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Assembly and operating instructions

ENCLOSURES

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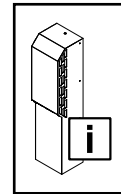
CLIMATE CONTROL

IT INFRASTRUCTURE

SOFTWARE & SERVICES

FRIEDHELM LOH GROUP





Hazards and their prevention according to IEC 60417/ISO 7000/ISO 7010



DE Die Anschlussvorschriften des zuständigen Stromversorgungsunternehmens sind zu beachten. Der Schutzleiter, der Haube und Chassis verbindet, muss in jedem Fall an beiden Steckern angeschlossen werden. Ansonsten besteht bei einem fehlerhaftem oder defekten Anschluss des Geräts Verletzungsgefahr durch Stromschlag.

EN The connection regulations of the appropriate power supply company are to be followed. The protective conductor between the hood and the frame must always be attached to both plug connectors. Otherwise, there is risk of injury from electric shock if the connection to the unit is defective or connected incorrectly in any way.

FR Respecter les directives de raccordement du fournisseur d'électricité compétent. La tresse de mise à la masse qui relie le capot au châssis doit dans tous les cas être raccordée aux deux fiches. Sinon il y a risque de blessure par électrocution en cas de raccordement erroné ou défectueux de l'appareil.

NL Neem de aansluitvoorschriften van het desbetreffende energiebedrijf in acht. De beschermingsgeleiding, die de kap en het chassis verbindt, dient in elk geval op beide connectoren te worden aangesloten. Anders bestaat bij een onjuiste of defecte aansluiting van het apparaat een risico op letsel door een elektrische schok.

SE Anslutningsföreskrifterna från det ansvariga elförsörjningsföretaget måste följas. Skyddsledaren som förbinder huven och chassit måste alltid vara ansluten till båda kontaktorna. Annars finns risk för skador genom strömstötter vid felaktig eller defekt anslutning av aggregatet.

IT Osservare le prescrizioni relative al collegamento dell'azienda fornitrice di elettricità competente. Il conduttore di protezione che collega la copertura al telaio deve essere sempre collegato su entrambe le estremità. In caso di collegamento assente o errato del dispositivo vi è il pericolo di lesioni dovute a scossa elettrica.

ES Deben tenerse en cuenta las normas de conexión de la compañía eléctrica competente. El conductor de protección, que conecta la cubierta y el chasis, debe conectarse siempre a ambos conectores. En caso contrario, con una conexión errónea o defectuosa del aparato, existe un peligro de lesión por descarga eléctrica.

FI Huomioi energiayhtiön liitännäohjeet. Muussa tapauksessa laitteen virheellinen tai viallinen liitäntä saattaa aiheuttaa sähköiskusta johtuvan loukkaantumisvaaran.

DK Følg altid tilslutningsvejledningen fra det ansvarlige elsselskab. Beskyttelseslederen, som forbinder dækslet med chassiset, skal altid være tilsluttet i begge stik. Hvis ikke dette er tilfældet, er der risiko for at få elektrisk stød som følge af forkert eller defekt tilslutning af enheden.

IE Ní mór rialacháin nasctha na cuideachta cuí a sholáthraíonn an chumhacht a leanúint. Ní mór go mbeadh an seoltóir cosanta idir an cochall agus an fráma nasctha leis an dá nascóir plocóide. Mura mbíonn, tá baol gortaithe ó thurraing leictreach má tá an nasc leis an aonad lochtach nó má tá sé nasctha ar cearr ar bhealach ar bith.

PT Seguir as orientações da respectiva empresa de fornecimento de energia elétrica. O condutor de proteção que interliga a cobertura com o chassi deve estar sempre conectado em ambas as extremidades. Caso contrário, haverá risco de choque elétrico se a conexão do aparelho apresentar falha ou estiver incorreta.

HR Potrebno je pridržavati se pravila o priključivanju odgovarajućeg napona isporučitelja električne energije. Zaštitno uzemljenje između poklopca i okvira mora uvijek s biti spojeno na priključne točke poklopca i okvira. Ukoliko zaštitno uzemljenje nije propisno spojeno ili je oštećeno, postoji opasnost od ozljeda uzrokovanih strujnim udarom.

MT Għandhom jiġu osservati r-rekwiżiti tat-tqabbid tal-kumpanija tal-provvista tal-elettriku lokali. Il-konduttur protettiv li jgħabba il-hood max-xażi għandu jkun imqabba dejjem biż-żewġ plugs. Inkella jkun hemm ir-riskju ta' xokk elettriku jekk ikun hemm konnessjoni mhux tajba jew difettuża.

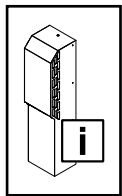
PL Przestrzegać przepisów odpowiedniego Zakładu Energetycznego. Przewód ochronny łączący pokrywę z obudową musi być zawsze podłączony z obu stron. W przeciwnym razie, w przypadku błędnego lub wadliwego podłączenia urządzenia, istnieje niebezpieczeństwo porażenia prądem elektrycznym.

CZ Dodržujte předpisy příslušného dodavatele elektrické energie pro připojení elektrického zařízení. V každém případě musí být připojeny oba konektory ochranného vodiče, který spojuje přední plášť jednotky a její rám. Jinak hrozí při chybném nebo vadném připojení přístroje nebezpečí úrazu elektrickým proudem.

BG Трябва да се спазват предписанията за свързване към захранването на компетентното електроснабдително дружество. Заземяващият проводник, който свързва капака и рамата, във всички случаи трябва да се свърже към двата конектора. В противен случай съществува опасност от нараняване вследствие на токов удар в случай на неправилно или неизправно свързване на уреда или неизправна електрическа мрежа.

GR Πρέπει να τηρούνται οι κανονισμοί σύνδεσης της σχετικής εταιρείας παροχής ηλεκτρικού ρεύματος. Ο προστατευτικός αγωγός μεταξύ του καλύμματος και του πλαισίου πρέπει να συνδέεται πάντα και στις δύο υποδοχές βύσματος. Σε αντίθετη περίπτωση, υπάρχει κίνδυνος τραυματισμού από ηλεκτροπληξία εάν η σύνδεση της μονάδας είναι ελαττωματική ή εσφαλμένη.

RO Trebuie respectate cerințele de racordare ale companiei locale de alimentare cu energie. Conductorul de protecție dintre capac și carcasa trebuie să fie conectat întotdeauna la ambele prize. În cazul în care conexiunea aparatului este incorectă sau defectuoasă, există pericol de rănire prin electrocutare.



Warn- und Sicherheitshinweise / Safety instructions and warnings / Consignes de sécurité Rittal Blue e enclosure cooling units

Hazards and their prevention according to IEC 60417/ISO 7000/ISO 7010

HU Az illetékes áramszolgáltató csatlakoztatási előírásait figyelembe kell venni. A burkolatot és a vázat összekötő védővezetéket minden esetben mindkét csatlakozóhoz csatlakoztatni kell. Ellenkező esetben, a berendezés hibás vagy meghibásodott csatlakoztatása esetén áramütés veszélye áll fenn.

LT Privalu laikytis atsakingos elektros tiekimo tinklų bendrovės parengtą instrukciją. Apsauginis laidininkas, jungiantis gaubtą ir korpusą, visada turi būti prijungtas prie abiejų jungčių. Įrenginio jungties pažeidimo ar defekto atveju kyla pavojus susižaloti gavus elektros smūgį.

EE Järgige vastutava elektrivarustuse ettevõtte vooluvõrku ühendamise eeskirju. Juhtkaitse, mis ühendab katet ja alusraami, peab igal juhul olema mõlemast pistikust ühendatud. Vastasel korral tekib seadme puudulikul või defektsel ühendamisel vigastusohut elektrilöögi tõttu.

LV Ievērojiet izmantotā elektropiegādes uzņēmuma pieslēguma noteikumus. Starp pārsegu un rāmi esošajam nulles vadam vienmēr ir jābūt pievienotam abiem elektriskajiem spraudņiem. Pretējā gadījumā, ja iekārtas savienojumā ir radusies kļūme vai ja tā ir pieslēgta nepareizi, pastāv risks ciest no elektriskās strāvas trieciena.

SI Upoštevat je treba predpise za priključevanje naprav pristojnega podjetja za distribucijo električne energije. Ozemljitveni priključek, ki povezuje pokrov in ohišje, je treba v vsakem primeru namestiti na oba vtiča. V nasprotnem primeru pri napačni priključitvi ali okvarjenem priključku obstaja nevarnost nastanka poškodb zaradi električnega udara.

SK Treba dbať na predpisy príslušného dodávateľa elektrickej energie týkajúce sa zapojenia. Ochranný vodič, ktorý spája kryt a spodnú časť zariadenia, musí byť v každom prípade zapojený do oboch zásuviek. V opačnom prípade hrozí pri chybnom alebo nedostatočnom zapojení zariadenia nebezpečenstvo úrazu elektrickým prúdom.

