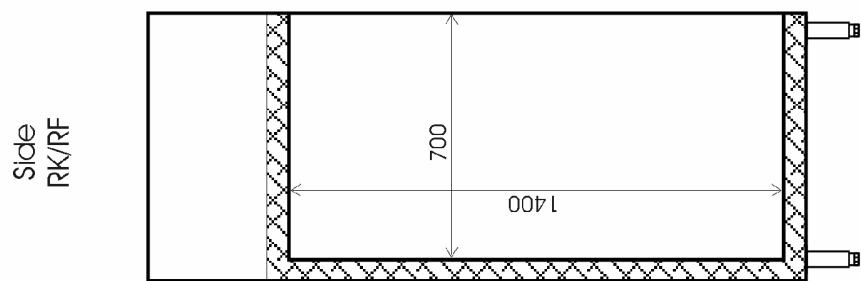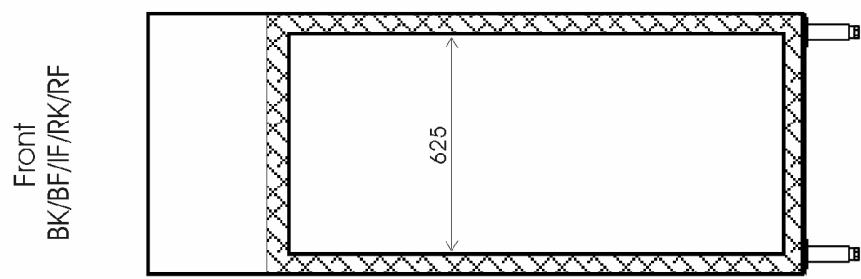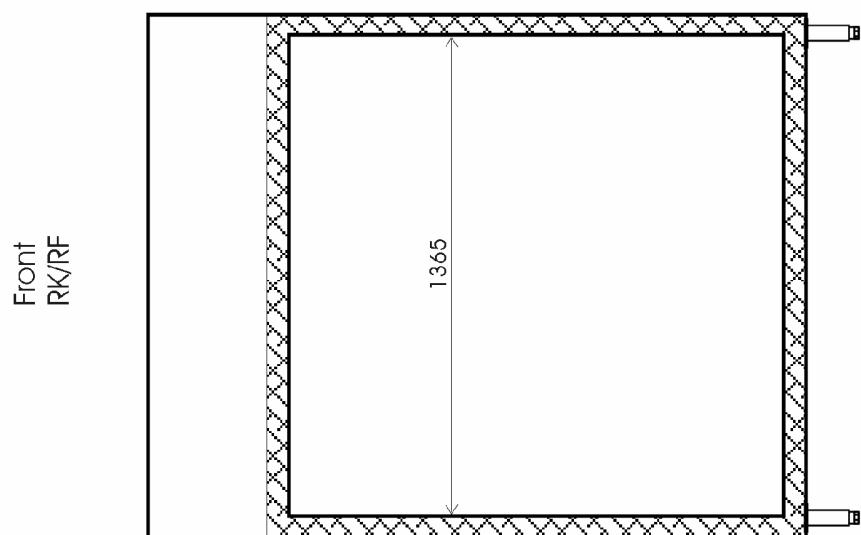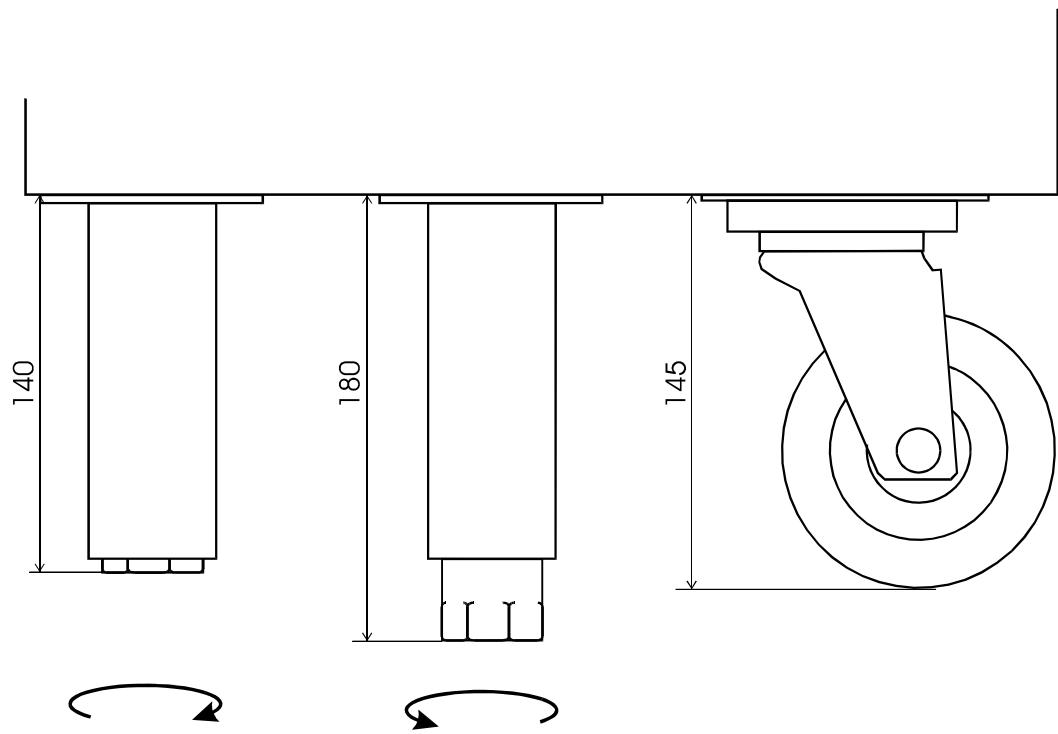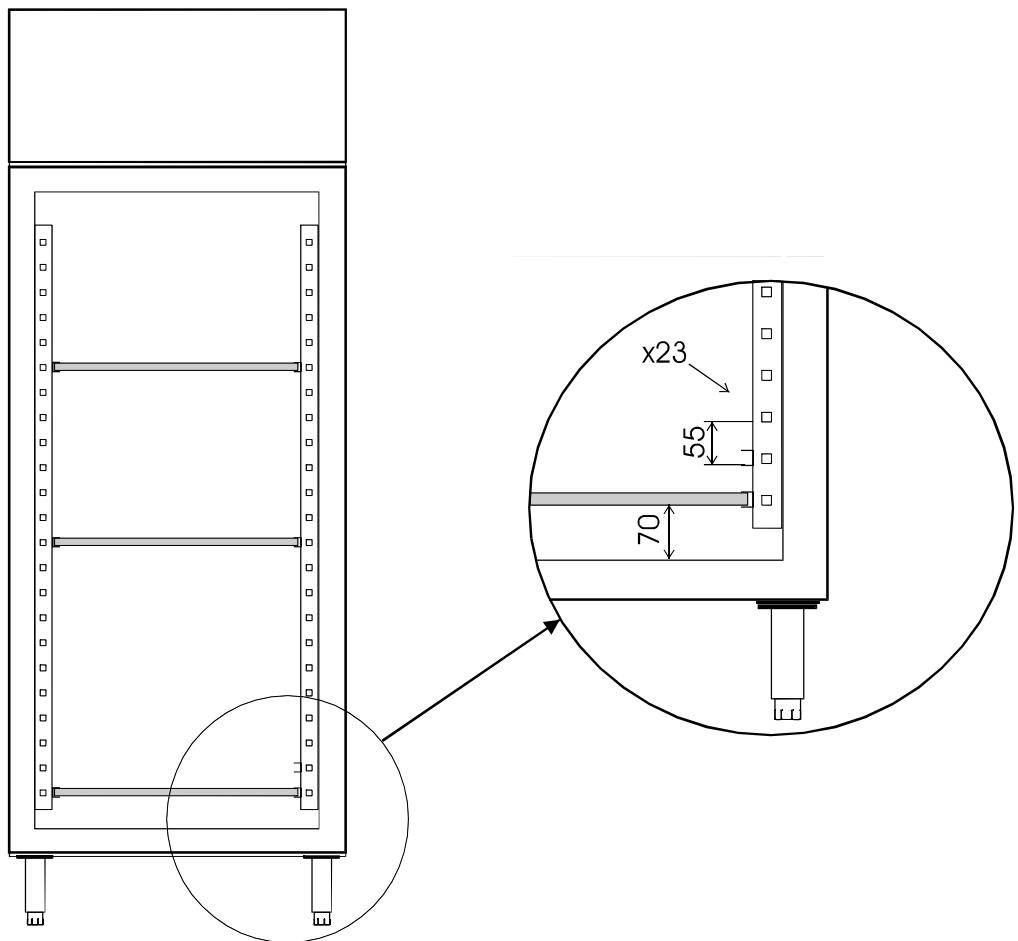
Technical data

Model	Volume Litres	Dimensions HxWxD mm.	Temperature ºC	Weight nett Kgs.	Voltage V.	Wattage W.	Energy Consumption Kwh/24h
BK850	746	2010x740x990	-2/+10	140	230-240	456	4,7
BF850	746	2010x740x990	-18/-23	143	230-240	1000	9,0
IF850	746	2010x740x990	-18/-23	143	230-240	1000	9,0
RK710	700	2010x740x830	-2/+10	134	230-240	456	4,7
RK720	700	2010x740x830	-2/+10	134	230-240	456	4,7
RK710G	700	2010x740x830	+2/+10	134	230-240	456	4,7
RF710	700	2010x740x830	-18/-23	138	230-240	1000	9,0
RF720	700	2010x740x830	-18/-23	138	230-240	1000	9,0
RK1420	1400	2010x1480x830	-2/+10	198	230-240	650	5,4
RK1440	1400	2010x1480x830	-2/+10	198	230-240	650	5,4
RK1420G	1400	2010x1480x830	+2/+10	198	230-240	650	4,7
RF1420	1400	2010x1480x830	-18/-23	198	230-240	1300	9,6
RF1440	1400	2010x1480x830	-18/-23	198	230-240	1300	9,6

Door heater

All xF models are supplied with an extra door heater for replacement in case of defects.

REK33

Forced air cooling
Electrical system
202-060928

12 11 10 9 8 7 6 2 1

10 11

9

M 8

M 7

6

M 5

4

3

2

1

N

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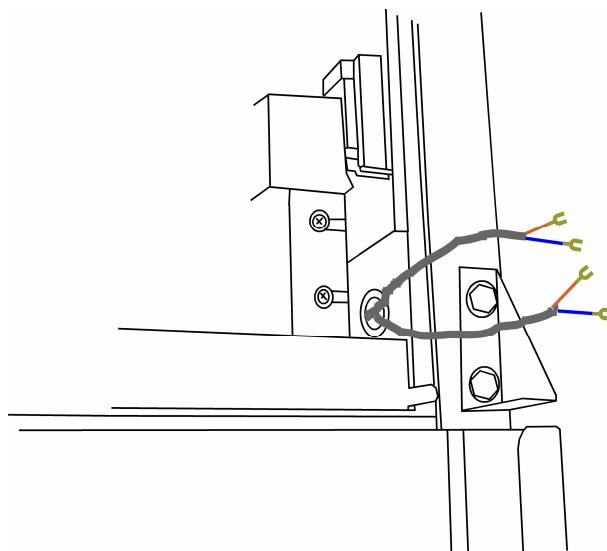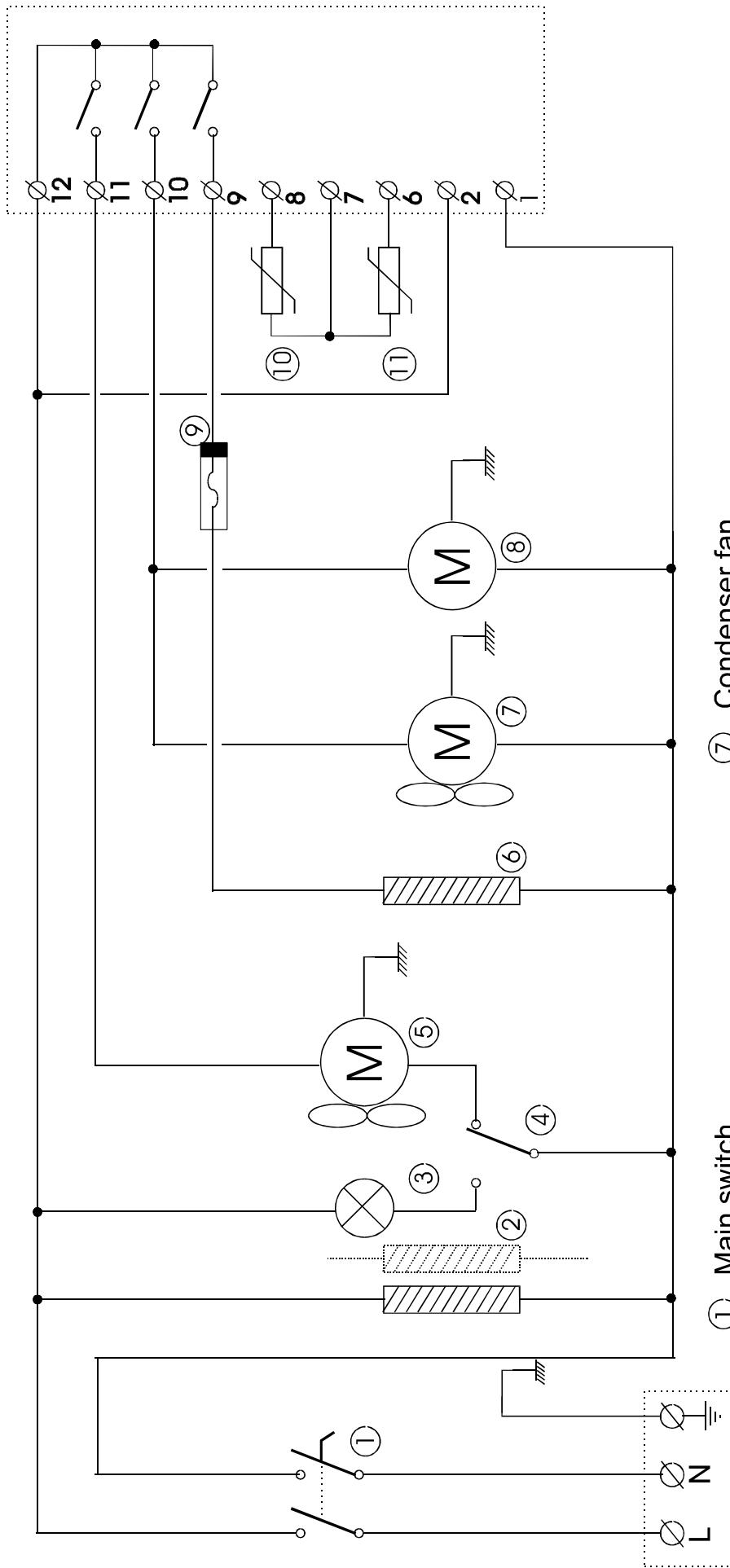
① Main switch
② Door heater (xF only, extra mounted)
③ Internal light (B/R only)
④ Door switch (B/R only)
⑤ Evaporator fan
⑥ Defrost heater