RU Необходимо соблюдать указания по подключению компетентного энергопредприятия. Провод заземления, соединяющий кожух и основание, должен быть обязательно подключен с двух сторон. В противном случае при отсутствующем или поврежденном подключении имеется опасность поражения током.



DE Bitte beachten Sie die maximal zulässigen Hebegewichte für Personen. Ggf. ist eine Hebevorrichtung zu verwenden.

EN Please observe the maximum permissible weight to be lifted by one person. Use suitable lifting devices, if needed.

FR Veuillez tenir compte du poids de levage maximal autorisé pour les personnes et le cas échéant utilisez un appareil de levage.

NL Neem het maximaal toegestane tilgewicht voor personen in acht. Gebruik eventueel een hefwerktuig.

SE Observera de maximalt tillåtna lyftvikterna för personer. Vid behov ska en lyftanordning användas.

IT Prestare attenzione ai carichi massimi consentiti per le persone. Se necessario, utilizzare un dispositivo di sollevamento.

ES Rogamos tenga en cuenta el peso máximo permitido que puede levantar una persona. En caso necesario deberá utilizarse un dispositivo de elevación.

FI Huomioi sallittu enimmäisnostopaino. Käytä tarvittaessa nostolaitetta.

DK Overhold den maksimalt tilladte løftevægt for personer. Brug en løfteanordning, hvis vægten overskrider den tilladte løftevægt.

IE Cloígh leis an uasmhéachán is ceadmhach do dhuine amháin a chrochadh. Úsáid gairis ardaíthe atá oiriúnach, más gá.

PT Por favor, considere o peso máximo permitido a ser levantado por uma pessoa. Caso necessário, utilize equipamento adequado.

HR Obratite pažnju na najveću dopuštenu masu koju smije podizati jedna osoba. Ako je potrebno, preporuča se upotreba opreme za podizanje i premještanje.

MT Jekk jogħġbok innota l-piżijiet ta' riġħ massimi permessibbli għan-nies. Jekk ikun hemm bżonn, jehtieg li jintuża apparat tal-irfiġħ.

PL Prosimy o nieprzekraczanie maksymalnych dopuszczalnych ciężarów podnoszonych przez ludzi. W razie potrzeby należy zastosować urządzenie podnośnikowe.

CZ Dodržujte maximální přípustné hmotnosti zvedaných břemen stanovené pro osoby. Případně použijte zvedací zařízení.

BG Спазвайте максимално допустимата товароносимост на човек при транспортиране на охладителя. Ако се налага, използвайте подемно устройство.

GR Παρακαλούμε τηρείτε το μέγιστο επιτρεπόμενο βάρος που μπορεί να αρθεί από ένα άτομο. Χρησιμοποιήστε κατάλληλες συσκευές ανύψωσης, εάν είναι απαραίτητο.

RO Respectați greutatea de ridicare maxim admisă pentru o persoană. Dacă este necesar, utilizați dispozitive de ridicare.

HU Vegye figyelembe az egy személy számára maximálisan megengedett emelhető tömegeket. Szükség esetén emelőberendezést kell használni.

LT Žmonės neturėtų kelti pernelyg sunkaus svorio. Prireikus reikia naudoti kėlimo įrangą.

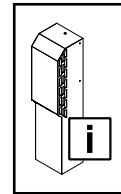
EE Arvestage inimestele maksimaalselt lubatud tõstekaaludega. Vajaduse korral kasutage tõsteseadeldist.

LV Lūdzu, ievērojiet ierobežojumus attiecībā uz maksimālo svaru, ko ļauns celt vienai personai. Izmantojiet atbilstošas celšanas ierīces, kad tas ir nepieciešams.

SI Upošteвайте največjo dovoljeno težo, ki jo oseba lahko varno dvigne. Po potrebi uporabite dvizno napravo.

SK Dodržiavajte maximálne limity pre osoby na zdvíhanie bremien. V prípade prekročenia tohto limitu použite zdvíhacie zariadenie.

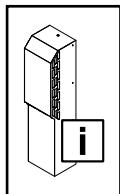
RU При транспортировке вручную обращайтесь внимание на максимально допустимый вес. При необходимости используйте подъемное устройство.



Hazards and their prevention according to IEC 60417/ISO 7000/ISO 7010



- DE** Das Kühlgerät ist nur standsicher, solange Haube und Chassis miteinander verbunden sind. Sichern Sie daher insbesondere das Chassis gegen Umfallen, bevor Sie die Haube abnehmen.
- EN** The cooling unit only stands safely while the hood and chassis are joined to each other. Ensure that the frame, in particular, is secured against tipping before removing the hood.
- FR** Le climatiseur est stable uniquement si le capot et le châssis sont reliés entre eux. S'assurer pour cela que le châssis ne puisse pas tomber avant d'ôter le capot.
- NL** Het koelaggregaat is alleen stabiel zo lang kap en chassis met elkaar zijn verbonden. Zorg er daarom voor dat als u de kap verwijderd, het chassis niet kan omvallen.
- SE** Kylaggregatet står endast stabilt så länge huven och chassit är förbundna med varandra. Säkra därför framför allt chassit så att det inte välter, innan du tar av huven.
- IT** Il condizionatore è stabile solo se la copertura e il telaio sono collegati tra loro. Mettere pertanto il telaio in sicurezza da eventuali cadute prima di rimuovere la copertura.
- ES** El refrigerador sólo se encuentra suficientemente estable, cuando la cubierta y el chasis se encuentran conectados el uno con el otro. Por este motivo es importante proteger especialmente el chasis de una caída, antes de retirar la cubierta.
- FI** Jäähdytín on vakaa vain, kun kehikko ja runko on kiinnitetty toisiinsa. Tue erityisesti runko kaatumisen varalta ennen suojuksen irrottamista.
- DK** Køleenheden står kun sikkert fast, hvis dækslet og chassiset er forbundet med hinanden. Sørg derfor for at sikre chassiset, så det ikke vælter, før dækslet tages af.
- IE** Ní bhíonn an t-aonad fuaraithe ina sheasamh go sábháilte ach amháin nuair atá an cochall agus an fonnadh nasctha le chéile. Cinntigh go ndaingnítear an fráma, go háirithe, sula mbaintear an cochall de, sa chaoi nach n-iompóidh sé.
- PT** O condicionador de ar estará fixo apenas quando a cobertura estiver conectada ao chassi. Antes de remover a cobertura, certificar-se de que o chassi esteja seguro e não possa tombar.
- HR** Rashladna jedinica stoji sigurno samo ukoliko su poklopac i kućište međusobno ispravno spojeni. Obratite posebnu pažnju da je okvir osiguran od prevrtanja prije nego uklanjate poklopac rashladne jedinice.
- MT** L-unità ta' tkessiġ hija stabbli biss meta x-xażi u l-hood it-twila jkun qiegħdin ma' xulxin. Oqgħod attent/a b' mod partikolari li x-xażi ma jgħlibx qabel tneħħi l-kappa.
- PL** Urządzenie jest stabilne tylko wówczas, gdy pokrywa i obudowa są ze sobą połączone. Dlatego przed zdjęciem pokrywy należy zabezpieczyć obudowę przed przewróceniem się.
- CZ** Chladicí jednotka je stabilní jen v případě namontovaného pláště na chladicí jednotce. Před sejmutím pláště proto zajistěte samotný rám jednotky proti převrnutí.
- BG** Климатикът е стабилен само когато капакът и рамата са свързани помежду си. Затова укрепете най-вече рамата срещу падане, преди да свалите капака.
- GR** Η μονάδα ψύξης στέκεται με ασφάλεια μόνο όταν το κάλυμμα και το πλαίσιο έχουν συνδεθεί μεταξύ τους. Βεβαιωθείτε ότι ειδικά το πλαίσιο είναι ασφαλισμένο έναντι ανατροπής πριν αφαιρέσετε το κάλυμμα.
- RO** Aparatul de răcire este stabil numai dacă sunt interconectate capacul și carcasa. În acest scop, asigurați carcasa împotriva căderii, înainte de a scoate capacul.
- HU** A hűtőberendezés csak akkor áll biztonságosan, ha a burkolat és a váz egymással össze van kötve. Ezért a vázat biztosítsa eldőlés ellen, mielőtt a burkolatot leveszi.
- LT** Šaldymo įrenginys stabilus tol, kol gaubtas sujungtas su korpusu. Todėl prieš nuimdami gaubtą, įsitinkinkite, kad korpusas yra stabilus ir nenukristų.
- EE** Jahutusseade on kindlalt püsti vaid siis, kui kate ja alusraam on omavahel ühendatud. Kindlustage ümberkukkumise vastu alusraam enne katte mahavõtmist.
- LV** Dzesēšanas bloka droša novietošana tiek paveikta pārsegu pienācīgi savienojot ar konstrukciju. Pārliecinieties par to, lai rāmis būtu pasargāts pret sasvēršanos, pirms pārsega noņemšanas.
- SI** Hladilna naprava je stabilna, dokler sta pokrov in ohišje klime povezana. Preden snamete pokrov, je zato potrebno ohišje še posebej zavarovati, da se ne prevrne.
- SK** Klimatizačné zariadenie je stabilné len vtedy, ak sú kryt a spodná časť spojené. Najmä spodnú časť preto zaistite pred prevrátením ešte skôr, ako odstránite kryt.
- RU** Холодильный агрегат устойчив в вертикальном положении, когда кожух и основание соединены между собой. Поэтому перед удалением кожуха защитите основание агрегата от опрокидывания.



Warn- und Sicherheitshinweise / Safety instructions and warnings / Consignes de sécurité
Rittal Blue e enclosure cooling units

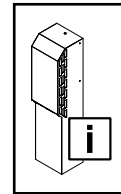
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- DE** Vor dem Abnehmen der Haube muss das Gerät mind. 10 Min. abkühlen, um Verbrennungen an heißen Oberflächen zu vermeiden.
- EN** Before removing the hood, allow the unit to cool for at least 10 minutes to eliminate the risk of burns from hot surfaces.
- FR** Avant d'ôter le capot, l'appareil doit refroidir pendant au moins 10 minutes pour éviter les brûlures sur les surfaces brûlantes.
- NL** Voor het afnemen van de kap dient het apparaat minstens tien minuten af te koelen, zodat u zich niet brandt aan hete oppervlakken.
- SE** Innan huven tas av måste aggregatet svalna i minst 10 minuter för att undvika att personer bränner sig på heta ytor.
- IT** Far raffreddare il dispositivo per almeno 10 minuti prima di rimuovere la copertura per evitare eventuali ustioni al contatto con le superfici bollenti.
- ES** El aparato debe haberse enfriado durante un mínimo de 10 minutos antes de proceder a retirar la cubierta, con el fin de evitar quemaduras.
- FI** Ennen kehikon irrottamista laitteen on annettava jäähtyä vähintään 10 minuuttia, jotta vältetään kuumien pintojen aiheuttamat palovammat.
- DK** Lad enheden køle af i mindst ti minutter, før dækslet tages af, for at undgå risiko for at brænde sig på varme overflader.
- IE** Sula mbaintear an cochall de, lig don aonad fuarú ar feadh deich nóiméad ar a laghad chun an baol dó ó dhromchlaí teo a sheachaint.
- PT** Antes de remover a cobertura, deixar o aparelho arrefecer durante, no mínimo, 10 minutos para evitar risco de queimadura nas superfícies quentes.
- HR** Prije uklanjanja poklopca pričekajte barem 10 minuta da se uređaj ohladi, kako bi se uklonila opasnost od opekotina uzrokovanih vrućim površinama.
- MT** Qabel tneħhi l-ghatu, l-apparat għandu jithalla jibred għal mill-inqas 10 min biex tevita ħruq minħabba uċuh jaħarqu.
- PL** Przed zdjęciem pokrywy urządzenie musi się chłodzić przez minimum 10 minut, aby nie doszło do poparzenia przez gorące powierzchnie.
- CZ** Před sejmutím pláště jednotky je nutno nechat chladicí jednotku minimálně 10 minut vychladnout, aby nedošlo k popálení o horké povrchy.
- BG** Преди да бъде свален капакът, уредът трябва да се остави да изстине най-малко 10 минути, за да се избегнат изгаряния от горещите повърхности.
- GR** Πριν αφαιρέσετε το κάλυμμα, αφήστε τη μονάδα να ψυχθεί για τουλάχιστον 10 λεπτά για να εξαλειφθεί ο κίνδυνος εγκαυμάτων από καυτές επιφάνειες.
- RO** Înainte de scoaterea capacului, aparatul trebuie lăsat să se răcească cel puțin 10 min., pentru a evita arsurile cauzate de contactul cu suprafețele fierbinți.
- HU** A burkolat levétele előtt a berendezést legalább 10 percig hagyja lehűlni a forró felületek miatti égési sérülések elkerülése érdekében.
- LT** Prieš nuimdami gaubtą, turite palaukti bent 10 minučių, kol įrenginys atvės, kad nenusidegintumėte prisilietę prie karštų paviršių.
- EE** Enne kätte mahavõtmist peab seade vähemalt 10 minutit jahtuma, et vältida põletusi kuumade pindade tõttu.
- LV** Pirms pārsega atvēršanas, ļaujiet iekārtai atdzist vismaz 10 minūtes, lai izvairītos no apdedzināšanās riska, ko rada uzkarsušās virsmas.
- SI** Preden snamete pokrov, naj se naprava najmanj 10 minut ohlaja, da se izognete nevarnosti opeklin na vročih površinah.
- SK** Pred odstránením krytu musí zariadenie minimálne 10 minút chladnúť, inak môže dôjsť k popáleniu na horúcich povrchoch.
- RU** Перед снятием кожуха дать агрегату остыть в течение ок. 10 мин., во избежание ожога о горячие поверхности.



- DE** Verwenden Sie niemals brennbare Flüssigkeiten zur Reinigung des Geräts.
- EN** Never use flammable liquids for cleaning.
- FR** Ne jamais utiliser de liquides inflammables pour le nettoyage.
- NL** Gebruik geen brandbare vloeistoffen voor het reinigen.
- SE** Använd inga brännbara vätskor för rengöring.
- IT** Non utilizzare liquidi infiammabili per la pulizia.
- ES** No utilice líquidos inflamables para realizar la limpieza.
- FI** Älä käyttää puhdistukseen palavia nesteitä.
- DK** Brug aldrig brændbare væsker til rengøring.
- IE** Ná húsáid leachtanna inlasta riamh i gcomhair glanta.
- PT** Nunca utilizar líquidos inflamáveis para efetuar a limpeza.
- HR** Nikada ne koristite zapaljive tekućine za čišćenje.



Hazards and their prevention according to IEC 60417/ISO 7000/ISO 7010

MT Tužax likvidi li jieħdu n-nar għat-tindif.

PL Do czyszczenia urządzenia nie stosować łatwopalnych cieczy.

CZ Nepoužívejte k čištění žádné hořlavé kapaliny.

BG Не използвайте запалими течности за почистване.

GR Μη χρησιμοποιείτε ποτέ εύφλεκτα υγρά για τον καθαρισμό.

RO Nu utilizați lichide inflamabile pentru curățare.

HU Tisztításhoz ne használjon gyúlékony folyadékokat.

LT Valydami nenaudokite degių skysčių.

EE Ärge kasutage puhastamiseks põlevaid vedelikke.

LV Nekad neizmantojiet uzliesmojošus tīršanas līdzekļus.

SI Za čiščenje ne uporabljajte vnetljivih tekočin.

SK Na čistenie nepoužívajte horľavé kvapaliny.

RU Никогда не используйте горючие жидкости для чистки агрегата.

DE Das Kühlgerät ist ausschließlich zum Kühlen von geschlossenen Schaltschränken sowie zur professionellen Nutzung gemäß DIN EN 61000-3-2 vorgesehen. Eine andere Verwendung ist nicht bestimmungsgemäß. Das Gerät darf nicht an Orten installiert und betrieben werden, die der allgemeinen Öffentlichkeit (siehe DIN EN 60335-2-40, Absatz 3.119) zugänglich sind. Das Gerät ist nur für den stationären Betrieb ausgelegt.

EN The cooling unit is intended exclusively for cooling closed control cabinets as well as for professional use in accordance with DIN EN 61000-3-2. Any other use is not permitted. The unit must not be installed and operated in locations which are accessible to the general public (see DIN EN 60335-2-40, paragraph 3.119). The unit is designed solely for stationary use.

FR Le climatiseur est prévu uniquement pour rafraîchir les armoires électriques étanches dans un cadre professionnel conformément à la norme EN 61000-3-2. Toute autre utilisation est non conforme. Le climatiseur ne doit pas être installé et exploité dans des lieux accessibles au public (voir norme EN 60335-2-40, paragraphe 3.119). Le climatiseur est uniquement destiné à l'exploitation statique.

NL Het koelaggregaat is uitsluitend bestemd voor het koelen van gesloten schakelkasten en voor professioneel gebruik volgens DIN EN 61000-3-2. Elke andere toepassing wordt gezien als niet-voorgeschreven gebruik. Het apparaat mag niet worden geïnstalleerd op plaatsen die openbaar (zie DIN EN 60335-2-40, paragraaf 3.119) toegankelijk zijn. Het apparaat is alleen ontworpen voor stationair gebruik.