⑦ Condenser fan
⑧ Compressor
⑨ Fuse
⑩ Evaporator probe
⑪ Cabinet probe

63

Dyn. condenser

Ventilator

M~

Drier

Compressor

Capillary tube

Evaporator

Defrost heater
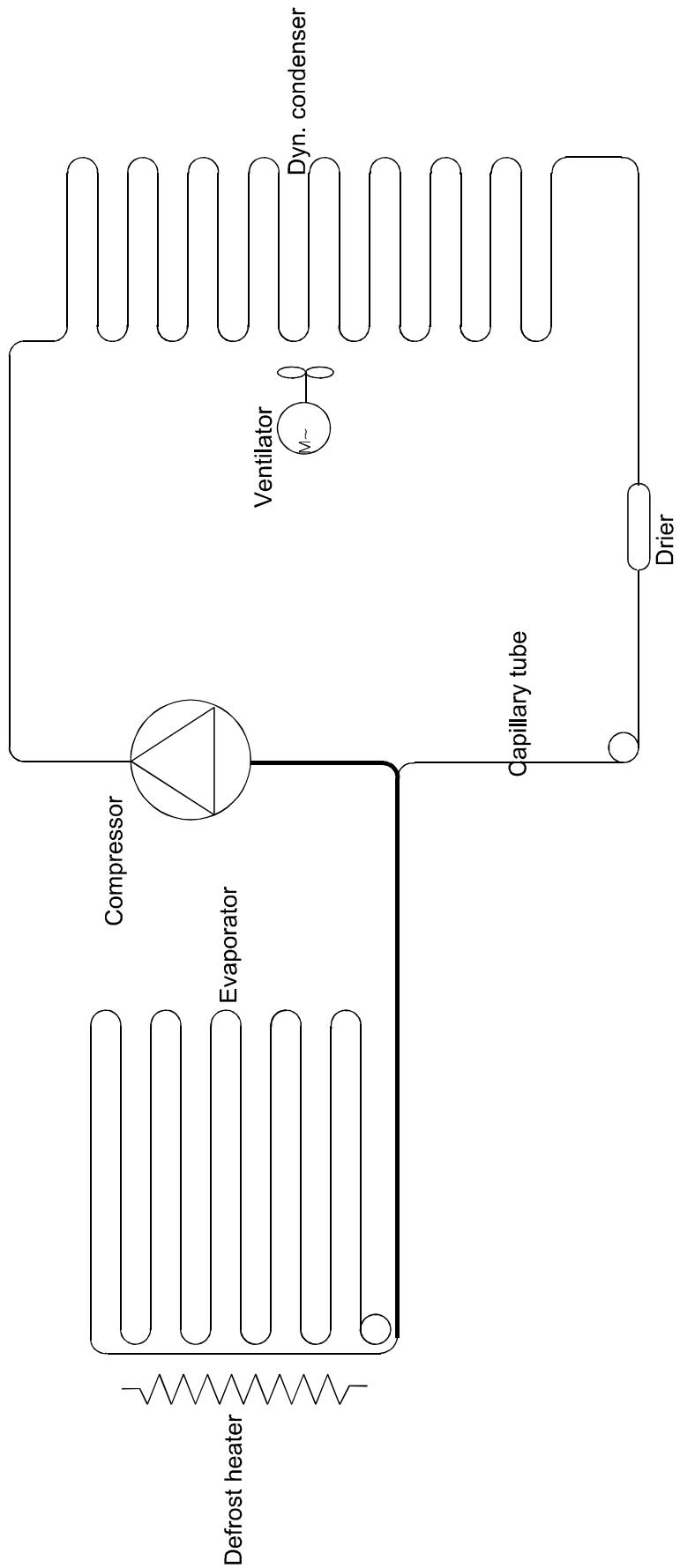
Gastro-Line series
Refrigeration system

201-060928

REK31ED/REK33 (RK710/RK1420/BK850)

Parameter	Description	REK31	REK33
d1	Main Set point	-2 ℃	-2 ℃
d2	Differential (hysteresis)	3 ℃	3 ℃
d3	lower limit of main set point	-2 ℃	-2 ℃
d4	Upper limit of main set point	10 ℃	10 ℃
d5	Minimum time interval between the disactivation and successive activation on compressor	99sec.	300sec.
d6	Max temperature alarm differential	50 ℃	50 ℃
d7	Maximum or minimum temperature alarm delay	0	99
d8	Time interval between defrost cycle	6h	6h
d9	Max defrost cycle time	20min	20min
d10	Defrost –end temperature	5 ℃	7 ℃
d11	Time interval for supplementary defrost cycles	2min	2min
d12	Real temperature display delay at defrost end	30 min	30 min
d13	Compressor function during defrost	0	0
d14	Dripping time	1min	1min
d15	Fan operating mode during normal controller		1
d16	Fan activation delay at controller startup and after defrost		1min
d17	Fan activation temperature at controller startup and after defrosting		6 ℃
d19	Offset ?	-4 ℃	-4 ℃
d22	Unit of measure, 0=C, 1=F	0	0
d23	Compressor function during o probe failure	2	2
d24	Compressor on-time during probe failure	10 min	10 min
d25	Compressor off-time during by probe failure	10 min	10 min
d27	Serial line address		0
d34	First defrost cycle after controller startup	1	1
d38	Minimum temperature alarm differential	40 ℃	40 ℃

REK31ED/REK33 (RK710G/RK1420G)

Parameter	Description	REK31	REK33
d1	Main Set point	0 ℃	0 ℃
d2	Differential (hysteresis)	3 ℃	3 ℃
d3	lower limit of main set point	-2 ℃	-2 ℃
d4	Upper limit of main set point	10 ℃	10 ℃
d5	Minimum time interval between the disactivation and successive activation on compressor	99sec.	300sec.
d6	Max temperature alarm differential	50 ℃	50 ℃
d7	Maximum or minimum temperature alarm delay	0	99
d8	Time interval between defrost cycle	6h	6h
d9	Max defrost cycle time	20min	20min
d10	Defrost –end temperature	5 ℃	7 ℃
d11	Time interval for supplementary defrost cycles	2min	2min
d12	Real temperature display delay at defrost end	30 min	30 min
d13	Compressor function during defrost	0	0
d14	Dripping time	1min	1min
d15	Fan operating mode during normal controller		1
d16	Fan activation delay at controller startup and after defrost		1min
d17	Fan activation temperature at controller startup and after defrosting		6 ℃
d19	Offset ?	-4 ℃	-4 ℃
d22	Unit of measure, 0=C, 1=F	0	0
d23	Compressor function during o probe failure	2	2
d24	Compressor on-time during probe failure	10 min	10 min
d25	Compressor off-time during by probe failure	10 min	10 min
d27	Serial line address		0
d34	First defrost cycle after controller startup	1	1
d38	Minimum temperature alarm differential	40 ℃	40 ℃

REK33 (RF710/RF1420/BF850/IF850)

Parameter	Description	
d1	Main Set point	-22 ℃
d2	Differential (hysteresis)	3 ℃
d3	lower limit of main set point	-24 ℃
d4	Upper limit of main set point	-18 ℃
d5	Minimum time interval between the disactivation and successive activation on compressor	300sec.
d6	Max temperature alarm differential	50 ℃
d7	Maximum or minimum temperature alarm delay	99
d8	Time interval between defrost cycle	6h
d9	Max defrost cycle time	20min
d10	Defrost –end temperature	12 ℃
d11	Time interval for supplementary defrost cycles	2min
d12	Real temperature display delay at defrost end	30 min
d13	Compressor function during defrost	0
d14	Dripping time	1min
d15	Fan operating mode during normal controller	1
d16	Fan activation delay at controller startup and after defrost	1min
d17	Fan activation temperature at controller startup and after defrosting	-6 ℃
d19	Offset ?	-5 ℃
d22	Unit of measure, 0=C, 1=F	0
d23	Compressor function during o probe failure	2
d24	Compressor on-time during probe failure	10 min
d25	Compressor off-time during by probe failure	10 min
d27	Serial line address	0
d34	First defrost cycle after controller startup	1
d38	Minimum temperature alarm differential	40 ℃

Digital controller with off cycle defrost
XW20L

1. GENERAL WARNING

1.1 PLEASE READ BEFORE USING THIS MANUAL

- This manual is part of the product and should be kept near the instrument for easy and quick reference.
- The instrument shall not be used for purposes different from those described hereunder. It cannot be used as a safety device.
- Check the application limits before proceeding.
- Dixell Srl reserves the right to change the composition of its products, even without notice, ensuring the same and unchanged functionality.

1.2 ⚠ SAFETY PRECAUTIONS

- Check the supply voltage is correct before connecting the instrument.
- Do not expose to water or moisture: use the controller only within the operating limits avoiding sudden temperature changes with high atmospheric humidity to prevent formation of condensation
- Warning: disconnect all electrical connections before any kind of maintenance.
- Fit the probe where it is not accessible by the End User. The instrument must not be opened.
- In case of failure or faulty operation send the instrument back to the distributor or to "Dixell S.r.l." (see address) with a detailed description of the fault.
- Consider the maximum current which can be applied to each relay (see Technical Data).
- Ensure that the wires for probes, loads and the power supply are separated and far enough from each other, without crossing or intertwining.
- In case of applications in industrial environments, the use of mains filters (our mod. FT1) in parallel with inductive loads could be useful.

2. GENERAL DESCRIPTION

Model **XW20L**, format 38x185mm, , is a digital thermostat with off cycle defrost designed for refrigeration applications at normal temperature. It has 2 relay outputs to control compressor and light (configurable). It could be provided with a Real Time Clock which allows programming of up to 6 daily defrost cycles, divided into holidays and workdays. A "Day and Night" function with two different set points is fitted for energy saving. It is also provided with up to four NTC or PTC probe inputs, the first one for temperature control, the second one, to be located onto the evaporator and to control the defrost termination temperature. One of the 2 digital inputs can operate as third temperature probe. The fourth probe is used to signal the condenser temperature alarm or to display a temperature.
The HOT KEY output allows to connect the unit, by means of the external module XJ485-CX, to a network line **ModBUS-RTU** compatible such as the dIXEL monitoring units of X-WEB family. It allows to program the controller by means the HOT KEY programming keyboard.
The instrument is fully configurable through special parameters that can be easily programmed through the keyboard.

3. CONTROLLING LOADS

3.1 COMPRESSOR

The regulation is performed according to the temperature measured by the thermostat probe with a positive differential from the set point: if the temperature increases and reaches set point plus differential the compressor is started and then turned off when the temperature reaches the set point value again.

In case of fault in the thermostat probe the start and stop of the compressor are timed through parameters "**COn**" and "**COF**".

3.2 DEFROST

Defrost is performed through a simple stop of the compressor. The defrost interval depends on the presence of the RTC (optional). If the RTC is present is controlled by means of parameter "**EdF**":
- with EdF=in the defrost is made every "**IdF**" time – standard way for controller without RTC.
- with EdF = "rtc", the defrost is made in real time depending on the hours set in the parameters **Ld1..Ld6** on workdays and in **Sd1…Sd6** in holidays;
Other parameters are used to control defrost cycles: its maximum length (MdF) and two defrost modes: timed or controlled by the evaporator's probe (P2P).

3.3 LIGHT RELAY CONFIGURATION

The functioning of the auxiliary relay (terminals. 1-3) can be set by the **oA3** parameter, according to the kind of application. In the following paragraph the possible setting:

3.3.1 Auxiliary thermostat

I.E.. anti condensing heater) with the possibility of switching it on and off also by keyboard

Parameters involved:
- **ACH** Kind of regulation for the auxiliary relay: **Ht:** heating; **cL:** cooling;
- **SAA** Set point for auxiliary relay
- **SHy** Differential for auxiliary relay
- **ArP** Probe for auxiliary relay
- **Sdd** Auxiliary output off during defrost
By means of these 5 parameters the functioning of the auxiliary relay can be set.. The differential is given by the **SHy** parameter.
The auxiliary relay can be switched on also by the AUX button. In this case it remains on till it's manually switched off.

NOTE: Set **oA3 =AUS** and **ArP= nP** (no probe for auxiliary output).

In this case the relay 1-3 can be activated only by digital input with i1F or i2F = AUS.

3.3.2 On/off relay – oA3 = onF
In this case the relay is activated when the controller is turned on and de-activated when the controller is turned off.

3.3.3 Neutral zone regulation
With **oA3 = db** the relay 1-3 can control a heater element to perform a neutral zone action.
oA3 cut in = SET-HY
oA3 cut out = SET

3.3.4 Second compressor
With **oA3 = CP2,** the relay 1-3 operates as second compressor: it is activated in parallel with the relay of the first compressor, with a possible delay set in the **AC1** parameter. Both the compressors are switched off at the same time.

3.3.5 Alarm relay
With **oA3 = ALr** the relay 1-3 operates as alarm relay. It is activated every time an alarm happens. Its status depends on the **tbA** parameter: if "**tbA = y**", the relay is silenced by pressing any key.
If "**tbA = n**", the alarm relay remains on until the alarm condition recovers.

3.3.6 Night blind management during energy saving cycles
With **oA3 = HES,** the relay 1-3 operates to manage the night blind: the relay is energised when the energy saving cycle is activated , by digital input, frontal button or RTC (optional)

4. FRONT PANEL COMMANDS

4.1 STANDARD FRONTAL PANEL

4.2 STEEL FINISHING

SET: To display target set point; in programming mode it selects a parameter or confirm an operation.

✳ **(DEF)** To start a manual defrost

⌃ **(UP)**: To see the max. stored temperature; in programming mode it browses the parameter codes or increases the displayed value.

⌄ **(DOWN)** To see the min stored temperature; in programming mode it browses the parameter codes or decreases the displayed value.

⏻   To switch the instrument off, if onF = oFF.

💡   To switch the light, if oA3 = Lig.

KEY COMBINATIONS:

⌃ + ⌄   To lock & unlock the keyboard.

SET + ⌄   To enter in programming mode.

SET + ⌃   To return to the room temperature display.

4.3 USE OF LEDS

Each LED function is described in the following table.

LED	MODE	FUNCTION
✳	ON	Compressor enabled
✳	Flashing	Anti-short cycle delay enabled
❄	ON	Defrost enabled
❄	Flashing	Drip time in progress
((•))	ON	An alarm is occurring
⊛	ON	Continuous cycle is running
☀	ON	Energy saving enabled
💡	ON	Light on
AUX	ON	Auxiliary relay on
°C/°F	ON	Measurement unit
°C/°F	Flashing	Programming phase

5. MAX & MIN TEMPERATURE MEMORIZATION

5.1 HOW TO SEE THE MIN TEMPERATURE
1. Press and release the n key.
2. The "Lo" message will be displayed followed by the minimum temperature recorded.
3. By pressing the n key again or by waiting 5s the normal display will be restored.

5.2 HOW TO SEE THE MAX TEMPERATURE
1. Press and release the o key.
2. The "Hi" message will be displayed followed by the maximum temperature recorded.
3. By pressing the o key again or by waiting 5s the normal display will be restored.

5.3 HOW TO RESET THE MAX AND MIN TEMPERATURE RECORDED
1. Hold press the SET key for more than 3s, while the max. or min temperature is displayed. (rSt message will be displayed)
2. To confirm the operation the "rSt" message starts blinking and the normal temperature will be displayed.