SE Kylaggregatet är endast avsedd för kylning av slutna golvsåp i enlighet med DIN EN 61000-3-2. Annan användning är inte tillåten. Aggregatet får inte installeras och köras på platser som är tillgängliga för allmänheten (se DIN EN 60335-2-40, stycke 3.119). Aggregatet är konstruerat uteslutande för stationär drift.

IT Il condizionatore è destinato esclusivamente al raffreddamento degli armadi di comando chiusi e per uso professionale secondo EN 61000-3-2. Ogni altro impiego è da intendersi non conforme alla sua destinazione d'uso. L'apparecchio non deve essere installato e utilizzato in aree accessibili al pubblico (vedere la norma DIN EN 60335-2-40, paragrafo 3.119). L'apparecchio può essere utilizzato solo da fermo.

ES El refrigerador se ha diseñado exclusivamente para la refrigeración de armarios de distribución estancos, para su uso según lo detallado en la normativa DIN EN 61000-3-2. Cualquier otro uso no está permitido. El equipo no debe ser instalado ni puesto en funcionamiento en entornos accesibles al público en general (ver DIN EN 60335-2-40, párrafo 3.119). El equipo está diseñado para un funcionamiento estacionario.

FI Jäähdytysyksikkö on tarkoitettu yksinomaan suljettujen koteloiden jäähdytykseen sekä ammattikäyttöön DIN EN 61000-3-2 mukaisesti. Mikään muu käyttö ei ole sallittua. Laitetta ei saa asentaa ja käyttää yleisessä käytössä olevissa paikoissa (katso DIN EN 60335-2-40, kohta 3.119). Laitte on suunniteltu ainoastaan kiinteään käyttöön.

DK Køleenheden er kun beregnet til køling af lukkede indkapslinger og kun til professionelt brug i henhold til DIN EN 61000-3-2. Enhver anden brug er ikke tilladt. Enheden må ikke installeres eller opereres på lokaliteter med offentlig adgang (Se DIN EN 60335-2-40, paragraf 3.119) Enheden er udelukkende designet til stationært brug.

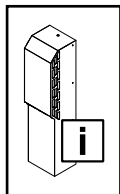
IE Níl an t-aonad fuairithe ceaptha ach amháin d'fhuarú na gcaibínéad rialaithe dúnta agus d'úsáid ghairmiúil eile i gcomhréir le DIN EN 61000-3-2. Ní cheadaítear d'aon úsáid eile. Ná suiteáilítear agus ná oibrítear an t-aonad i suíomhanna arb inrochtana don phobal i gcoitinne iad (féach DIN EN 60335-2-40, mír 3.119). Is le húsáid dho-aistrithe amháin a dearadh an t-aonad.

PT A unidade de refrigeração destina-se exclusivamente à refrigerar gabinetes de controle fechados, bem como para uso profissional de acordo com a DIN EN 61000-3-2. Qualquer outro uso não é apropriado e não é permitido. O aparelho não deve ser instalado e operado em locais acessíveis ao público em geral (consulte a norma DIN EN 60335-2-40, seção 3.119). O aparelho foi projetado apenas para o uso em instalação fixa.

HR Klima uređaj namijenjen je isključivo hladenu nanizanih ormara te profesionalnoj uporabi sukladno DIN EN 61000-3-2. Drugačija uporaba nije dozvoljena. Uređaj se ne smije instalirati i raditi na mjestima gdje je dostupan javnosti (DIN EN 60335-2-40, paragraph 3.119). Uređaj je namijenjen isključivo za unutarnju upotrebu.

MT It-tagħmir refriġeranti għandu jintuża esklussivament biex ikessah l-armarji magħluqin kif ukoll għall-użu professjonali skont DIN EN 61000-3-2. Użu ieħor ta' dan huwa ħażin. L-apparat ma għandux jiġi installat u ma għandux jithaddem f'postijiet li huma aċċessibbli għall-pubbliku (ara DIN EN 60335-2-40, Paragrafu 3.119). L-apparat huwa ddisinjat biss għal thaddim stazzjonarju.

PL To urządzenie chłodnicze jest przewidziane wyłącznie do chłodzenia zamkniętych szaf sterowniczych oraz do użytku profesjonalnego zgodnie z normą DIN EN 61000-3-2. Każde inne zastosowanie jest niezgodne z przeznaczeniem. Urządzenie nie może być instalowane



Warn- und Sicherheitshinweise / Safety instructions and warnings / Consignes de sécurité Rittal Blue e enclosure cooling units

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wane i użytkowane w miejscach ogólnodostępnych (patrz EN 60335-2-40, punkt 3.119). Urządzenie jest przystosowane wyłącznie do użytkowania stacjonarnego.

CZ Chladicí jednotka je určena výhradně k chlazení uzavřených rozváděčových skříní a k profesionálnímu použití v souladu s ČSN EN 61000-3-2. Jiné použití není použito v souladu s určením. Zařízení se nesmí instalovat a provozovat na místech, která jsou veřejně přístupná (viz DIN EN 60335-2-40, oddíl 3.119). Zařízení je navrženo jen pro stacionární provoz.

BG Охладителното устройство е предназначено само за охлаждане на кутии и шкафове както и за професионална употреба съгласно DIN EN 61000-3-2. Не се разрешава всякаква друга употреба. Уредът не трябва да се монтира и работи в местата, които са достъпни за широката общественост (виж DIN EN 60335-2-40, параграф 3.119). Уредът е предназначен единствено за стационарна употреба.

GR Η μονάδα ψύξης προορίζεται αποκλειστικά για ψύξη κλειστούς πίνακες ελέγχου καθώς και για επαγγελματική χρήση σύμφωνα με το DIN EN 61000-3-2. Οποιαδήποτε άλλη χρήση δεν επιτρέπεται. Δεν επιτρέπεται η εγκατάσταση και η λειτουργία της συσκευής σε σημεία, τα οποία είναι προορισμένα στο ευρύ κοινό (δείτε DIN EN 60335-2-40, σημείο 3.119). Η συσκευή έχει σχεδιαστεί αποκλειστικά για στατική χρήση.

RO Climatizorul este conceput doar pentru racirea dulapurilor inchise precum si pentru o utilizare industrială conform normelor DIN EN 61000-3-2. Orice alta utilizare nu este permisa. Unitatea nu trebuie instalata si folosita in locatii la care are acces publicul larg. (vezi DIN EN 60335-2-40, paragraf 3.119). Unitatea este proiectata doar pentru utilizare stationara.

HU A hűtőberendezés kizárólag zárt kapcsoló- és vezérlőszekrények hűtésére, valamint a DIN EN 61000-3-2 szabvánnyal összhangban történő professzionális alkalmazásra használható. Minden más alkalmazás tilos. A berendezést tilos olyan helyre telepíteni és üzemeltetni, amely szabadon hozzáférhető laikusok számára (lásd DIN EN 60335-2-40, 3.119 bekezdés). A berendezést kizárólag fixen telepítve és álló helyzetben szabad telepíteni és üzemeltetni.

LT Vėsinimo agregatas skirtas tik uždaro tipo skydų vėsinimui, taip pat profesionaliam naudojimui pagal DIN EN 61000-3-2. Bet koks kitas naudojimas yra draudžiamas. Agregatas negali būti sumontuojamas ir eksploatuojamas viešai prieinamose vietose (pagal DIN EN 60335-2-40, punktas 3.119). Prietaisas skirtas tik stacionariam naudojimui.

EE Jahutusseadmed on ettenähtud ainult kinniste kilpide jahutamiseks ja professionaalseks kasutamiseks vastavalt standardile DIN EN 61000-3-2. Muu laadne kasutus ei ole lubatud. Seadmete kasutus üldkasutatavates ruumides ei ole lubatud (vaata DIN EN 60335-2-40, § 3.119). Seade on ettenähtud ainult statsionaarseks paigalduseks.

LV Dzesēšanas bloks paredzēts tikai sadalīnu ar slēgto kontroli dzesēšanai, kā arī profesionālai lietošanai saskaņā ar DIN EN 61000-3-2. Jebkura cita izmantošana nav atļauta. Iekārtu nedrīkst uzstādīt un izmantot publiski pieejamās vietās (skatīt standarta DIN EN 60335-2-40, paragrāfu 3.119). Iekārta ir izstrādāta tikai stacionārai lietošanai.

SI Hladilna naprava je namenjena samo za hlajenje vrstno povezanih ohišij, kot tudi za profesionalno uporabo skladno z DIN EN 61000-3-2. Vsaka druga uporaba ni dovoljena. Naprava ne sme biti nameščena in delovati na lokaciji ki je dostopna širši javnosti (glej DIN EN 60335-2-40, odstavek 3.119). Naprava je namenjena izključno za stacionarno uporabo.

SK Chladiaca jednotka je určená pre chladenie uzavretých rozvádzačových skříní ako aj iných zariadení, ktoré sú v súlade s normou DIN EN 61000-3-2. Iné použitie nie je prípustné. Zariadenie nesmie byť inštalované a používané vo verejne dostupných priestoroch (viď DIN EN 60335-2-40, odstavce 3.119). Zariadenie je určené na stacionárnu prevádzku.

RU Агрегат предназначен исключительно для охлаждения закрытых распределительных шкафов, а также для профессионального использования согл. DIN EN 61000-3-2. Использование в других целях не соответствует его прямому назначению. Агрегат нельзя устанавливать и эксплуатировать в местах, доступных для посторонних лиц (см. DIN EN 60335-2-40, абзац 3.119). Агрегат предназначен только для стационарного применения.

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EN

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1 Notes on documentation

These assembly instructions are aimed at tradespersons who are familiar with assembly and installation of the cooling unit, and at trained specialists who are familiar with operation of the cooling unit.

1.1 CE labelling

Rittal GmbH & Co. KG confirms the conformity of the cooling unit with the European Union's Machinery Directive 2006/42/EC and EMC Directive 2014/30/EC. A corresponding declaration of conformity has been issued. This can be found at the end of this document, or on the Rittal homepage.



1.2 Storing the documents

The assembly and operating instructions as well as all other applicable documents are an integral part of the product. They must be issued to everyone who works with the unit and must always be available and on hand for operating and maintenance personnel.

1.3 Symbols used

Please observe the following safety instructions and other notes in this guide:

Symbol for an instructed action:

- The bullet point indicates that you should perform an action.

Safety and other instructions:



Danger!
Immediate danger to life and limb!



Caution!
Potential threat to the product and its environment.



Note:
Useful information and special features.

2 Safety notes

Please observe the following general safety instructions when assembling and operating the unit:

- Assembly, installation and servicing may only be performed by properly trained specialists.
- Screw the enclosure to the floor to prevent it from tipping over when the cooling unit is installed.
- Do not obstruct the air inlet and air outlet of the cooling unit inside and outside the enclosure (see also section 4.2.2 "Layout of the electronic components in the enclosure").

- To ensure problem-free opening and closing of the enclosure door, use a ride-up door roller (refer to the accessories in the Rittal Catalog). This raises the door slightly and balances out the weight of the cooling unit, to prevent buckling of the door and associated seal problems.
- The heat loss of the components installed in the enclosure must not exceed the specific useful cooling output of the cooling unit.
- Cooling units must be transported in an upright position and protected from tipping over.
- Shipping braces must be used when transporting a unit that has already been mounted (on the enclosure). A wooden structure made from square timbers or boards to support the cooling unit at the bottom is suitable for this purpose. The pallet should be big enough to prevent the enclosure and cooling unit overturning. If the cooling unit is mounted on a door, ensure the door is kept closed during transport.
- Use only original spare parts and accessories.
- Do not make any changes to the cooling unit other than those described in these instructions or associated instructions.
- Risk of burn injuries! On cooling units with automatic condensate evaporation, the surface of the thermal element will get very hot during operation, and will remain so for some time afterwards.
- The mains connector of the cooling unit must only be connected and disconnected with the system de-energized. Connect the protective device specified on the rating plate.

3 Device description

Depending on the model chosen, your cooling unit may vary in appearance from the illustrations contained in these instructions. However, the functions are identical in principle.

3 Device description

EN

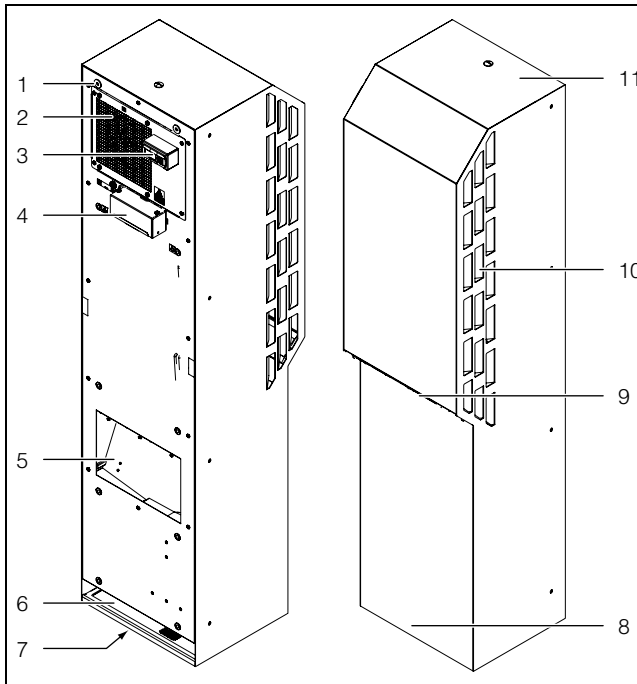


Fig. 1: Device description

Key

- 1 Blind rivet nut
- 2 Evaporator fan
- 3 Display
- 4 Electrical box
- 5 Evaporator air outlet
- 6 Metal air filter
- 7 Air inlet external circuit
- 8 Condensate discharge
- 9 Metal air filter
- 10 Louvred grille for condenser air
- 11 Housing

3.1 Functional description

Enclosure cooling units are designed to dissipate heat from enclosures by cooling the air inside the enclosure and so protect the temperature-sensitive components. They are built into the side or rear panel or into the door of the enclosure.

3.1.1 How it works

The cooling unit (compression refrigeration system) is comprised of four main components (fig. 2): the evaporator (1), the coolant compressor (2), the condenser (3), and the control or expansion valve (4), which are connected by suitable pipework. This circuit is filled with a readily boiling substance, the refrigerant. Coolant R134a (CH_2FCF_3) is chlorine-free. Its ozone destruction potential is 0, making it very ecofriendly. A filter dryer (5) which is integrated into the hermetically sealed cooling circuit provides effective protection against moisture, acid, dirt particles, and foreign bodies within the cooling circuit.

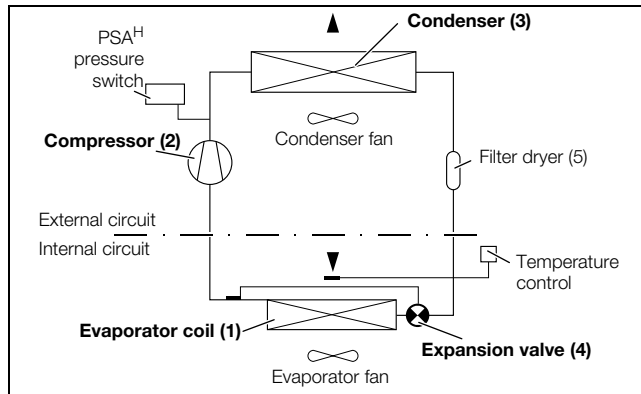


Fig. 2: Cooling circuit

In the evaporator coil (1), the liquid coolant is converted to a gaseous state. The energy needed for this purpose is taken from the enclosure air in the form of heat, which has the effect of cooling the enclosure air. In the compressor (2), the coolant is heavily compressed, so that it achieves a higher temperature inside the condenser (3) than the ambient air. This means that excess heat may be emitted to the ambient air via the surface of the condenser, as a result of which the temperature of the coolant drops and it is converted back into liquid. It is re-injected into the evaporator coil via a thermostatic expansion valve (4), which causes it to cool down further, and is then once again able to absorb the energy from the enclosure air in the evaporator coil. The whole cycle begins again.

3.1.2 Control

Rittal enclosure cooling units are fitted with a comfort controller for setting the functions of the cooling unit (display plus extended functions, see section 6 "Operation").

3.1.3 Bus mode

The serial unit interface X2 allows you to create a bus connection with up to ten cooling units using the master-slave cable (shielded, four-wire cable, Model No. SK 3124.100). This allows you to implement the following functions:

- Parallel unit control (the cooling units in the network can be switched on and off simultaneously)
- Parallel door status message ("door open")
- Parallel collective fault message

Data is exchanged via the master-slave connection.

During commissioning, assign an address to each unit that also includes the identifier "master" or "slave".

3.1.4 Safety equipment

- In the cooling cycle, the cooling unit has a tested pressure-operated switch to EN 12 263 which is set to maximum PS (admissible pressure); this operates via an automatic reset device whenever the pressure drops again.
- Temperature monitoring prevents the evaporator coil from icing over. If there is a risk of icing, the compres-

sor switches itself off and automatically switches itself back on again at higher temperatures.