6. MAIN FUNCTIONS

6.1 TO SET THE CURRENT TIME AND DAY (ONLY FOR INSTRUMENTS WITH RTC)
When the instrument is switched on, it's necessary to program the time and day.
1. Enter the Pr1 programming menu, by pushing the SET + n keys for 3s.
2. The rtc parameter is displayed. Push the SET key to enter the real time clock menu.
3. The Hur (hour) parameter is displayed.
4. Push the SET and set current hour by the UP and Down keys, then push SET to confirm the value..
5. Repeat the same operations on the Min (minutes) and dAy (day) parameters.

To exit: Push SET+UP keys or wait for 15 sec without pushing any keys.

6.2 HOW TO SEE THE SET POINT
SET
1. Push and immediately release the **SET** key: the display will show the Set point value;
2. Push and immediately release the **SET** key or wait for 5 seconds to display the probe value again.

6.3 HOW TO CHANGE THE SET POINT
1. Push the **SET** key for more than 2 seconds to change the Set point value;
2. The value of the set point will be displayed and the "**°C" or "°F**" LED starts blinking;
3. To change the Set value push the o or n arrows within 10s.
4. To memorise the new set point value push the **SET** key again or wait 10s.

6.4 HOW TO START A MANUAL DEFROST
Push the **DEF** key for more than 2 seconds and a manual defrost will start.

6.5 HOW TO CHANGE A PARAMETER VALUE
To change the parameter's value operate as follows:
1. Enter the Programming mode by pressing the **Set** + n keys for 3s (the "**°C" or "°F**" LED starts blinking).
2. Select the required parameter. Press the "**SET**" key to display its value
3. Use "**UP**" or "**DOWN**" to change its value.
4. Press "**SET**" to store the new value and move to the following parameter.

To exit: Press **SET + UP** or wait 15s without pressing a key.
NOTE: the set value is stored even when the procedure is exited by waiting the time-out to expire.

6.6 THE HIDDEN MENU
The hidden menu Includes all the parameters of the instrument.

6.6.1 HOW TO ENTER THE HIDDEN MENU
1. Enter the Programming mode by pressing the **Set** + n keys for 3s (the "**°C" or "°F**" LED starts blinking).
2. Released the keys, then push again the Set+n keys for more than 7s. The Pr2 label will be displayed immediately followed from the HY parameter.
   NOW YOU ARE IN THE HIDDEN MENU.
3. Select the required parameter.
4. Press the "**SET**" key to display its value
5. Use o or n to change its value.
6. Press "**SET**" to store the new value and move to the following parameter.

To exit: Press **SET + o** or wait 15s without pressing a key.
NOTE1: if none parameter is present in Pr1, after 3s the "noP" message is displayed. Keep the keys pushed till the Pr2 message is displayed.
NOTE2: the set value is stored even when the procedure is exited by waiting the time-out to expire.

6.6.2 HOW TO MOVE A PARAMETER FROM THE HIDDEN MENU TO THE FIRST LEVEL AND VICEVERSA.
Each parameter present in the HIDDEN MENU can be removed or put into "THE FIRST LEVEL" (user level) by pressing "**SET + n**".
In HIDDEN MENU when a parameter is present in First Level the decimal point is on.

6.7 HOW TO LOCK THE KEYBOARD
1. Keep pressed for more than 3 s the **UP + DOWN** keys.
2. The "POF" message will be displayed and the keyboard will be locked. At this point it will be possible only to see the set point or the MAX o Min temperature stored
3. If a key is pressed more than 3s the "POF" message will be displayed.

6.8 TO UNLOCK THE KEYBOARD
Keep pressed together for more than 3s the o and n keys, till the **"Pon"** message will be displayed.

6.9 THE CONTINUOUS CYCLE
When defrost is not in progress, it can be activated by holding the "o" key pressed for about 3 seconds. The compressor operates to maintain the "**ccS**" set point for the time set through the "**CCt**" parameter. The cycle can be terminated before the end of the set time using the same activation key "o" for 3 seconds.

6.10 THE ON/OFF FUNCTION
With "**onF = oFF**", pushing the **ON/OFF** key, the instrument is switched off. The **"OFF"** message is displayed. In this configuration, the regulation is disabled.
To switch the instrument on, push again the ON/OFF key.

WARNING: Loads connected to the normally closed contacts of the relays are always supplied and under voltage, even if the instrument is in stand by mode.

7. PARAMETERS
rtc Real time clock menu (only for controller with RTC): to set the time and date and defrost start time.

REGULATION
Hy Differential: (0,1 ÷ 25,5°C / 1÷255 °F) Intervention differential for set point. Compressor Cut IN is Set Point + differential (Hy). Compressor Cut OUT is when the temperature reaches the set point.
LS Minimum set point: (- 50°C÷SET/-58°F÷SET): Sets the minimum value for the set point.
US Maximum set point: (SET÷110°C/ SET÷230°F). Set the maximum value for set point.
Ot Thermostat probe calibration: (-12.0÷12.0°C; -120÷120°F) allows to adjust possible offset of the thermostat probe.
P2P Evaporator probe presence: n= not present: the defrost stops by time; y= present: the defrost stops by temperature.
OE Evaporator probe calibration: (-12.0÷12.0°C; -120÷120°F). allows to adjust possible offset of the evaporator probe.
P3P Third probe presence (P3): n= not present:, the terminals 13-14 operate as digital input.; y= present:, the terminals 13-14 operate as third probe.
O3 Third probe calibration (P3): (-12.0÷12.0°C; -120÷120°F). allows to adjust possible offset of the third probe.
P4P Fourth probe presence: (n = Not present; y = present).
o4 Fourth probe calibration: (-12.0÷12.0°C) allows to adjust possible offset of the fourth probe.
OdS Outputs activation delay at start up: (0÷255min) This function is enabled at the initial start up of the instrument and inhibits any output activation for the period of time set in the parameter.
AC Anti-short cycle delay: (0÷50 min) minimum interval between the compressor stop and the following restart.
AC1 2nd compressor delay at start up (0÷255s) Used only if oA3 = cP2 Time interval between the switching on of the first compressor and the second one.
rtr Percentage of the second and first probe for regulation (0÷100; 100 = P1, 0 = P2): it allows to set the regulation according to the percentage of the first and second probe, as for the following formula (rtr(P1-P2)/100 + P2).
CCt Compressor ON time during continuous cycle: (0.0÷24.0h; res. 10min) Allows to set the length of the continuous cycle: compressor stays on without interruption for the CCt time. Can be used, for instance, when the room is filled with new products.
CCS Set point for continuous cycle: (-50÷150°C) it sets the set point used during the continuous cycle.
COn Compressor ON time with faulty probe: (0÷255 min) time during which the compressor is active in case of faulty thermostat probe. With COn=0 compressor is always OFF.
COF Compressor OFF time with faulty probe: (0÷255 min) time during which the compressor is OFF in case of faulty thermostat probe. With COF=0 compressor is always active.
CH Type of action: CL = cooling; Ht = heating.

DISPLAY
CF Temperature measurement unit: °C=Celsius; °F=Fahrenheit. WARNING: When the measurement unit is changed the SET point and the values of the parameters Hy, LS, US, Ot, ALU and ALL have to be checked and modified if necessary.
rES Resolution (for °C): (in = 1°C; dE = 0.1 °C) allows decimal point display.
Lod Instrument display: (P1; P2, P3, P4, SET, dtr): it selects which probe is displayed by the instrument: **P1** = Thermostat probe; **P2** = Evaporator probe; **P3** = Third probe(only for model with this option enabled); **P4** = Fourth probe, **SET** = set point; **dtr** = percentage of visualization.
rEd X- REP display (optional): (P1; P2, P3, P4, SET, dtr): it selects which probe is displayed by X-REP: **P1** = Thermostat probe; **P2** = Evaporator probe; **P3** = Third probe(only for model with this option enabled); **P4** = Fourth probe, **SET** = set point; **dtr** = percentage of visualization.
dLy Display delay: (0 ÷20.0m; resul. 10s) when the temperature increases, the display is updated of 1 °C/1°F after this time.
dtr Percentage of the second and first probe for visualization when Lod = dtr (0÷100; 100 = P1, 0 = P2): if Lod = dtr it allows to set the visualization according to the percentage of the first and second probe, as for the following formula (dtr(P1-P2)/100 + P2).

DEFROST
EdF Defrost mode (only for controller with RTC):
   rtc = Real Time Clock mode. Defrost time follows **Ld1÷Ld6** parameters on workdays and **Sd1÷Sd6** on holidays.
   in = interval mode. The defrost starts when the time "**Idf**" is expired.
dFP Probe selection for defrost termination: nP = no probe; **P1** =thermostat probe; **P2** = evaporator probe; **P3** =configurable probe; **P4** = Probe on Hot Key plug.
dtE Defrost termination temperature: (-50÷50 °C/ -58÷122°F) (Enabled only when EdF=Pb) sets the temperature measured by the evaporator probe, which causes the end of defrost.
IdF Interval between defrost cycles: (0÷120h) Determines the time interval between the beginning of two defrost cycles.
MdF (Maximum) length for defrost: (0÷255min) When P2P = n, (not evaporator probe: timed defrost) it sets the defrost duration, when P2P = y (defrost end based on temperature) it sets the maximum length for defrost.

dFd Temperature displayed during defrost: (**rt** = real temperature; **it** = temperature at defrost start; **SEt** = set point; **dEF** = "DEF" label)

dAd MAX display delay after defrost: (0÷255min). Sets the maximum time between the end of defrost and the restarting of the real room temperature display.

AUXILIARY THERMOSTAT CONFIGURATION (terms. 1-3) – OA3 = AUS

ACH Kind of regulation for auxiliary relay: **Ht** = heating; **CL** = cooling

SAA Set Point for auxiliary relay: (-50,0÷110,0°C; -58÷230°F) it defines the room temperature set point to switch auxiliary relay.

SHy Differential for auxiliary output: (0,1 ÷ 25,5°C / 1÷255 °F) Intervention differential for auxiliary output set point.

With ACH = cL AUX Cut in is SAA + SHy; . AUX Cut out is SAA

With ACH = Ht AUX Cut in is SAA - SHy; . AUX Cut out is SAA

ArP Probe selection for auxiliary: nP = no probe, the auxiliary relay is switched only by button; **P1** = Probe 1 (Thermostat probe); **P2** = Probe 2 (evaporator probe); **P3** = Probe 3 (display probe); **P4** = Probe 4 fourth probe.

Sdd Auxiliary relay off during defrost: **n** = the auxiliary relay operates during defrost.

y = the auxiliary relay is switched off during defrost.

ALARMS

ALP Probe selection for alarm: nP = no probe, the temperature alarms are disabled; **P1** = Probe 1 (Thermostat probe); **P2** = Probe 2 (evaporator probe); **P3** = Probe 3 (display probe); **P4** = Fourth probe.

ALC Temperature alarms configuration: (Ab; rE)

Ab= absolute temperature: alarm temperature is given by the ALL or ALU values. **rE** = temperature alarms are referred to the set point. Temperature alarm is enabled when the temperature exceeds the "SET+ALU" or "SET-ALL" values.

ALU MAXIMUM temperature alarm: (SET÷110°C; SET÷230°F) when this temperature is reached the alarm is enabled, after the "ALd" delay time.

ALL Minimum temperature alarm: (-50.0 ÷ SET °C; -58÷230°F) when this temperature is reached the alarm is enabled, after the "ALd" delay time.

AFH Differential for temperature alarm recovery: (0,1÷25,5°C; 1÷45°F) Intervention differential for recovery of temperature alarm.

ALd Temperature alarm delay: (0÷255 min) time interval between the detection of an alarm condition and alarm signalling.

dAO Exclusion of temperature alarm at start-up: (from 0.0 min to 23.5h) time interval between the detection of the temperature alarm condition after instrument power on and alarm signalling.

CONDENSER TEMPERATURE ALARM

AP2 Probe selection for temperature alarm of condenser: nP = no probe; **P1** =thermostat probe; **P2** = evaporator probe; **P3** =configurable probe; **P4** = Probe on Hot Key plug.

AL2 Low temperature alarm of condenser: (-55÷150°C) when this temperature is reached the LA2 alarm is signalled, possibly after the Ad2 delay.

Au2 High temperature alarm of condenser: (-55÷150°C) when this temperature is reached the HA2 alarm is signalled, possibly after the Ad2 delay.

AH2 Differential for temperature condenser alarm recovery: (0,1÷25,5°C; 1÷45°F)

Ad2 Condenser temperature alarm delay: (0÷255 min) time interval between the detection of the condenser alarm condition and alarm signalling.

dA2 Condenser temperature alarm exclusion at start up: (from 0.0 min to 23.5h, res. 10min)

bLL Compressor off with low temperature alarm of condenser: **n = no**: compressor keeps on working; **Y = yes,** compressor is switched off till the alarm is present, in any case regulation restarts after AC time at minimum.

AC2 Compressor off with high temperature alarm of condenser: **n = no**: compressor keeps on working; **Y = yes,** compressor is switched off till the alarm is present, in any case regulation restarts after AC time at minimum.

AUXILIARY RELAY

tbA Alarm relay silencing (with oA3 =ALr):

n= silencing disabled: alarm relay stays on till alarm condition lasts,

y =silencing enabled: alarm relay is switched OFF by pressing a key during an alarm

oA3 Third relay configuration (1-3): dEF, FAn: do not select it!. ALr: alarm; Lig: light; AuS: Auxiliary relay; **onF**: always on with instrument on; **db**= neutral zone; **cP2** = second compressor; **dEF2**: do not select it!;. **HES**:. night blind

AoP Alarm relay polarity: it set if the alarm relay is open or closed when an alarm happens. **CL**= terminals 1-3 closed during an alarm; **oP** = terminals 1-3 open during an alarm

DIGITAL INPUTS

i1P Digital input polarity (13-14): **oP**: the digital input is activated by opening the contact; **CL**: the digital input is activated by closing the contact.

i1F Digital input configuration (13-14): **EAL**= external alarm: "EA" message is displayed; **bAL**= serious alarm "CA" message is displayed. **PAL**= pressure switch alarm, "CA" message is displayed; **dor**= door switch function; **dEF**= activation of a defrost cycle; **AUS**=not enabled; **Htr**= kind of action inversion (cooling – heating); **FAn**= not set it; **ES**= Energy saving; **HdF** = Holiday defrost (enable only with RTC); **onF** = to switch the controller off.

did (0÷255 min) **with i1F= EAL or i1F = bAL digital input alarm delay (13-14)**: delay between the detection of the external alarm condition and its signalling.

with i1F= dor: door open signalling delay

with i1F= PAL: time for pressure switch function: time interval to calculate the number of the pressure switch activation.

i2P 2ⁿᵈ digital input polarity (13-19): **oP**: the digital input is activated by opening the contact; **CL**: the digital input is activated by closing the contact.

i2F 2ⁿᵈ digital input configuration (13-19): **EAL**= external alarm: "EA" message is displayed; **bAL**= serious alarm "CA" message is displayed. **PAL**= pressure switch alarm, "CA" message is displayed; **dor**= door switch function; **dEF**= activation of a defrost cycle; **AUS**=not enabled; **Htr**= kind of action inversion (cooling – heating); **FAn**= not set it; **ES**= Energy saving; **HdF** = Holiday defrost (enable only with RTC); **onF** = to switch the controller off.

d2d (0÷255 min) **with i2F= EAL or i2F= bAL 2ⁿᵈ digital input alarm delay (13-19)**: delay between the detection of the external alarm condition and its signalling.

with i2F= dor: door open signalling delay

with i2F= PAL: time for pressure switch function: time interval to calculate the number of the pressure switch activation.

nPS Pressure switch number: (0 ÷15) Number of activation of the pressure switch, during the "did" interval, before signalling the alarm event (I2F= PAL).