- The refrigerant compressor and the fans are equipped with thermal winding shields to protect against excess current and excess temperatures.
- In order to allow a reduction of pressure inside the compressor and hence a safe restart, once it has been switched off (e.g. upon reaching the set temperature via the door limit switch function or via de-energizing), the device will switch back on with a delay of 180 seconds.
- The device has floating contacts on the connection pins (terminals 3 – 5), via which system messages from the device may be polled, e.g. using a PLC (2 x normally open contacts e-Comfort controller).

3.1.5 Condensation

At high levels of humidity and low temperatures inside the enclosure, condensation may form on the evaporator coil.

The cooling units (except SK 3303.xxx) have automatic, electric condensate evaporation. The thermal component used for this purpose is based on self-regulating PTC technology. Condensate arising on the evaporator coil is collected in a tank in the external circuit of the cooling unit, and partially evaporated via the airflow. When the water level rises, the water enters the PTC thermal component and is evaporated (through-flow heater principle). The water vapor streams out of the cooling unit with the airflow from the external fan. The PTC thermal component is permanently connected and has no switch point. It is protected against shortcircuits with miniature fuses (F1.1, F1.2). If the fuse has tripped, any condensation is drained off via the safety overflow.

3.1.6 Filter mats

The cooling unit condenser is finished all over with a dirt-repelling, easy-to-clean RiNano coating. In addition, the units are equipped with a metal filter. These UL listed, type NEMA 12/3R/4 models only accept Rittal's metal filters. See section 7.2 "Cleaning the filter mat" for additional information regarding filters. These filters may be cleaned with suitable detergents and reused.

3.1.7 Door limit switch

The cooling unit may be operated with a floating door limit switch connected. The door limit switch is not included with the supply (available as an accessory, Model No. PS 4127.010).

The door limit switch function causes the fans and the compressor in the cooling unit to be switched off after approximately 15 seconds when the enclosure door is opened (contacts 1 and 2 closed). This prevents the formation of condensation inside the enclosure while the enclosure door is open. In order to prevent damage to the unit, it is equipped with an ON delay: The evaporator fan cuts back in with a delay of approximately 15 seconds after the door has been closed, while the condens-

er fan and compressor switch on after approximately 3 minutes.



Note:

No external voltage must be applied to the door contacts (terminals 1 and 2).

3.1.8 Additional interface X3



Note:

The electrical signals at the interface are of an extra-low voltage (not extra-low safety voltages to EN 60 335).

The IoT Interface may be connected to the 9-pole SUB-D connector X3 in order to incorporate the cooling unit into higher-level monitoring systems (available as an accessory, IoT interface Model No. SK 3124.300).

3.2 Proper use, foreseeable misuse

The cooling unit is intended exclusively for cooling closed control cabinets as well as for professional use in accordance with DIN EN 61000-3-2. Any other use is not permitted.

- The unit must not be installed and operated in locations which are accessible to the general public (see DIN EN 60335-2-40, paragraph 3.119).
- The unit is designed solely for stationary use.

The cooling unit is state of the art and built according to recognised safety regulations. Nevertheless, improper use can pose a threat to the life and limb of the user or third parties, or result in possible damage to the system and other property.

Consequently, the cooling unit must only be used properly and in a technically sound condition! Any malfunctions which impair safety should be rectified immediately.

Proper use also includes the observance of the documentation provided, and compliance with the inspection and maintenance conditions.

Rittal GmbH & Co. KG is not liable for any damage which may result from failure to comply with the documentation provided. The same applies to failure to comply with the valid documentation for any accessories used.

Inappropriate use may be dangerous. Examples of inappropriate include:

- Use of the cooling unit over long periods with the enclosure open.
- Use of the cooling unit when it is standing on the ground.
- Use of impermissible tools.
- Improper operation.
- Improper rectification of malfunctions.

4 Assembly and connection

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- Use of accessories not approved by Rittal GmbH & Co. KG.

3.3 Scope of supply

Please check the delivery for completeness. Each unit is supplied with an accessory box which includes mounting hardware, literature, electrical boxes, foam tape and connectors.

4 Assembly and connection

4.1 Choosing the installation site

When choosing the installation site for the enclosure, please observe the following:

- The site for the enclosure, and hence the arrangement of the cooling unit, must be carefully selected so as to ensure good ventilation (distances between units, distances between the unit and the wall and the ground must be at least 7 7/8" (200 mm) in each case).
- The cooling unit must be installed and operated in a vertical position (maximum deviation: 2°).
- The internal and ambient temperature must be within the limits specified on the rating plate.
- The mains connection data as started on the rating plate of the unit must be guaranteed.
- The site must be free from excessive dirt and moisture.



Note:

These models are UL Type NEMA 12/3R/4 (outdoor) approved only as installed in the **external** mounting position. See section 4.3 "Fitting the cooling unit".

4.2 Assembly instructions

4.2.1 General

- Check the packaging carefully for signs of damage. Traces of oil on damaged packaging are an indication of refrigerant loss and leakages. Packaging damage may be the cause of a subsequent functional failure.
- The enclosure must be sealed on all sides (IP 56 or NEMA 12/3R/4). Increased condensation will occur if the enclosure is not airtight.
- In order to avoid excessive condensation inside the enclosure, we recommend installing a door limit switch (e.g. PS 4127.010) which deactivates the cooling unit when the enclosure door is opened (see section 3.1.7 "Door limit switch").

4.2.2 Layout of the electronic components in the enclosure



Caution! Risk of condensation!

When arranging the components inside the enclosure, please ensure that the cold airflow from the cooling unit is not directed at active components. Please also ensure that the cold airflow is not directed at the warm exhaust airflow from active components such as converters. This may lead to an air shortcircuit and therefore prevent adequate climate control, or may even cause the cooling unit's internal safety devices to cease cooling operation.

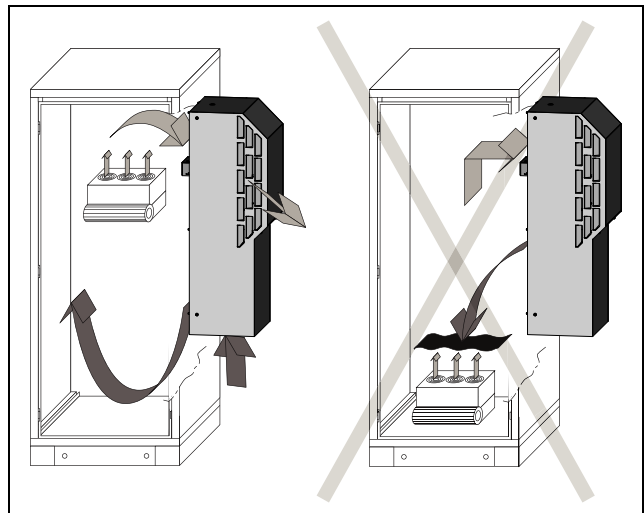


Fig. 3: Never direct the cold airflow at active components

Air diversion components are available as accessories – please refer to the Rittal catalogue. It is important to ensure even air circulation inside the enclosure. Under no circumstances should air inlet and outlet openings be obstructed, otherwise the cooling performance of the unit will be reduced. Ensure the distance "x" (see fig. 4) from electronic components and other installed enclosures so that the required air circulation is not obstructed and prevented.

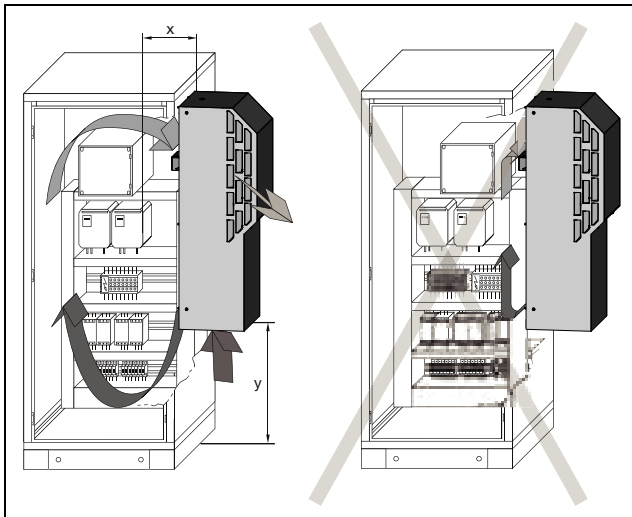


Fig. 4: Air circulation inside the enclosure

Model No.	Dimension x [mm]	Dimension y [mm]
3303.xxx	131	200
3304.xxx/3305.xxx	162	200
3329.xxx	184	200

Tab. 1: Dimension "x"

4.3 Fitting the cooling unit

The enclosure cooling unit may be externally mounted on the enclosure.

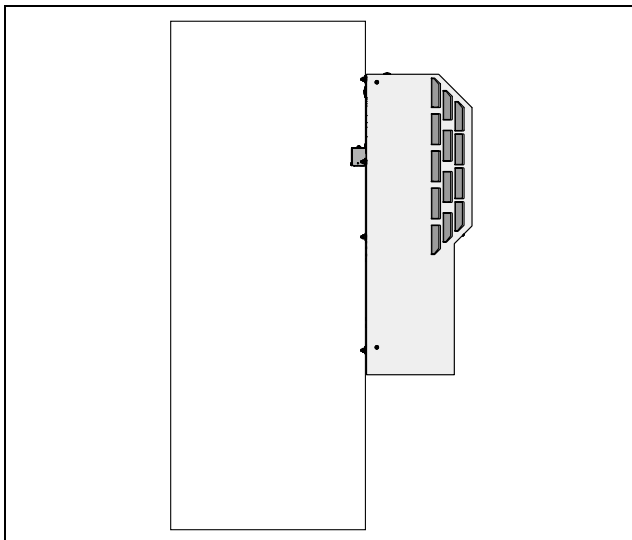


Fig. 5: Installation method

To this end, cut the side panel or door of the enclosure as per the drilling template included with the supply, and drill the relevant holes.

4.3.1 Cutting out on the enclosure

- Stick the supplied drilling template onto the side panel or door of the enclosure using adhesive tape.
- There are dimensioning lines on the drilling template for your cooling unit (see section 10 "Appendix: Cut-out

and hole sizes").



Risk of injury!

Carefully deburr all drilled holes and cut-outs to prevent injuries caused by sharp edges.

- Mark, drill and deburr the holes.
- Make the cut-outs including the line width as per the drilling template.
- Deburr the cut-outs.

4.3.2 External mounting of the cooling unit

- Cut the supplied sealing tape to the correct length and stick it carefully along the back of the unit so that no gaps are left at the joints. The sealing tape must be used for UL type NEMA 12/3R/4 installation. When applying tape, locate joints at bottom or sides – not at top.

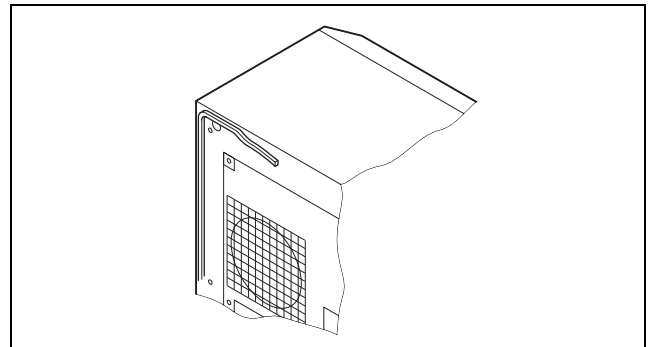


Fig. 6: Attach the sealing tape

- Screw the supplied threaded studs into the blind nuts on the rear of the unit.
- Secure the unit using the supplied washers and nuts.

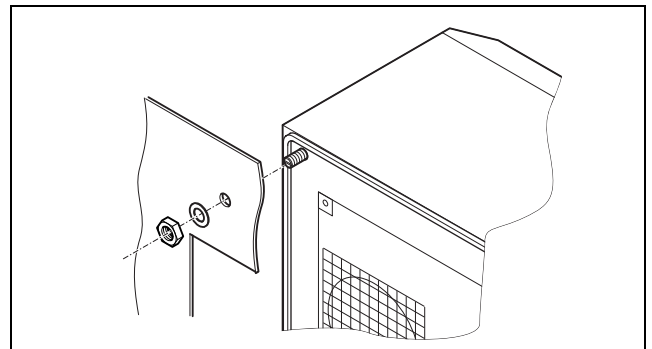


Fig. 7: Secure the cooling unit

4.4 Notes on electrical installation

When performing the electrical installation, it is important to observe all valid national and regional regulations as well as the provisions of the responsible power supply company. Electrical installation must only be carried out by a qualified electrician who is responsible for compliance with the existing standards and regulations.

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4.4.1 Connection data

- The connected voltage and frequency must correspond to the values stated on the rating plate.
- The cooling unit must be connected to the mains via an all-pin isolating device, which ensures at least 1/8" (3 mm) contact opening when switched off.
- No additional temperature control may be connected upstream of the unit at the supply end.
- Install a circuit breaker or time delay fuse as specified on the rating plate to protect the cable and equipment from short-circuits.

4.4.2 Electrical Box connection

- Loosen and remove the two screws and washers on top of the electrical box and remove the cover.
- Remove knockouts from the electrical box to allow for all required cables.
- After the unit is mounted, attach the electrical box to the rear of the unit. Use the two self threading screws and the washers from the dispatch box according to your model.

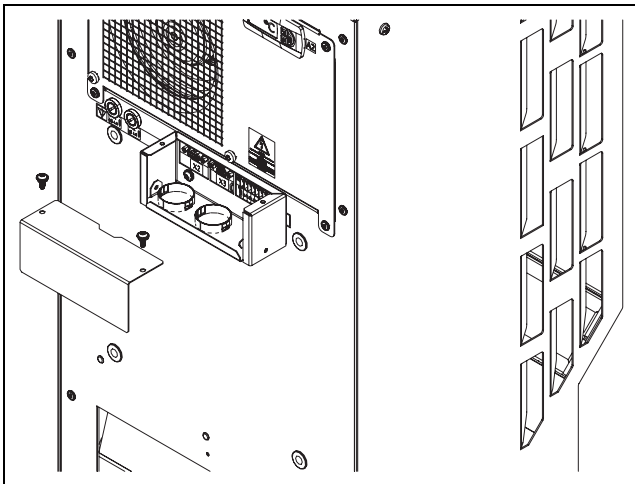


Fig. 8: Dismantling the cover of the electrical box

- Snap the plastic grommet(s) into the holes for the non-main power to protect the cables from the edges of the holes.
- Install 1/2" conduit and conduit connector (not included) as required for the installation.
- Route the main power cable through conduit and into box leaving a minimum of 6" (152 mm) for lead wire.
- Connect the cable to the X1 connector and attach to unit.

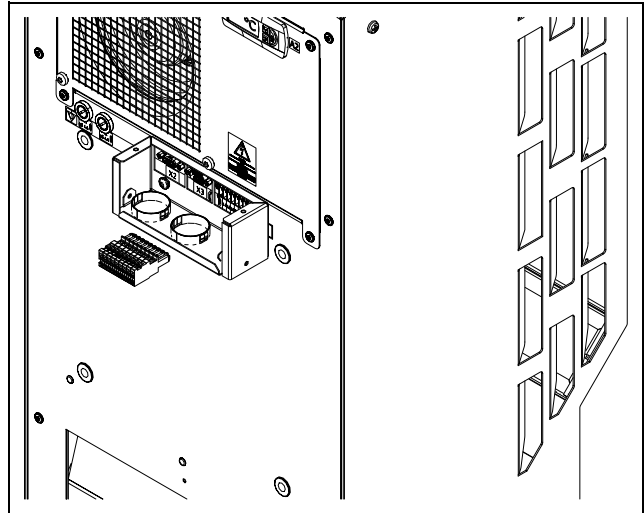


Fig. 9: Attaching the connector to the electrical box

- Attach the cover on the electrical box using the two previously removed screws and washers.

4.4.3 Overvoltage protection and supply line load

- The unit does not have its own overvoltage protection. Measures must be taken by the operator at the supply end to ensure effective lightning and overvoltage protection. The mains voltage must not exceed a tolerance of $\pm 10\%$.
- In accordance with IEC 61 000-3-11, the unit is intended solely for use at sites with a continuous current-carrying capacity (incoming mains power supply) of more than 100 A per phase and with a supply voltage of 400/230/115 V. If necessary, the power supply company must be consulted to ensure that the continuous current-carrying capacity at the point of connection to the public grid is sufficient for connection of such a unit.
- The fans and compressors in single- and three-phase units are intrinsically safe (thermal winding protection). The same also applies to the transformer versions of types SK 3304.5x8, SK 3305.5x8 and SK 3329.5x8 and to special- voltage units which are likewise equipped with a transformer.
- Install the time delay fuse specified on the rating plate to protect the cable and equipment from short-circuits. Select a suitable circuit-breaker in accordance with the information specified on the rating plate: Set it to the minimum specified value. This will achieve the best short-circuit protection for cables and equipment.

Example: Specified setting range 6.3 – 10 A; set to 6.3 A.

4.4.4 Door limit switch

- Each door limit switch must only be assigned to one cooling unit.
- Several door limit switches may be connected in parallel and operated on one cooling unit.
- The minimum cross-section for the connection cable is 22 AWG for a cable length of 6.5' (2 m).