If the nPS activation in the did time is reached, switch off and on the instrument to restart normal regulation.

odc Compressor status when open door: no, Fan = normal; **CPr, F_C** = Compressor OFF.

rrd Outputs restart after doA alarm: **no=** outputs not affected by the doA alarm; **yES =** outputs restart with the doA alarm.

HES Temperature increase during the Energy Saving cycle:

(-30,0°C÷30,0°C) it sets the increasing value of the set point during the Energy Saving cycle.

TO SET CURRENT TIME AND WEEKLY HOLIDAYS (ONLY FOR MODELS WITH RTC)

Hur **Current hour** (0 ÷ 23 h)

Min **Current minute** (0 ÷ 59min)

dAY Current day (Sun ÷ SAt)

Hd1 **First weekly holiday** (Sun ÷ nu) Set the first day of the week which follows the holiday times.

Hd2 **Second weekly holiday** (Sun ÷ nu) Set the second day of the week which follows the holiday times.

N.B. Hd1,Hd2 can be set also as **"nu"** value (NotUsed).

TO SET ENERGY SAVING TIMES (ONLY FOR MODELS WITH RTC)

ILE **Energy Saving cycle start during workdays**: (0 ÷ 23h 50 min.) During the Energy Saving cycle the set point is increased by the value in HES so that the operation set point is SET + HES.

dLE **Energy Saving cycle length during workdays**: (0 ÷ 24h 00 min.) Sets the duration of the Energy Saving cycle on workdays.

ISE **Energy Saving cycle start on holidays**. (0 ÷ 23h 50 min.)

dSE **Energy Saving cycle length on holidays** (0 ÷ 24h 00 min.)

TO SET DEFROST TIMES (ONLY FOR MODELS WITH RTC)

Ld1÷Ld6 Workday defrost start (0 ÷ 23h 50 min.) These parameters set the beginning of the 6 programmable defrost cycles during workdays. Ex. When **Ld2** = 12.4 the second defrost starts at 12.40 during workdays.

Sd1÷Sd6 Holiday defrost start (0 ÷ 23h 50 min.) These parameters set the beginning of the 6 programmable defrost cycles on holidays. Ex. When **Sd2** = 3.4 the second defrost starts at 3.40 on holidays.

N.B. :To disable a defrost cycle set it to "nu"(not used). Ex. If **Ld6**=nu ; the sixth defrost cycle is disabled

OTHER

Adr Serial address (1÷244): Identifies the instrument address when connected to a ModBUS compatible monitoring system.

PbC Type of probe: it allows to set the kind of probe used by the instrument: **PbC** = PBC probe, **ntc** = NTC probe.

onF on/off key enabling: **nu** = disabled; **oFF** = enabled; **ES** = not set it.

dP1 Thermostat probe display

dP2 Evaporator probe display

dP3 Third probe display- *optional*.

dP4 Fourth probe display.

rSE Real set point: it shows the set point used during the energy saving cycle or during the continuous cycle.

rEL Software release for internal use**.**

Ptb Parameter table code: readable only**.**

8. DIGITAL INPUTS

The first digital input 13-14 is enabled with P3P = n.

With P3P = n and i1F = i2F the second digital input is disabled

The free voltage digital inputs are programmable by the "**i1F**" and i2F parameters.

8.1 GENERIC ALARM (i1F or i2F = EAL)

As soon as the digital input is activated the unit will wait for "**did**" time delay before signalling the "**EAL**" alarm message. The outputs status don't change. The alarm stops just after the digital input is de-activated.

8.2 SERIOUS ALARM MODE (i1F or i2F = bAL)

When the digital input is activated, the unit will wait for "**did**" delay before signalling the "**CA**" alarm message. The relay outputs are switched OFF. The alarm will stop as soon as the digital input is de-activated.

8.3 PRESSURE SWITCH (i1F or i2F = PAL)

If during the interval time set by "**did**" parameter, the pressure switch has reached the number of activation of the "**nPS**" parameter, the "**CA**" pressure alarm message will be displayed. The compressor and the regulation are stopped. When the digital input is ON the compressor is always OFF. **If the nPS activation in the did time is reached, switch off and on the instrument to restart normal regulation.**

8.4 DOOR SWITCH INPUT (i1F or i2F = dor)

It signals the door status and the corresponding relay output status through the "**odc**" parameter: **no, Fan** = normal (any change); **CPr, F_C** = Compressor OFF.

Since the door is opened, after the delay time set through parameter "**did**", the door alarm is enabled, the display shows the message "**dA**" and **the regulation restarts is rtr = yES**. The alarm stops as soon as the external digital input is disabled again. With the door open, the high and low temperature alarms are disabled.

8.5 START DEFROST (i1F or i2F = dEF)

It starts a defrost if there are the right conditions. After the defrost is finished, the normal regulation will restart only if the digital input is disabled otherwise the instrument will wait until the "MdF" safety time is expired.

8.6 SWITCH THE AUXILIARY RELAY (i1F or i2F = AUS)

With oA3 = AUS the digital input switched the status of the auxiliary relay

8.7 INVERSION OF THE KIND OF ACTION: HEATING-COOLING (i1F or i2F=Htr)

This function allows to invert the regulation of the controller: from cooling to heating and viceversa.

8.8 ENERGY SAVING (i1F = ES)

The Energy Saving function allows to change the set point value as the result of the SET+ HES (parameter) sum. This function is enabled until the digital input is activated.

8.9 HOLIDAY DEFROST (i1F or i2F = HDF) –ONLY FOR MODELS WITH RTC

This function enabled the holiday defrost setting.

8.10 ON OFF FUNCTION (i1F or i2F = onF)

To switch the controller on and off.

8.11 DIGITAL INPUTS POLARITY

The digital input polarity depends on the "**i1P**" and "**i2P**" parameters.
i1P or i2P =CL: the input is activated by closing the contact.
i1P or i2P=OP: the input is activated by opening the contact

9.   TTL SERIAL LINE – FOR MONITORING SYSTEMS

The TTL serial line, available through the HOT KEY connector, allows by means of the external TTL/RS485 converter, **XJ485-CX**, to connect the instrument to a monitoring system **ModBUS-RTU** compatible such as the X-WEB500/3000/300.

10.   X-REP OUTPUT – OPTIONAL

As optional, an X-REP can be connected to the instrument, trough the dedicated connector.

To connect the X-REP to the instrument the following connectors must be used CAB/REP1(1m), CAB/REP2 (2m), CAB/REP5 (5m),

11.   INSTALLATION AND MOUNTING

The controller **XW20L**, shall be mounted on vertical panel, in a 150x31 mm hole, and fixed using two screws ∅ 3 x 2mm. To obtain an IP65 protection grade use the front panel rubber gasket (mod. RG-L). The temperature range allowed for correct operation is 0 - 60 °C. Avoid places subject to strong vibrations, corrosive gases, excessive dirt or humidity. The same recommendations apply to probes. Let the air circulate by the cooling holes.

11.1 CUT OUT

165 $^{+1}_{-1}$
150 $^{+0.3}_{-0}$
31 $^{+0.5}_{-0}$
∅3 x2
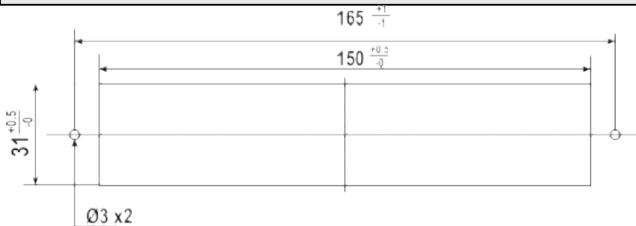
11.2 STEEL FINISHING MOUNTING

RG-LX gascke (optional)

12.   ELECTRICAL CONNECTIONS

The instruments are provided with screw terminal block to connect cables with a cross section up to 2,5 mm² for the digital and analogue inputs. Relays and power supply have a Faston connection (6,3mm). Heat-resistant cables have to be used. Before connecting cables make sure the power supply complies with the instrument's requirements. Separate the probe cables from the power supply cables, from the outputs and the power connections. Do not exceed the maximum current allowed on each relay, in case of heavier loads use a suitable external relay.
N.B. Maximum current allowed for all the loads is 20A.

12.1 PROBE CONNECTION

The probes shall be mounted with the bulb upwards to prevent damages due to casual liquid infiltration. It is recommended to place the thermostat probe away from air streams to correctly measure the average room temperature. Place the defrost termination probe among the evaporator fins in the coldest place, where most ice is formed, far from heaters or from the warmest place during defrost, to prevent premature defrost termination.

13.   HOW TO USE THE HOT KEY

13.1 HOW TO PROGRAM A HOT KEY FROM THE INSTRUMENT (UPLOAD)

1.   Program one controller with the front keypad.
2.   When the controller is <u>ON</u>, insert the "**Hot key**" and push ○ key; the **"uPL"** message appears followed a by flashing **"End"**
3.   Push "**SET**" key and the End will stop flashing.
4.   Turn OFF the instrument remove the "**Hot Key",** then turn it ON again.

NOTE: the "**Err**" message is displayed for failed programming. In this case push again ○ key if you want to restart the upload again or remove the "**Hot key**" to abort the operation.

13.2 HOW TO PROGRAM AN INSTRUMENT USING A HOT KEY (DOWNLOAD)

1.   Turn OFF the instrument.
2.   Insert a **programmed "Hot Key" into the 5 PIN receptacle** and then turn the Controller ON.
3.   Automatically the parameter list of the "**Hot Key**" is downloaded into the Controller memory, the "**doL**" message is blinking followed a by flashing **"End".**
4.   After 10 seconds the instrument will restart working with the new parameters.
5.   Remove the "**Hot Key".**.
NOTE the message "**Err**" is displayed for failed programming. In this case turn the unit off and then on if you want to restart the download again or remove the "**Hot key**" to abort the operation.

14.   ALARM SIGNALS

Message	Cause	Outputs
"P1"	Room probe failure	Compressor output acc. to par. "Con" and "COF"
"P2"	Evaporator probe failure	Defrost end is timed
"P3"	Third probe failure	Outputs unchanged
"P4"	Fourth probe failure	Outputs unchanged
"HA"	Maximum temperature alarm	Outputs unchanged.
"LA"	Minimum temperature alarm	Outputs unchanged.
"HA2"	Condenser high temperature	It depends on the "Ac2" parameter
"LA2"	Condenser low temperature	It depends on the "bLL" parameter
"dA"	Door open	Compressor and fans restarts
"EA"	External alarm	Output unchanged.
"CA"	Serious external alarm (i1F=bAL)	All outputs OFF.
"CA"	Pressure switch alarm (i1F=PAL)	All outputs OFF
"rtc"	Real time clock alarm	Alarm output ON; Other outputs unchanged; Defrosts according to par. "IdF" Set real time clock has to be set
rtF	Real time clock board failure	Alarm output ON; Other outputs unchanged; Defrosts according to par. "IdF" Contact the service

14.1 SILENCING BUZZER / ALARM RELAY OUTPUT

If "**tbA = y**", the buzzer and the relay are is silenced by pressing any key.
If "**tbA = n**", only the buzzer is silenced while the alarm relay is on until the alarm condition recovers.

14.2 ALARM RECOVERY

Probe alarms P1", "**P2", "P3**" and "**P4**" start some seconds after the fault in the related probe; they automatically stop some seconds after the probe restarts normal operation. Check connections before replacing the probe.
Temperature alarms "**HA**", "**LA**" "**HA2**" and "**LA2**" automatically stop as soon as the temperature returns to normal values.
Alarms "**EA**" and "**CA**" (with i1F=bAL) recover as soon as the digital input is disabled.
Alarm "**CA**" (with i1F=PAL) recovers only by **switching off and on** the instrument.

14.3 OTHER MESSAGES

Pon	Keyboard unlocked.
PoF	Keyboard locked
noP	**In programming mode**: none parameter is present in Pr1 **On the display** or in dP2, dP3, dP4: the selected probe is nor enabled

15.   TECHNICAL DATA

Housing: self extinguishing ABS.
Case: facia 38x185 mm; depth 76mm
Mounting : panel mounting in a 150x31 mm panel cut-out with two screws. ∅ 3 x 2mm.
           Distance between the holes 165mm
Protection: IP20; **Frontal protection:** IP65 with frontal gasket mod RG-L. (optional)
Connections: Screw terminal block ≤ 2,5 mm² heat-resistant wiring and 6,3mm Faston
Power supply: 230Vac or. 110Vac or 24Vac ± 10%
Power absorption: 5VA max.
Display: 3 digits, red LED, 14,2 mm high.
Display: 3 digits, red LED, 14,2 mm high; **Inputs:** Up to 4 NTC or PTC probes.
Digital inputs: 2 free voltage
Relay outputs: _**Total current on loads MAX. 20A**_
    compressor: relay SPST 20(8) A, 250Vac
     light: relay SPST 8 or 16(3) A, 250Vac
Other output : buzzer (optional)
Serial output : TTL standard; **Communication protocol:** Modbus - RTU
Data storing: on the non-volatile memory (EEPROM).
Internal clock back-up: 24 hours (only for model with RTC)

Kind of action: 1B; **Pollution grade**: 2; **Software class**: A.;
Rated impulsive voltage: 2500V; **Over voltage Category**: II
Operating temperature: 0÷60 °C; **Storage temperature**: -30÷85 °C.
Relative humidity: 20÷85% (no condensing)
Measuring and regulation range: NTC probe: -40÷110°C (-40÷230°F);
                        PTC probe: -50÷150°C (-58÷302°F)
Resolution: 0,1 °C or 1°C or 1 °F (selectable); **Accuracy (ambient temp. 25°C)**: ±0,7 °C ±1 digit

16. CONNECTIONS

Supply: 120Vac or 24Vac: connect to terminals 11-12
The X-REP output is optional
The light relay can be also 16(5)A according to the model

17. DEFAULT SETTING VALUES

Label	Name	Range	Value	Level
Set	Set point	LS÷US	3.0	- - -
rtc*	Real time clock menu	-	-	Pr1
Hy	Differential	0,1÷25.5°C/ 1÷ 255°F	2.0	Pr1
LS	Minimum set point	-50°C÷SET/-58°F÷SET	-50.0	Pr2
US	Maximum set point	SET÷110°C/ SET ÷ 230°F	110	Pr2
Ot	Thermostat probe calibration	-12÷12°C /-120÷120°F	0.0	Pr1
P2P	Evaporator probe presence	n=not present; Y=pres.	n	Pr1
OE	Evaporator probe calibration	-12÷12°C /-120÷120°F	0.0	Pr1
P3P	Third probe presence	n=not present; Y=pres.	n	Pr2
O3	Third probe calibration	-12÷12°C /-120÷120°F	0	Pr2
P4P	Fourth probe presence	n=not present; Y=pres.	n	Pr2
O4	Fourth probe calibration	-12÷12°C /-120÷120°F	0	Pr2
OdS	Outputs delay at start up	0÷255 min	0	Pr2
AC	Anti-short cycle delay	0 ÷ 50 min	1	Pr1
Ac1	Second compressor start delay	0÷255s	5	Pr2
rtr	P1-P2 percentage for regulation	0 ÷ 100 (100=P1 , 0=P2)	100	Pr2
CCt	Continuous cycle duration	0.0÷24.0h	0.0	Pr2
CCS	Set point for continuous cycle	(-55.0÷150,0°C) (-67÷302°F)	3.0	Pr2
COn	Compressor ON time with faulty probe	0 ÷ 255 min	15	Pr2
COF	Compressor OFF time with faulty probe	0 ÷ 255 min	30	Pr2
CH	Kind of action	cL÷Ht	cL	Pr1
CF	Temperature measurement unit	°C ÷ °F	°C	Pr2
rES	Resolution	in=integer; dE= dec.point	dE	Pr1
Lod	Probe displayed	P1;P2	P1	Pr2
rEd²	X-REP display	P1 – P2 – P3 – P4 – SEt – dtr	P1	Pr2
dLy	Display temperature delay	0 ÷ 20.0 min (10 sec.)	0.0	Pr2
dtr	P1-P2 percentage for display	1 ÷ 99	50	Pr2
EdF*	Kind of interval for defrost	rtc ÷in	in	Pr2
dFP	Probe selection for defrost termination	nP; P1; P2; P3; P4	nP	Pr2
dtE	Defrost termination temperature	-50 ÷ 50 °C	3,0	Pr1
IdF	Interval between defrost cycles	1 ÷ 120 ore	8	Pr1
MdF	(Maximum) length for defrost	0 ÷ 255 min	20	Pr1
dFd	Displaying during defrost	rt, it, SEt, DEF	it	Pr2
dAd	MAX display delay after defrost	0 ÷ 255 min	30	Pr2
ACH	Kind of action auxiliary relay	CL; Ht	cL	Pr2
SAA	Set Point for auxiliary relay	-50,0÷110°C / -58÷230°F	0,0	Pr2
SHy	Differential for auxiliary relay	0,1÷25.5°C/ 1÷ 255°F	2,0	Pr2
ArP	Probe selection for auxiliary relay	nP / P1 / P2 / P3/P4	nP	Pr2
Sdd	Auxiliary relay operating during defrost	n÷y	n	Pr2
ALP	Alarm probe selection	nP; P1; P2; P3; P4	P1	Pr2
ALc	Temperat. alarms configuration	rE= related to set; Ab = absolute	Ab	Pr2
ALU	MAXIMUM temperature alarm	Set÷110.0°C; Set÷230°F	110,0	Pr1
ALL	Minimum temperature alarm	-50.0°C÷Set/ -58°F÷Set	-50,0	Pr1
AFH	Differential for temperat. alarm recovery	(0,1°C÷25,5°C) (1°F÷45°F)	2,0	Pr2
ALd	Temperature alarm delay	0 ÷ 255 min	15	Pr2
dAO	Delay of temperature alarm at start up	0 ÷ 23h e 50'	1,3	Pr2
AP2	Probe for temperat. alarm of condenser	nP; P1; P2; P3; P4	P4	Pr2
AL2	Condenser for low temperat. alarm	(-55 ÷ 150°C) (-67÷ 302°F)	-40	Pr2
AU2	Condenser for high temperat. alarm	(-55 ÷ 150°C) (-67÷ 302°F)	110	Pr2
AH2	Differ. for condenser temp. alar. recovery	[0,1°C ÷ 25,5°C] [1°F ÷ 45°F]	5	Pr2
Ad2	Condenser temperature alarm delay	0 ÷ 254 (min.) , 255=nU	15	Pr2
dA2	Delay of cond. temper. alarm at start up	0.0 ÷ 23h 50'	1,3	Pr2
bLL	Compr. off for condenser low temperature alarm	n(0) - Y(1)	n	Pr2
AC2	Compr. off for condenser high temperature alarm	n(0) - Y(1)	n	Pr2
tbA	Alarm relay disabling	n=no; y=yes	y	Pr2
oA3	Third relay configuration	ALr = alarm; dEF = do not select it; Lig =Light; AUS =AUX; onF=always on; Fan= do not select it; db = neutral zone; cP2 = second compressor; dF2 = do not select it; HES = night blind	Lig	Pr2
AoP	Alarm relay polarity (oA3=ALr)	oP; cL	cL	Pr2

Label	Name	Range	Value	Level
i1P	Digital input polarity (13-14)	oP=opening;CL=closing	cL	Pr1
i1F	Digital input 1 configuration (13-14)	EAL, bAL, PAL, dor; dEF; Htr, AUS	dor	Pr1
did	Digital input alarm delay (13-14)	0÷255min	15	Pr1
i2P	Digital input polarity (13-19)	oP=opening;CL=closing	cL	Pr2
i2F	Digital input configuration (13-19)	EAL, bAL, PAL, dor; dEF; Htr, AUS	EAL	Pr2
d2d	Digital input alarm delay (13-19)	0÷255min	5	Pr2
Nps	Number of activation of pressure switch	0 ÷15	15	Pr2
odc	Compress status when open door	no; Fan; CPr; F_C	F-c	Pr2
rrd	Regulation restart with door open alarm	n – Y	y	Pr2
HES	Differential for Energy Saving	(-30°C÷30°C) (-54°F÷54°F)	0	Pr2
Hur*	Current hour	0 ÷ 23	-	rtc
Min*	Current minute	0 ÷ 59	-	rtc
dAY*	Current day	Sun ÷ SAt	-	rtc
Hd1*	First weekly holiday	Sun÷ SAt – nu	nu	rtc
Hd2*	Second weekly holiday	Sun÷ SAt – nu	nu	rtc
ILE*	Energy Saving cycle start during workdays	0 ÷ 23h 50 min.	0	rtc
dLE*	Energy Saving cycle length during workdays	0 ÷ 24h 00 min.	0	rtc
ISE*	Energy Saving cycle start on holidays	0 ÷ 23h 50 min.	0	rtc
dSE*	Energy Saving cycle length on holidays	0 ÷ 24h 00 min.	0	rtc
Ld1*	1st workdays defrost start	0 ÷ 23h 50 min. - nu	6.0	rtc
Ld2*	2nd workdays defrost start	0 ÷ 23h 50 min. - nu	13.0	rtc
Ld3*	3rd workdays defrost start	0 ÷ 23h 50 min. - nu	21.0	rtc
Ld4*	4th workdays defrost start	0 ÷ 23h 50 min. - nu	0.0	rtc
Ld5*	5th workdays defrost start	0 ÷ 23h 50 min. - nu	0.0	rtc
Ld6*	6th workdays defrost start	0 ÷ 23h 50 min. - nu	0.0	rtc
Sd1*	1st holiday defrost start	0 ÷ 23h 50 min. - nu	6.0	rtc
Sd2*	2nd holiday defrost start	0 ÷ 23h 50 min. - nu	13.0	rtc
Sd3*	3rd holiday defrost start	0 ÷ 23h 50 min. - nu	21.0	rtc
Sd4*	4th holiday defrost start	0 ÷ 23h 50 min. - nu	0.0	rtc
Sd5*	5th holiday defrost start	0 ÷ 23h 50 min. - nu	0.0	rtc
Sd6*	6th holiday defrost start	0 ÷ 23h 50 min. - nu	0.0	rtc
Adr	Serial address	1÷247	1	Pr2
PbC	Kind of probe	Ptc; ntc	ntc	Pr2
onF	on/off key enabling	nu, oFF; ES	oFF	Pr2
dP1	Room probe display	--	-	Pr2
dP2	Evaporator probe display	--	-	Pr2
dP3	Third probe display	--	-	Pr2
dP4	Fourth probe display	--	-	Pr2
rSE	Real set point	actual set	-	Pr2
rEL	Software release	--	1.8	Pr2
Ptb	Map code	--		Pr2

* Only for model with real time clock
² Only for XW20L with X-REP output
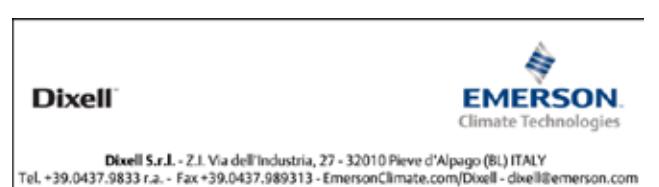
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Specifications subject to changes without prior notification.

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Digital controller for medium-low temperature refrigeration applications

XW60LH

1. GENERAL WARNING

1.1 PLEASE READ BEFORE USING THIS MANUAL

- This manual is part of the product and should be kept near the instrument for easy and quick reference.
- The instrument shall not be used for purposes different from those described hereunder. It cannot be used as a safety device.
- Check the application limits before proceeding.
- Dixell Srl reserves the right to change the composition of its products, even without notice, ensuring the same and unchanged functionality.

1.2 ⚠ SAFETY PRECAUTIONS

- Check the supply voltage is correct before connecting the instrument.
- Do not expose to water or moisture: use the controller only within the operating limits avoiding sudden temperature changes with high atmospheric humidity to prevent formation of condensation
- Warning: disconnect all electrical connections before any kind of maintenance.
- Fit the probe where it is not accessible by the End User. The instrument must not be opened.
- In case of failure or faulty operation send the instrument back to the distributor or to "Dixell S.r.l." (see address) with a detailed description of the fault.
- Consider the maximum current which can be applied to each relay (see Technical Data).
- Ensure that the wires for probes, loads and the power supply are separated and far enough from each other, without crossing or intertwining.
- In case of applications in industrial environments, the use of mains filters (our mod. FT1) in parallel with inductive loads could be useful.
- Dixell Srl reserves the right to change the composition of its products, even without notice, ensuring the same and unchanged functionality.

2. GENERAL DESCRIPTION

Model **XW60LH**, format 38x185mm, is microprocessor based controller, suitable for applications on medium or low temperature ventilated refrigerating units. It has 4 relay outputs to control compressor, fan, defrost, which can be either electrical or reverse cycle (hot gas) and a fourth configurable output. They could be provided with a Real Time Clock which allows programming of up to 6 daily defrost cycles, divided into holidays and workdays. A "Day and Night" function with two different set points is fitted for energy saving. They are also provided with up to four NTC or PTC probe inputs, the first one for temperature control, the second one, to be located onto the evaporator, to control the defrost termination temperature and to managed the fan. One of the digital inputs can operate as third temperature probe. The fourth probe is used to signal the condenser temperature alarm or to display a temperature.
The HOT KEY output allows to connect the unit, by means of the external module XJ485-CX, to a network line **ModBUS-RTU** compatible such as the dIXEL monitoring units of X-WEB family. It allows to program the controller by means the HOT KEY programming keyboard.
The instrument is fully configurable through special parameters that can be easily programmed through the keyboard.

3. CONTROLLING LOADS

3.1 COMPRESSOR

The regulation is performed according to the temperature measured by the thermostat probe with a positive differential from the set point: if the temperature increases and reaches set point plus differential the compressor is started and then turned off when the temperature reaches the set point value again.

In case of fault in the thermostat probe the start and stop of the compressor are timed through parameters **Con** and **CoF**.

3.2 DEFROST

Two defrost modes are available through the **tdF** parameter: defrost through electrical heater (**tdF = EL**) and hot gas defrost (**tdF = in**).
The defrost interval depends on the presence of the RTC (optional). If the RTC is present is controlled by means of parameter **EdF**:
- **EdF=in:** a defrost starts after elapsing the **idF** time (standard way for controller without RTC).
EdF=rtC: defrosts are scheduled by using a real time clock system, depending on the hours set in the parameters **Ld1..Ld6**, during workdays, and in **Sd1…Sd6** during holidays.

Other parameters are used to control defrost cycles: its maximum length (**MdF**) and two defrost modes: timed or controlled by the evaporator's probe (**P2P**).
At the end of defrost dripping time is started, its length is set in the **Fdt** parameter. With **Fdt=0** the dripping time is disabled.

3.3 CONTROL OF EVAPORATOR FANS

The fan control mode is selected by means of the **FnC** parameter:
- **FnC=C_n:** fans will switch ON and OFF with the compressor and **not run** during defrost;
- **FnC=o_n:** fans will run even if the compressor is off, and not run during defrost;
- **FnC=C_Y:** fans will switch ON and OFF with the compressor and **run** during defrost;
- **FnC=o_Y:** fans will run continuously also during defrost.

After defrost, there is a timed fan delay allowing for drip time, set by means of the **Fnd** parameter.
An additional parameter **FSt** provides the setting of temperature, detected by the evaporator probe, above which the fans are always OFF. This is used to make sure circulation of air only if his temperature is lower than set in **FSt**.

3.3.1 Forced activation of evaporator fans
This function, managed by the **FCt** parameter, is designed to avoid short cycles of evaporator fans, which could happen when the controller is switched on or after a defrost (when the room air warms the evaporator). If the temperature difference between the evaporator and the room probes is higher than the value set in the **FCt** parameter the fans are switched on. With **FCt=0** this function is disabled.

3.3.2 Fans cyclic activation with compressor off.
When **FnC=C-n** or **C-Y** (fans working in parallel with the compressor), by means of the **Fon** and **FoF** parameters the fans can carry out on and off cycles even if the compressor is switched off. When the compressor is stopped the fans go on working for the **Fon** time. With **Fon=0** the fans remain always off, when the compressor is off.

3.4 AUXILIARY OUTPUT CONFIGURATION

The functioning of the auxiliary relay can be set by the **oAx** parameters according to the kind of application. In the following paragraph the possible settings are explaided.

3.4.1 Auxiliary thermostat
A possible use is the anti condensing heater, with the possibility of switching it on and off also by keyboard.

Parameters involved:
- **ACH:** kind of regulation for the auxiliary relay: **Ht:** heating; **cL:** cooling;
- **SAA:** set point for auxiliary relay;
- **SHy:** differential for auxiliary relay;
- **ArP:** probe for auxiliary relay;
- **Sdd:** auxiliary output off during defrost.

The differential is given by the **SHy** parameter.
The auxiliary relay can be switched on also by using the AUX button. In this case it remains on till it's manually switched off.

NOTE: If **oAx=AUS** and **ArP=nP** (no probe for auxiliary output), the AUX relay can be activated only by pushing the AUX button of the keyboard.

3.4.2 On/off relay – oAx = onF
In this case the relay is activated when the controller is turned on and de-activated when the controller is turned off.

3.4.3 Neutral zone regulation
With **oAx=db** the AUX relay can control a heater element to perform a neutral zone action.
- output oAx cut in = SET-HY;
- output oAx cut out = SET.

3.4.4 Second compressor
With **oAx=CP2**, the AUX relay operates as second compressor: it is activated in parallel with the relay of the first compressor, with a proper activation delay (set in the **AC1** parameter). Both the compressors are switched off at the same time.

3.4.5 Alarm relay
With **oAx=ALr** the AUX relay operates as alarm relay. It is activated every time an alarm happens. Its status depends on the **tbA** parameter:
- **tbA=Y:** the relay is silenced by pressing any key;
- **tbA=n:** the alarm relay remains on until the alarm condition recovers.

3.4.6 Night blind management during energy saving cycles
With **oAx=HES** the AUX relay operates to manage the night blind: the relay is energised when the energy saving cycle is activated by digital input, frontal button or RTC (optional).

4. FRONT PANEL COMMANDS

SET	To display target set point; in programming mode it selects a parameter or confirm an operation.
❄ (DEF)	To start a manual defrost.
⬆ (UP)	To see the max stored temperature; in programming mode it browses the parameter codes or increases the displayed value.
⬇ (DOWN)	To see the min stored temperature; in programming mode it browses the parameter codes or decreases the displayed value.
⏻ (OFF)	To switch the instrument off, if **onF=oFF**.
☀ (LiG)	To switch the light, if **oA3=Lig**.

KEY COMBINATIONS:

⬆ + ⬇	To lock & unlock the keyboard.
SET + ⬇	To enter in programming mode.
SET + ⬆	To return to the room temperature display.

4.1 USE OF LEDS

Each LED function is described in the following table.

LED	MODE	FUNCTION
❄	ON	Compressor enabled
	Flashing	Anti-short cycle delay enabled
❄	ON	Defrost enabled
	Flashing	Drip time in progress
✦	ON	Fans enabled
	Flashing	Fans delay after defrost in progress.
🔔	ON	An alarm is occurring
❋	ON	Continuous cycle is running
ECO	ON	Energy saving enabled
🔆	ON	Light on
AUX	ON	Auxiliary relay on
°C/°F	ON	Measurement unit
	Flashing	Programming phase

5. MAX & MIN TEMPERATURE MEMORIZATION

5.1 HOW TO SEE THE MIN TEMPERATURE

1. Press and release the **DOWN** key.
2. The "Lo" message will be displayed followed by the minimum temperature recorded.
3. By pressing the **DOWN** key again or by waiting 5 sec the normal display will be restored.

5.2 HOW TO SEE THE MAX TEMPERATURE

1. Press and release the **UP** key.
2. The "Hi" message will be displayed followed by the maximum recorded temperature.
3. By pressing the **UP** key again or by waiting 5 sec the normal display will be restored.

5.3 HOW TO RESET THE MAX AND MIN TEMPERATURE RECORDED

1. Keep SET key pressed more than 3 sec, while the max or min temperature is displayed. (rSt message will be displayed).
2. To confirm the operation the "rSt" message starts blinking and the normal temperature will be displayed.

6. MAINFUNCTIONS

6.1 TO SET THE CURRENT TIME AND DAY (ONLY WITH RTC)

When the instrument is switched on, it's necessary to program the time and day.
1. Enter the Pr1 programming menu, by pushing the **SET+ DOWN** keys for 3 sec.
2. The **rtC** parameter is displayed. Push the **SET** key to enter the real time clock menu.
3. The **Hur** (hour) parameter is displayed.
4. Push the **SET** and set current hour by the **UP** and **DOWN** keys, then push **SET** to confirm the value.
5. Repeat the same operations with **Min** (minutes) and **dAy** (day) parameters.
To exit: Push both **SET+UP** keys or wait for 15 sec without pushing any keys.

6.2 HOW TO SEE THE SET POINT

1. Push and immediately release the **SET** key: the display will show the Set point value.
2. Push and immediately release the **SET** key or wait for 5 sec to display the probe value again.

6.3 HOW TO CHANGE THE SETPOINT

1. Push the **SET** key more than 2 sec to change the Set point value;
2. The value of the set point will be displayed and the "**°C**" or "**°F**" LED will start blinking.
3. To change the Set value, push both **UP** and **DOWN** arrows within 10 sec.
4. To store the new set point value, push the **SET** key again or wait for 10 sec.

6.4 HOW TO START A MANUAL DEFROST

Push the **DEF** key more than 2 sec and to start a manual defrost.

6.5 HOW TO CHANGE A PARAMETER VALUE

To change any parameter, operate as follows:
1. Enter the Programming mode by pressing both **SET+DOWN** keys for 3 sec (the "**°C**" or "**°F**" LED will start blinking).
2. Select the required parameter and then press the **SET** key to display its value.
3. Use **UP** or **DOWN** keys to change its value.
4. Press **SET** to store the new value and move to the following parameter.
To exit: press both **SET+UP** keys or wait for 15 sec without pressing any key.
NOTE: the set value is stored even when the procedure is exited by waiting the time-out to expire.

6.6 THE HIDDEN MENU

The hidden menu shows all the parameters of the instrument.

6.6.1 HOW TO ENTER THE HIDDEN MENU (Pr2)

1. Enter the Programming mode by pressing the **SET+DOWN** keys for 3 sec (the "**°C**" or "**°F**" LED will start blinking).

2. Released the keys and then push again the **SET+DOWN** keys more than 7 sec. The "Pr2" label will be displayed immediately followed by the **HY** parameter.
   NOW THE HIDDEN MENU IS DISPLAYED.
3. Select the required parameter.
4. Press the **SET** key to display its value
5. Use **UP** or **DOWN** keys to change its value.
6. Press **SET** to store the new value and move to the following parameter.
To exit: press **SET+UP** keys or wait for 15 sec without pressing any key.
NOTE1: if no parameters are present in Pr1, after 3 sec the "noP" message will be displayed. Keep the keys pushed till the Pr2 message is displayed.
NOTE2: the set value is stored even when the procedure is exited by waiting the time-out to expire.

6.6.2 MOVE A PARAMETER FROM Pr2 TO Pr1 AND VICEVERSA.

Each parameter present in the Pr2 (HIDDEN MENU) can be moved to the Pr1 (user level) by pressing both **SET+DOWN** keys.
When in Pr2 (hidden menu) if a parameter is visible in Pr1, then the decimal point will be on.

6.7 MANUALLY LOCK AND UNLOCK THE KEYBOARD

HOW TO LOCK THE KEYBOARD
1. Keep both **UP+DOWN** keys pressed more than 3 sec.
2. The "PoF" message will be displayed and the keyboard is locked. At this point it is only possible the viewing of the set point or the MAX o Min temperature stored and to switch ON and OFF the light, the auxiliary output and the instrument.

HOW TO UNLOCK THE KEYBOARD
Keep bothj **UP+DOWN** keys pressed more than 3 sec.

6.8 THE CONTINUOUS CYCLE

When defrost is not active, a continuous cycle can be activated by keeping the **UP** key pressed for about 3 sec. The compressor operates to maintain the **CCS** set point for the time set through the **CCt** parameter. The cycle can be terminated before the end of the set time by keeping the **UP** key pressed 3 sec.

6.9 THE ON/OFF FUNCTION

⏻ With **onF=oFF**, after pushing the ON/OFF key the instrument is switched off. The "OFF" message will be displayed. In this configuration the regulation is disabled. To switch the instrument on, push again the ON/OFF key.

WARNING: Loads connected to the normally closed contacts of the relays are always supplied and under voltage, even if the instrument is in stand by mode.

7. PARAMETERS

rtC	**Real time clock menu (only for controller with RTC):** to set the time, date and defrost start time.

REGULATION

HY	**Differential:** (0.1 to 25.5°C; 1 to 45°F) intervention differential for set point. Compressor Cut IN is Set Point + differential (**HY**). Compressor Cut OUT is when the temperature reaches the set point.
LS	**Minimum set point:** (-55°C to SET; -67°F to SET) sets the minimum value for the set point.
US	**Maximum set point:** (SET to 150°C; SET to 302°F) set the maximum value for set point.
ot	**Thermostat probe calibration:** (-12.0 to 12.0°C; -21 to 21°F) allows to adjust possible offset of the thermostat probe.
P2P	**Evaporator probe presence:** (n; Y) **n** = not present, the defrost stops by time; **Y** = present, the defrost stops by temperature.
oE	**Evaporator probe calibration:** (-12.0 to 12.0°C; -21 to 21°F) allows to adjust possible offset of the evaporator probe.
P3P	**Third probe presence (P3):** (n; Y) **n** = not present, the terminals 18-20 operate as digital input; **Y** = present, the terminals 18-20 operate as third probe.
o3	**Third probe calibration (P3):** (-12.0 to 12.0°C; -21 to 21°F) allows to adjust possible offset of the third probe.
P4P	**Fourth probe presence:** (n; Y) n = Not present; Y = present. **NOTE:** only for XW60LH models.
o4	**Fourth probe calibration:** (-12.0 to 12.0°C; -21 to 21°F) allows to adjust possible offset of the fourth probe. **NOTE:** only for XW60LH models.
odS	**Outputs activation delay at start up:** (0 to 255min) this function is enabled at the initial start up of the instrument and inhibits any output activation for the period of time set in the parameter.
AC	**Anti-short cycle delay:** (0 to 50min) minimum interval between the compressor stop and the following restart.
rtr	**Percentage of the second and first probe for regulation:** (0 to 100; 100=P1, 0=P2) it allows to set the regulation according to the percentage of the first and second probe, as for the following formula (rtr(P1-P2)/100 + P2).
CCt	**Compressor ON time during continuous cycle:** (0.0 to 24h00min, res. 10min) allows to set the length of the continuous cycle. Compressor stays on without interruption during **CCt** time. This is useful, for instance, when the room is filled with new products.
CCS	**Set point for continuous cycle:** (-55 to 150°C; -67 to 302°F) it sets the set point used during the continuous cycle.
Con	**Compressor ON time with faulty probe:** (0 to 255min) time during which the compressor is active in case of faulty thermostat probe. With **Con=0** compressor is always OFF.
CoF	**Compressor OFF time with faulty probe:** (0 to 255min) time during which the compressor is OFF in case of faulty thermostat probe. With **CoF=0** compressor is always active.

DISPLAY

CF	**Temperature measurement unit:** (°C; °F) **°C** = Celsius; **°F** = Fahrenheit. **WARNING:** When the measurement unit is changed the SET point and the values of the parameters **HY, LS, US, ot, ALU** and **ALL** have to be checked and modified (if necessary).
rES	**Resolution (for °C):** (in=1°C; dE=0.1°C) allows decimal point display.
Lod	**Instrument display:** (P1; P2; P3, P4, SET, dtr) it selects which probe is displayed by the instrument. **P1** = Thermostat probe; **P2** = Evaporator probe; **P3** = Third probe (only for model with this option enabled); **P4** = Fourth probe, **SET** = set point; **dtr** = percentage of visualization.
rEd	**X-REP display (optional):** (P1; P2; P3, P4, SET, dtr) it selects which probe is displayed by X- REP. **P1** = Thermostat probe; **P2** = Evaporator probe; **P3** = Third probe (only for model with this option enabled); **P4** = Fourth probe, **SET** = set point; **dtr** = percentage of visualization.
dLY	**Display delay:** (0 to 20min00s; res. 10s) when the temperature increases, the display is updated of 1°C or 1°F after this time.
dtr	**Percentage of the second and first probe for visualization when Lod=dtr:** (0 to 99; 100=P1, 0=P2) if **Lod=dtr** it allows to set the visualization according to the percentage of the first and second probe, as for the following formula (**dtr**(P1-P2)/100 + P2).

DEFROST

EdF	**Defrost mode (only for controller with RTC):** − **rtC: Real Time Clock mode.** Defrost time follows **Ld1 to Ld6** parameters on workdays and **Sd1 to Sd6** on holidays. − **in: interval mode.** The defrost starts when the time **idf** is expired.
tdF	**Defrost type:** (EL; in) **EL** = electrical heater; **in** = hot gas.
dFP	**Probe selection for defrost termination:** (nP; P1; P2; P3; P4) **nP** = no probe; **P1** =thermostat probe; **P2** = evaporator probe; **P3** =configurable probe; **P4** = Probe on Hot Key plug.
dtE	**Defrost termination temperature:** (-55 to 50°C; -67 to 122°F) (enabled only when **EdF=Pb**) sets the temperature measured by the evaporator probe, which causes the end of defrost.
idF	**Interval between defrost cycles:** (0 to 120hours) determines the interval of time between two defrost cycles.
MdF	**(Maximum) length for defrost:** (0 to 255min) when **P2P=n**, (not evaporator probe: timed defrost) it sets the defrost duration. When **P2P=Y** (defrost end based on temperature) it sets the maximum length for defrost.
dSd	**Start defrost delay:** (0 to 99min) this is useful when different defrost start times are necessary to avoid overloading the plant.
dFd	**Temperature displayed during defrost:** (rt; it; SEt; dEF) **rt** = real temperature; **it** = temperature at defrost start; **dSEt** = set point; **dEF** = "dEF" label.
dAd	**MAX display delay after defrost:** (0 to 255min) sets the maximum time between the end of defrost and the restarting of the real room temperature display.
Fdt	**Drip time:** (0 to 120min) time interval between reaching defrost termination temperature and the restoring of the control's normal operation. This time allows the evaporator to eliminate water drops that might have formed due to defrost.
dPo	**First defrost after start-up:** (n; Y) **n** = after the **idF** time, **Y** = immediately.
dAF	**Defrost delay after continuous cycle:** (0.0 to 24h00min, res. 10min) time interval between the end of the fast freezing cycle and the following defrost related to it.

FANS

FnC	**Fans operating mode:** (C-n; o-n; C-Y; o-Y) **C-n** = runs with the compressor, OFF during defrost; **o-n** = continuous mode, OFF during defrost; **C-Y** = runs with the compressor, ON during defrost; **o-Y** = continuous mode, ON during defrost.
Fnd	**Fans delay after defrost:** (0 to 255min) interval between end of defrost and evaporator fans start.
FCt	**Temperature differential to avoid fan short cycles:** (0 to 59°C; 0 to 90°F) (N.B.: **FCt=0** means function disabled) if the difference of temperature between the evaporator and the room probes is higher than **FCt** value, the fans will be switched on.
FSt	**Fans stop temperature:** (-55 to 50°C; -67 to 122°F) setting of temperature, detected by evaporator probe, above which fans are always OFF.
Fon	**Fan ON time:** (0 to 15min) with **Fnc=C_n** or **C_Y**, (fan activated in parallel with compressor) it sets the evaporator fan ON cycling time when the compressor is off. With **Fon=0** and **FoF≠0** the fan are always off, with **Fon=0** and **FoF=0** the fan are always off.
FoF	**Fan OFF time:** (0 to 15min) With **FnC=C_n** or **C_Y**, (fan activated in parallel with compressor) it sets the evaporator fan off cycling time when the compressor is off. With **Fon=0** and **FoF≠0** the fan are always off, with **Fon=0** and **FoF=0** the fan are always off.
FAP	**Probe selection for fan management:** (nP; P1; P2; P3; P4) **nP** = no probe; **P1** =thermostat probe; **P2** = evaporator probe; **P3** =configurable probe; **P4** = Probe on Hot Key plug.

AUXILIARY THERMOSTAT CONFIGURATION

ACH	**Kind of regulation for auxiliary relay:** (Ht; CL) **Ht** = heating; **CL** = cooling.
SAA	**Set Point for auxiliary relay:** (-55.0 to 150.0°C; -67 to 302°F) it defines the room temperature set point to switch auxiliary relay.
SHY	**Differential for auxiliary output:** (0.1 to 25.5°C; 1 to 45°F) intervention differential for auxiliary output set point. • **ACH=CL,** AUX Cut in is [**SAA+SHY**]; AUX Cut outis **SAA**. • **ACH=Ht,** AUX Cut in is [**SAA−SHY**]; AUX Cut out is**SAA**.
ArP	**Probe selection for auxiliary:** (nP; P1; P2; P3; P4) **nP** = no probe, the auxiliary relay is switched only by the digital input; **P1** = Probe 1 (Thermostat probe); **P2** = Probe 2 (evaporator probe); **P3** = Probe 3 (display probe); **P4** = Probe 4.
Sdd	**Auxiliary relay off during defrost:** (n; Y) **n** = the auxiliary relay operates during defrost. **Y** = the auxiliary relay is switched off during defrost.

ALARMS

ALP	**Probe selection for alarm:** (nP; P1; P2; P3; P4) **nP** = no probe, the temperature alarms are disabled; **P1** = Probe 1 (Thermostat probe); **P2** = Probe 2 (evaporator probe); **P3** = Probe 3 (display probe); **P4** = Fourth probe.
ALC	**Temperature alarms configuration:** (Ab; rE) **Ab** = absolute temperature, alarm temperature is given by the **ALL** or **ALU** values. **rE** = temperature alarms are referred to the set point. Temperature alarm is enabled when the temperature exceeds the [**SET+ALU**] or [**SET-ALL**] values.
ALU	**MAXIMUM temperature alarm:** • If **ALC=Ab**: [ALL to 150.0°C or ALL to 302°F] • If **ALC=rE**: [0.0 to 50.0°C or 0 to 90°F] when this temperature is reached the alarm is enabled, after the **ALd** delay time.
ALL	**Minimum temperature alarm:** • If **ALC=Ab**: [-55°C to ALU; -67 toALU] • If **ALC=rE**: [0.0 to 50.0°C or 0 to90°F] when this temperature is reached the alarm is enabled, after the **ALd** delay time.
AFH	**Differential for temperature alarm recovery:** (0.1 to 25.5°C; 1 to 45°F) intervention differential for recovery of temperature alarm.
ALd	**Temperature alarm delay:** (0 to 255 min) time interval between the detection of an alarm condition and alarm signalling.
dAo	**Exclusion of temperature alarm at start-up:** (0.0 to 24h00min, res. 10min) time interval between the detection of the temperature alarm condition after instrument power on and alarm signalling.

CONDENSER TEMPERATURE ALARM

AP2	**Probe selection for temperature alarm of condenser:** (nP; P1; P2; P3; P4) **nP** = no probe; **P1** = thermostat probe; **P2** = evaporator probe; **P3** = configurable probe; **P4** = Probe on Hot Key plug.
AL2	**Low temperature alarm of condenser:** (-55 to 150°C; -67 to 302°F) when this temperature is reached the LA2 alarm is signalled, possibly after the Ad2 delay.
Au2	**High temperature alarm of condenser:** (-55 to 150°C; -67 to 302°F) when this temperature is reached the HA2 alarm is signalled, possibly after the Ad2 delay.
AH2	**Differential for temperature condenser alarm recovery:** 0.1 to 25.5°C; 1 to 45°F.
Ad2	**Condenser temperature alarm delay:** (0 to 255 min) time interval between the detection of the condenser alarm condition and alarm signalling.
dA2	**Condenser temperature alarm exclusion at start up:** 0.0 to 24h00min, res. 10min.
bLL	**Compressor off with low temperature alarm of condenser:** (n; Y) **n** = compressor keeps on working; **Y** = compressor is switched off till the alarm is present, in any case regulation restarts after **AC** time at minimum.
AC2	**Compressor off with high temperature alarm of condenser:** (n; Y) **n** = compressor keeps on working; **Y** = compressor is switched off till the alarm is present, in any case regulation restarts after **AC** time at minimum.

OUTPUT RELAY

tbA	**Alarm relay silencing (with oAx =ALr):** (n; Y) **n** = silencing disabled: alarm relay stays on till alarm condition lasts. **Y** = silencing enabled: alarm relay is switched OFF by pressing a key during an alarm.
oA3	**Third relay configuration (X60LT: terminals 1-3):** (dEF; FAn; ALr; LiG; AUS; onF; db; dEF2; HES) **dEF** = defrost; **FAn** = do not select it; **ALr** = alarm; **LiG** = light; **AUS** = Auxiliary relay; **onF** = always on with instrument on; **db** = neutral zone; **dEF2** = do not select it; **HES** = night blind.
AoP	**Alarm relay polarity:** (CL; oP) it set if the alarm relay is open or closed when an alarm occurs. **CL** = terminals closed during an alarm; **oP** = terminals open during an alarm.

DIGITAL INPUTS

i1P	**Digital input polarity (13-14):** **oP:** the digital input is activated by opening the contact; **CL:** the digital input is activated by closing the contact.
i1F	**Digital input configuration (13-14): EAL**= external alarm: "EA" message is displayed; **bAL**= serious alarm "CA" message is displayed. **PAL**= pressure switch alarm, "CA" message is displayed; **dor**= door switch function; **dEF**= activation of a defrost cycle; **AUS**=not enabled; **Htr**= kind of action inversion (cooling – heating); **FAn**= not set it; **ES**= Energy saving; **HdF** = Holiday defrost (enable only with RTC); **onF**= to switch the controller off.
did	(050÷255 min) **with i1F= EAL or i1F= bAL digital input alarm delay (13-14):** delay between the detection of the external alarm condition and its signalling. **with i1F= dor:** door open signalling delay **with i1F= PAL: time for pressure switch function:** time interval to calculate the number of the pressure switch activation.
i2P	**2nd digital input polarity (13-19): oP:** the digital input is activated by opening the contact; **CL:** the digital input is activated by closing the contact.
i2F	**2nd digital input configuration (13-19): EAL**= external alarm: "EA" message is displayed; **bAL**= serious alarm "CA" message is displayed. **PAL**= pressure switch alarm, "CA" message is displayed; **dor**= door switch function; **dEF**= activation of a defrost cycle; **AUS**=not enabled; **Htr**= kind of action inversion (cooling – heating); **FAn**= not set it; **ES**= Energy saving; **HdF** = Holiday defrost (enable only with RTC); **onF**= to switch the controller off.
d2d	(0÷255 min) **with i2F= EAL or i2F= bAL 2nd digital input alarm delay (13-19):** delay between the detection of the external alarm condition and its signalling. **with i2F= dor:** door open signalling delay **with i2F= PAL: time for pressure switch function:** time interval to calculate the number of the pressure switch activation.
nPS	**Pressure switch number:** (0 ÷15) Number of activation of the pressure switch, during the "**did**" interval, before signalling the alarm event (I2F= PAL). **If the nPS activation in the did time is reached, switch off and on the instrument to restart normal regulation.**
odC	**Compressor status when open door:** (no; FAn; CPr;F_C: **no** = normal; **Fan** = Fan OFF; **CPr** = Compressor OFF; **F_C** = Compressor and fan OFF.
rrd	**Outputs restart after door open alarm:** (n; Y) **n** = outputs follow the **odC** parameter. **Y** = outputs restart with a door open alarm.
HES	**Delta temperature during an Energy Saving cycle:** (-30.0 to 30.0°C; -54 to 54°F) it sets the increasing value of the set point [**SET+HES**] during the Energy Saving cycle.

CURRENT TIME AND WEEKLY HOLIDAYS (ONLY FOR MODELS WITH RTC)

Hur	**Current hour:** 0 to 23h.
Min	**Current minute:** 0 to 59min.
dAY	**Current day:** Sun to SAt.
Hd1	**First weekly holiday:** (Sun to nu) set the first day of the week which follows the holiday times.
Hd2	**Second weekly holiday:** (Sun to nu) set the second day of the week which follows the holiday times.

N.B.: Hd1, Hd2 can be set also as **"nu"** value (Not Used).

ENERGY SAVING TIMES (ONLY FOR MODELS WITH RTC)

ILE	**Energy Saving cycle start during workdays:** (0 to 23h50min) during the Energy Saving cycle the set point is increased by the value in HES so that the operation set point is SET+HES.
dLE	**Energy Saving cycle length during workdays:** (0 to 24h00min) sets the duration of the Energy Saving cycle on workdays.
ISE	**Energy Saving cycle start on holidays:** 0 to 23h50min.
dSE	**Energy Saving cycle length on holidays:** 0 to 24h00min.

TO SET DEFROST TIMES (ONLY FOR MODELS WITH RTC)

Ld1...Ld6	**Workday defrost start:** (0 to 23h50min) these parameters set the beginning of the 6 programmable defrost cycles during workdays. Ex: when **Ld2=12.4** the second defrost starts at 12.40 during workdays.
Sd1...Sd6	**Holiday defrost start:** (0 to 23h50min) these parameters set the beginning of the 6 programmable defrost cycles on holidays. Ex: when **Sd2=3.4** the second defrost starts at 3.40 on holidays.

N.B.: to disable a defrost cycle set it to "nu" (not used).

OTHER

LoC	**Lock keyboard timer:** nu(9) = keyboard never blocked, or 10 to 255 sec
Adr	**Serial address:** (1 to 247) identifies the instrument address when connected to a ModBUS compatible monitoring system.
PbC	**Type of probe:** (PtC; ntC) it allows to set the kind of probe used by the instrument: - **PtC** = PTC probe; - **ntC** = NTC probe.
onF	**On/Off key enabling:** (nU; oFF; ES) nU = disabled; oFF = enabled; ES = not set it.
dP1	Thermostat probe display.
dP2	Evaporator probe display.
dP3	Third probe display.
dP4	Fourth probe display (only for XW60LH models).
rSE	Real set point: it shows the set point used during the energy saving cycle or during the continuous cycle.
rEL	Software release for internal use.
Ptb	Parameter table code: readable only.

8. DIGITAL INPUTS

The first digital input (XW60LH: terminals 13-14) is enabled if **P3P=n**.
With **P3P=n** and **i1F=i2F** the second digital input will be disabled.
The free voltage digital inputs are programmable by the **i1F** and **i2F** parameters.

8.1 GENERIC ALARM (i1F or i2F = EAL)

As soon as the digital input is activated the unit will wait for **did** time delay before signalling the "**EAL**" alarm message. The outputs status doesn't change. The alarm stops just after the digital input is de-activated.

8.2 SERIOUS ALARM MODE (i1F or i2F = bAL)

When the digital input is activated, the unit will wait for **did** delay before signalling the "**CA**" alarm message. The relay outputs are switched OFF. The alarm will stop as soon as the digital input is de-activated.

8.3 PRESSURE SWITCH (i1F or i2F = PAL)

If during the interval time set by **did** parameter, the pressure switch has reached the number of activation of the **nPS** parameter; the "**CA**" pressure alarm message will be displayed. The compressor and the regulation are stopped. When the digital input is ON the compressor is always OFF. **If the nPS activation in the did time is reached, switch off and on the instrument to restart normal regulation.**

8.4 DOOR SWITCH INPUT (i1F or i2F = dor)

It signals the door status and the corresponding relay output status through the **odC** parameter: **no:** normal (any change); **FAn:** Fan OFF; **CPr:** Compressor OFF; **F_C:** Compressor and fan OFF.
Since the door is opened, after the delay time set through parameter **did**, the door alarm is enabled, the display shows the message "**dA**" and **the regulation restarts if rtr=YES.** The alarm stops as soon as the external digital input is disabled again. With the door open, the high and low temperature alarms are disabled.

8.5 START DEFROST (i1F or i2F = dEF)

It starts a defrost if there are the right conditions. After the defrost is finished, the normal regulation will restart only if the digital input is disabled otherwise the instrument will wait until the **MdF** safety time is expired.

8.6 SWITCH THE AUXILIARY RELAY (i1F or i2F = AUS)

With **oAx=AUS** the digital input will change the status of the auxiliary relay.

8.7 INVERSION OF THE KIND OF ACTION: HEATING-COOLING (i1F or i2F=Htr)

This function allows to invert the regulation of the controller: from cooling to heating and viceversa.

8.8 ENERGY SAVING (i1F or i2F = ES)

The Energy Saving function allows to change the set point value as the result of the **SET+HES** (parameter) sum. This function is enabled until the digital input is activated.

8.9 ON OFF FUNCTION (i1F or i2F = onF)

To switch the controller on and off.

8.10 DIGITAL INPUTS POLARITY

The digital input polarity depends on the **i1P** and **i2P** parameters.
- **i1P or i2P =CL:** the input is activated by closing the contact.
- **i1P or i2P=OP:** the input is activated by opening the contact.

9. TTL SERIAL LINE – FOR MONITORING SYSTEMS

The TTL serial line, available through the HOT KEY connector, allows by means of the external TTL/RS485 converter, **XJ485-CX**, to connect the instrument to a monitoring system **ModBUS-RTU** compatible such as the X-WEB500/3000/300.

10. X-REP OUTPUT – OPTIONAL

As optional, an X-REP can be connected to the instrument, trough the dedicated connector.

To connect the X-REP to the instrument the following connectors must be used CAB/REP1(1m), CAB/REP2 (2m), CAB/REP5 (5m),

11. INSTALLATION AND MOUNTING

The **XW60LH** shall be mounted on vertical panel, in a 150x31 mm hole, and fixed using the special brackets supplied with the controllers. The temperature range allowed for correct operation is 0 to 60°C. Avoid places subject to strong vibrations, corrosive gases, excessive dirt or humidity. The same recommendations apply to probes. Let the air circulate by the cooling holes.

11.1 CUT OUT

12. ELECTRICAL CONNECTIONS

The instruments are provided with screw terminal block to connect cables with a cross section up to 2.5 mm² for the digital and analogue inputs. Relays and power supply have a Faston connection (6.3mm). Heat-resistant cables have to be used. Before connecting cables make sure the power supply complies with the instrument's requirements. Separate the probe cables from the power supply cables, from the outputs and the power connections. Do not exceed the maximum current allowed on each relay, in case of heavier loads use a suitable external relay.
N.B. Maximum current allowed for all the loads is 20A.

12.1 PROBE CONNECTION

The probes shall be mounted with the bulb upwards to prevent damages due to casual liquid infiltration. It is recommended to place the thermostat probe away from air streams to correctly measure the average room temperature. Place the defrost termination probe among the evaporator fins in the coldest place, where most ice is formed, far from heaters or from the warmest place during defrost, to prevent premature defrost termination.

13. HOW TO USE THE HOT KEY

13.1 PROGRAM A HOT KEY FROM AN INSTRUMENT (UPLOAD)

1. Program one controller with the front keypad.
2. When the controller is ON, insert the "**HOT-KEY**" and push **UP** button; the "**uPL**" message appears followed a by a flashing "**End**" label.
3. Push **SET** button and the "**End**" will stop flashing.
4. Turn OFF the instrument, remove the "**HOT-KEY**" and then turn it ON again.

NOTE: the "**Err**" message appears in case of a failed programming operation. In this case push again button if you want to restart the upload again or remove the "**HOT-KEY**" to abort the operation.

13.2 PROGRAM AN INSTRUMENT BY USING A HOT KEY (DOWNLOAD)

1. Turn OFF the instrument.
2. Insert a **pre-programmed** "**HOT-KEY**" **into the 5-PIN receptacle** and then turn the Controller ON.
3. The parameter list of the "**HOT-KEY**" will be automatically downloaded into the Controller memory. The "**doL**" message will blink followed a by a flashing "**End**" label.
4. After 10 seconds the instrument will restart working with the new parameters.
5. Remove the "**HOT-KEY**".

NOTE: the message "**Err**" is displayed for failed programming. In this case turn the unit off and then on if you want to restart the download again or remove the "**HOT-KEY**" to abort the operation.

14. ALARM SIGNALS

Message	Cause	Outputs
P1	Room probe failure	Compressor output acc. to par. **Con** and **CoF**
P2	Evaporator probe failure	Defrost end is timed
P3	Third probe failure	Outputs unchanged
P4	Fourth probe failure	Outputs unchanged
HA	Maximum temperature alarm	Outputs unchanged.
LA	Minimum temperature alarm	Outputs unchanged.
HA2	Condenser high temperature	It depends on the **AC2** parameter
LA2	Condenser low temperature	It depends on the **bLL** parameter
dA	Door open	Compressor and fans restarts

Message	Cause	Outputs
EA	External alarm	Output unchanged.
CA	Serious external alarm (i1F=bAL)	All outputs OFF.
CA	Pressure switch alarm (i1F=PAL)	All outputs OFF
rtC	Real time clock alarm	Alarm output ON; Other outputs unchanged; Defrosts according to par. **idF** Set real time clock has to be set.
rtF	Real time clock board failure	Alarm output ON; Other outputs unchanged; Defrosts according to par. **idF**. Contact the service.

14.1 SILENCING BUZZER / ALARM RELAY OUTPUT

− **tbA=Y:** the buzzer and the relay are is silenced by pressing any key.
− **tbA=n:** only the buzzer is silenced while the alarm relay is on until the alarm condition recovers.

14.2 ALARM RECOVERY

Probe alarms **P1**, **P2**, **P3** and **P4** start some seconds after the fault in the related probe; they automatically stop some seconds after the probe restarts normal operation. Check connections before replacing the probe.
Temperature alarms **HA**, **LA**, **HA2** and **LA2** automatically stop as soon as the temperature returns to normal values.
Alarms **EA** and **CA** (with **i1F=bAL**) recover as soon as the digital input is disabled.
Alarm **CA** (with **i1F=PAL**) recovers only by **switching off and on** the instrument.

14.3 OTHER MESSAGES

on	Keyboard enabled after automatic lock.
LOC	Keyboard automatically locked
Pon	Keyboard unlocked.
PoF	Keyboard locked
noP	**In programming mode:** none parameter is present in Pr1. **On the display** or in dP2, dP3, dP4: the selected probe is nor enabled

15. TECHNICAL DATA

Housing: self extinguishing ABS
Case: facia 38x185 mm; depth [XW60LH: 76mm],
Mounting: panel mounting in a 150x31 mm panel cut-out with the 2 metal brackets supplied
Protection: IP20
Frontal protection: IP65
Connections: screw terminal block ≤ 2.5 mm² heat-resistant wiring and 6.3mm Faston
Power supply: 230Vac or. 120Vac or 24Vac ± 10%
Power absorption: 9VA max
Display: 3 digits, white LED, 14.2 mm high
Inputs: Up to 4 NTC or PTC probes
Digital inputs: 2 free voltage
Relay outputs for XW60LH models: *Total current on loads MAX. 20A*
  Compressor: relay SPST 20(8) A, 250Vac
  Light: relay SPST 8 or 16(3) A, 250Vac
  Fans: relay SPST 8(3) A, 250Vac
  Defrost: relay SPST 8(3) A, 250Vac
Other output: buzzer
Serial output: TTL standard
Communication protocol: Modbus - RTU
Data storing: on the non-volatile memory (EEPROM)
Internal clock back-up: 24 hours (only for model with RTC)
Kind of action: 1B
Pollution degree: 2
Software class: A
Rated impulsive voltage: 2500V
Over voltage Category: II
Operating temperature: 0 to 60 °C (32 to 140°F)
Storage temperature: -30 to 85°C (-22 to 185°F).
Relative humidity: 20 to 85% (not condensing)
Measuring and regulation range:
  NTC probe: -40 to 110°C (-40 to 230°F)
  PTC probe: -50 to 150°C (-58 to 302°F)
Resolution: 0.1°C or 1°C or 1°F (selectable)
Accuracy (ambient temp. 25°C): ±0.7°C ±1 digit

16. CONNECTIONS

16.1 XW60LH
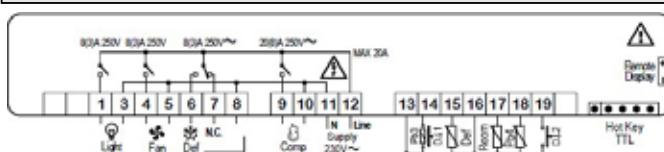
Supply: 120Vac or 24Vac: connect to terminals 11-12
The X-REP output is optional
The light relay can be also 16(5)A according to the model

17. DEFAULT SETTING VALUES

Label	Name	Range	°C/°F	Level
Set	Set point	LS÷US	-5.0	- - -
rtc*	Real time clock menu	-	-	Pr1
Hy	Differential	0,1÷25.5°C/ 1÷ 255°F	2.0	Pr1
LS	Minimum set point	-50°C÷SET/-58°F÷SET	-50.0	Pr2
US	Maximum set point	SET÷110°C/ SET ÷ 230°F	110	Pr2
Ot	Thermostat probe calibration	-12÷12°C /-120÷120°F	0.0	Pr1
P2P	Evaporator probe presence	n=not present; Y=pres.	Y	Pr1

| Label	Name	Range	°C/°F	Level
OE	Evaporator probe calibration	-12÷12°C /-120÷120°F	0.0	Pr2
P3P	Third probe presence	n=not present; Y=pres.	n	Pr2
O3	Third probe calibration	-12÷12°C /-120÷120°F	0	Pr2
P4P	Fourth probe presence	n=not present; Y=pres.	n	Pr2
O4	Fourth probe calibration	-12÷12°C /-120÷120°F	0	Pr2
OdS	Outputs delay at start up	0÷255 min	0	Pr2
AC	Anti-short cycle delay	0 ÷ 50 min	1	Pr1
Ac1	Second compressor start delay	0÷255s	5	Pr2
rtr	P1-P2 percentage for regulation	0 ÷ 100 (100=P1, 0=P2)	100	Pr2
CCt	Continuous cycle duration	0.0÷24.0h	0.0	Pr2
CCS	Set point for continuous cycle	(-55.0÷150,0°C) (-67÷302°F)	-5	Pr2
COn	Compressor ON time with faulty probe	0 ÷ 255 min	15	Pr2
COF	Compressor OFF time with faulty probe	0 ÷ 255 min	30	Pr2
CF	Temperature measurement unit	°C ÷ °F	°C	Pr2
rES	Resolution	in=integer; dE= dec.point	dE	Pr1
Lod	Probe displayed	P1;P2	P1	Pr2
rEd²	X-REP display	P1 – P2 – P3 – P4 – SEt – dtr	P1	Pr2
dLy	Display temperature delay	0 ÷ 20.0 min (10 sec.)	0.0	Pr2
dtr	P1-P2 percentage for display	1 ÷ 99	50	Pr2
EdF*	Kind of interval for defrost	rtc ÷in	in	Pr2
tdF	Defrost type	EL=el. heater; in= hot gas	EL	Pr1
dFP	Probe selection for defrost termination	nP; P1; P2; P3; P4	P2	Pr2
dtE	Defrost termination temperature	-50 ÷ 50 °C	8	Pr1
IdF	Interval between defrost cycles	1 ÷ 120 ore	6	Pr1
MdF	(Maximum) length for defrost	0 ÷ 255 min	30	Pr1
dSd	Start defrost delay	0÷99min	0	Pr2
dFd	Displaying during defrost	rt, it, SEt, DEF	it	Pr2
dAd	MAX display delay after defrost	0 ÷ 255 min	30	Pr2
Fdt	Draining time	0÷120 min	0	Pr2
dPo	First defrost after start-up	n=after IdF; y=immed.	n	Pr2
dAF	Defrost delay after fast freezing	0 ÷ 23h e 50'	0.0	Pr2
Fnc	Fan operating mode	C-n, o-n, C-y, o-Y	o-n	Pr1
Fnd	Fan delay after defrost	0÷255min	10	Pr1
Fct	Differential of temperature for forced activation of fans	0÷50°C	10	Pr2
FSt	Fan stop temperature	-50÷50°C/-58÷122°F	2	Pr1
Fon	Fan on time with compressor off	0÷15 (min.)	0	Pr2
FoF	Fan off time with compressor off	0÷15 (min.)	0	Pr2
FAP	Probe selection for fan management	nP; P1; P2; P3; P4	P2	Pr2
ACH	Kind of action for auxiliary relay	CL; Ht	cL	Pr2
SAA	Set Point for auxiliary relay	-50,0÷110°C / -58÷230°F	0,0	Pr2
SHy	Differential for auxiliary relay	0,1÷25.5°C/ 1÷ 255°F	2,0	Pr2
ArP	Probe selection for auxiliary relay	nP / P1 / P2 / P3/P4	nP	Pr2
Sdd	Auxiliary relay operating during defrost	n÷y	n	Pr2
ALP	Alarm probe selection	nP; P1; P2; P3; P4	P1	Pr2
ALc	Temperat. alarms configuration	rE= related to set; Ab = absolute	Ab	Pr2
ALU	MAXIMUM temperature alarm	Set÷110.0°C; Set÷230°F	110,0	Pr1
ALL	Minimum temperature alarm	-50.0°C÷Set/ -58°F÷Set	-50,0	Pr1
AFH	Differential for temperat. alarm recovery	(0,1°C÷25,5°C) (1°F÷45°F)	2,0	Pr2
ALd	Temperature alarm delay	0 ÷ 255 min	15	Pr2
dAO	Delay of temperature alarm at start up	0 ÷ 23h e 50'	1,3	Pr2
AP2	Probe for temperat. alarm of condenser	nP; P1; P2; P3; P4	P4	Pr2
AL2	Condenser for low temperat. alarm	(-55 ÷ 150°C) (-67÷ 302°F)	-40	Pr2
AU2	Condenser for high temperat. alarm	(-55 ÷ 150°C) (-67÷ 302°F)	110	Pr2
AH2	Differ. for condenser temp. alar. recovery	[0,1°C ÷ 25,5°C] [1°F ÷ 45°F]	5	Pr2
Ad2	Condenser temperature alarm	0 ÷ 254 (min.) , 255=nU	15	Pr2
dA2	Delay of cond. temper. alarm at start up	0.0 ÷ 23h 50'	1,3	Pr2
bLL	Compr. off for condenser low temperature alarm	n(0) - Y(1)	n	Pr2
AC2	Compr. off for condenser high temperature alarm	n(0) - Y(1)	n	Pr2
tbA	Alarm relay disabling	n=no; y=yes	y	Pr2
oA3	Fourth relay configuration	ALr = alarm; dEF = do not select it; Lig =Light; AUS =AUX; onF=always on; Fan: do not select it; db = neutral zone; cP2 = second compressor; dF2 = do not select it; HES = night blind	Lig	Pr2
AoP	Alarm relay polarity (oA3=ALr)	oP; cL	cL	Pr2
i1P	Digital input polarity (13-14)	oP=opening;CL=closing	cL	Pr1
i1F	Digital input 1 configuration (13-14)	EAL, bAL, PAL, dor, dEF; Htr, AUS	dor	Pr1
did	Digital input alarm delay (13-14)	0÷255min	15	Pr1
i2P	Digital input polarity (13-19)	oP=opening;CL=closing	cL	Pr2
i2F	Digital input configuration (13-19)	EAL, bAL, PAL, dor, dEF; Htr, AUS	EAL	Pr2
d2d	Digital input alarm delay (13-19)	0÷255min	5	Pr2
Nps	Number of activation of pressure switch	0 ÷15	15	Pr2
odc	Compress and fan status when open door	no; Fan; CPr; F_C	F-c	Pr2
rrd	Regulation restart with door open alarm	n – Y	y	Pr2
HES	Differential for Energy Saving	(-30°C÷30°C) (-54°F÷54°F)	0	Pr2
Hur*	Current hour	0 ÷ 23	-	rtc
Min*	Current minute	0 ÷ 59	-	rtc
dAY*	Current day	Sun ÷ SAt	-	rtc
Hd1*	First weekly holiday	Sun÷ SAt – nu	nu	rtc
Hd2*	Second weekly holiday	Sun÷ SAt – nu	nu	rtc
ILE*	Energy Saving cycle start during workdays	0 ÷ 23h 50 min.	0	rtc
dLE*	Energy Saving cycle length during workdays	0 ÷ 24h 00 min.	0	rtc
ISE*	Energy Saving cycle start on holidays	0 ÷ 23h 50 min.	0	rtc
dSE*	Energy Saving cycle length on holidays	0 ÷ 24h 00 min.	0	rtc
Ld1*	1st workdays defrost start	0 ÷ 23h 50 min. - nu	6.0	rtc
Ld2*	2nd workdays defrost start	0 ÷ 23h 50 min. - nu	13.0	rtc
Ld3*	3rd workdays defrost start	0 ÷ 23h 50 min. - nu	21.0	rtc
Ld4*	4th workdays defrost start	0 ÷ 23h 50 min. - nu	0.0	rtc
Ld5*	5th workdays defrost start	0 ÷ 23h 50 min. - nu	0.0	rtc
Ld6*	6th workdays defrost start	0 ÷ 23h 50 min. - nu	0.0	rtc
Sd1*	1st holiday defrost start	0 ÷ 23h 50 min. - nu	6.0	rtc
Sd2*	2nd holiday defrost start	0 ÷ 23h 50 min. - nu	13.0	rtc
Sd3*	3rd holiday defrost start	0 ÷ 23h 50 min. - nu	21.0	rtc
Sd4*	4th holiday defrost start	0 ÷ 23h 50 min. - nu	0.0	rtc
Sd5*	5th holiday defrost start	0 ÷ 23h 50 min. - nu	0.0	rtc
Sd6*	6th holiday defrost start	0 ÷ 23h 50 min. - nu	0.0	rtc
Adr	Serial address	1÷247	1	Pr2
PbC	Kind of probe	Ptc; ntc	ntc	Pr2
onF	on/off key enabling	nu, oFF; ES	oFF	Pr2

Label	Name	Range	°C/°F	Level
dP1	Room probe display	--	-	Pr2
dP2	Evaporator probe display	--	-	Pr2
dP3	Third probe display	--	-	Pr2
dP4	Fourth probe display	--	-	Pr2
rSE	Real set	actual set	-	Pr2
rEL	Software release	--	1.8	Pr2
Ptb	Map code	--		Pr2

* Only for model with real time clock
[2] Only for XW60LH with X-REP output

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Specifications subject to changes without prior notification.

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