- The line resistance to the door limit switch must not exceed a maximum of 50 Ω .
- The door limit switch only supports a floating connection; no external voltages.
- The contact of the door limit switch must be closed when the door is open.

The safety extra-low voltage for the door limit switch is provided by the internal power pack: Current approx. 30 mA DC.

- Connect the door limit switch to terminals 1 and 2 of the connector.

4.4.5 Notes on the flicker standard

The flicker limits specified in standard EN 61 000-3-3 or -3-11 are adhered to, provided the supply impedance is less than approx. 1.5 Ω .

Where necessary, the unit operator should measure the connected impedance or consult the responsible power supply company. If there is no way of influencing the supply impedance and sensitive installed components (e.g. BUS) are subjected to interference, a line reactor or starting-current limiting device should be connected upstream of the cooling unit to restrict the startup current of the cooling unit.

4.4.6 Potential equalization

If, for EMC reasons, the unit is to be integrated into the existing potential equalization system at the customer, a conductor with a larger nominal crosssection can be connected to the potential equalization connection point (attachment points) on wallmounted cooling units.

According to the standard, the PE conductor in the mains connection cable is not classified as an equipotential bonding conductor.

4.5 Carrying out the electrical installation

4.5.1 Bus connection (only in conjunction with several units with an e-Comfort controller)

When using several cooling units, the serial device interface X2 can be used to connect up to ten cooling units with the bus cable (Model No. SK 3124.100).



Note:

The electrical signals at the X2 interface are of an extra-low voltage (not extra-low safety voltages to EN 60 335-1).

When interconnecting, please note the following:

- De-energize the cooling units to be connected.
- Ensure proper electrical insulation.
- Make sure the cables are not laid in parallel to power lines.
- Make sure that the lines are short.



Caution!

Regarding the last slave unit in the group, do not, under any circumstances, connect the remaining socket of the Y cable SK 3124.100 into interface X3 of the cooling unit!

4.5.2 Connection X3 for serial interface

The Blue e adaptor for IOT Interface (Model No. SK 3124.310) may be connected to X3. This is used to evaluate system messages in a PLC, for remotely setting parameters and monitoring, or for integration into the facility management system.

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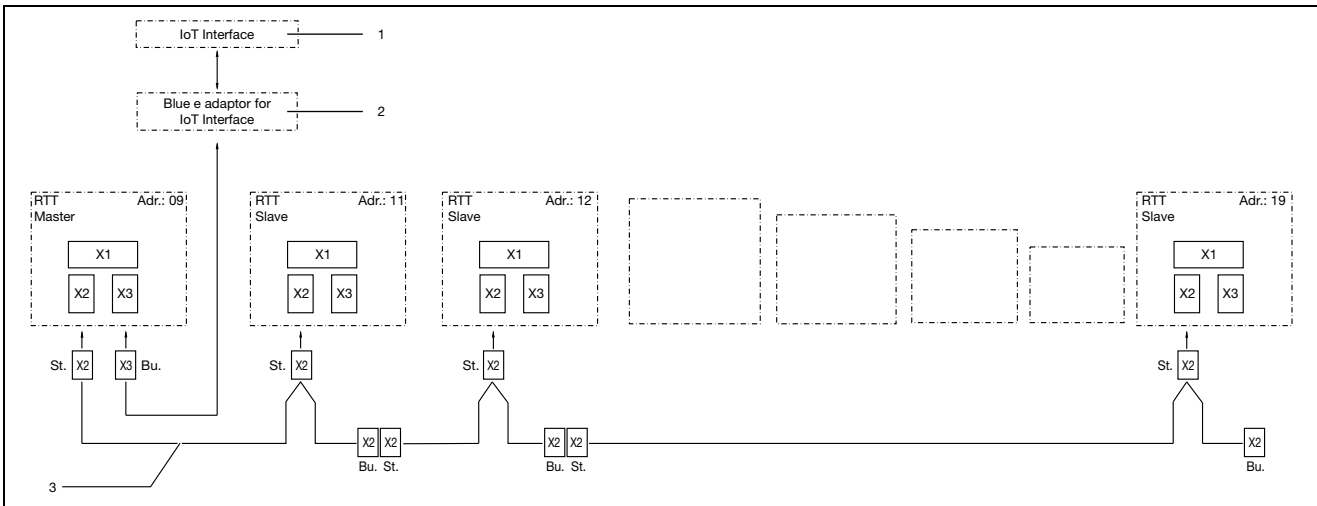


Fig. 10: Connection example: Master-slave operation

Legend

- | | | | |
|-----|--|------|---------------------------------------|
| 1 | IoT Interface (Model No. 3124.300) | X2 | Master/slave connection Sub-D, 9-pole |
| 2 | Blue e adaptor for IoT Interface (Model No. SK 3124.310) | X3 | Serial interface Sub-D, 9-pole |
| 3 | Master-slave bus cable (Model No. 3124.100) | St. | Sub-D connector, 9-pole |
| RTT | Rittal TopTherm cooling units | Bu. | Sub-D jack, 9-pole |
| X1 | Supply connection/door limit switch/alarms | Adr. | Address |

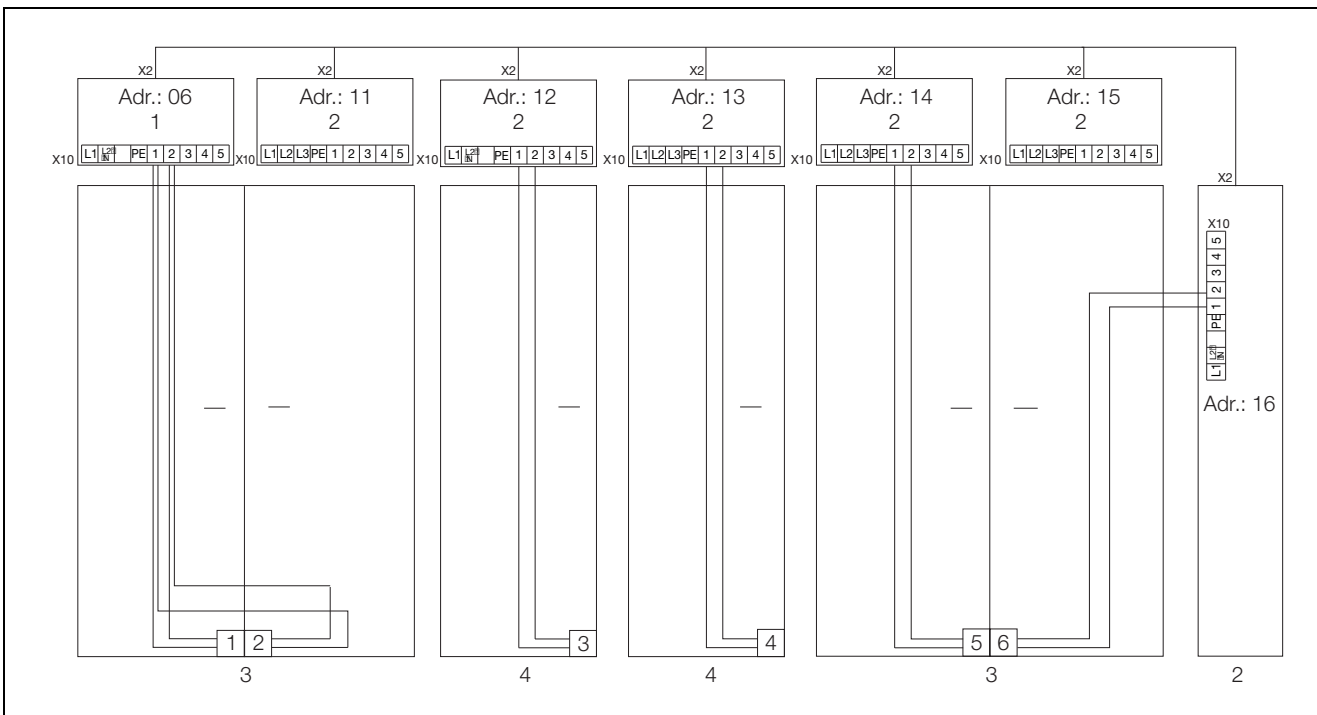


Fig. 11: Connection example: Door limit switch and master-slave operation

Legend

- | | | | |
|---|---------------------|---|---|
| 1 | Master cooling unit | 3 | 2-door enclosure with two door limit switches |
| 2 | Slave cooling units | 4 | Enclosure with door limit switch |

4.5.3 Installing the power supply

- Complete the electrical installation by following the wiring plan on the rear of the cooling unit (see fig. 1 on page 10).
- If you would like the system messages from the cooling unit to be evaluated via the system message relay, you should also connect a suitable low-voltage cable to connection clamps 3 – 5.

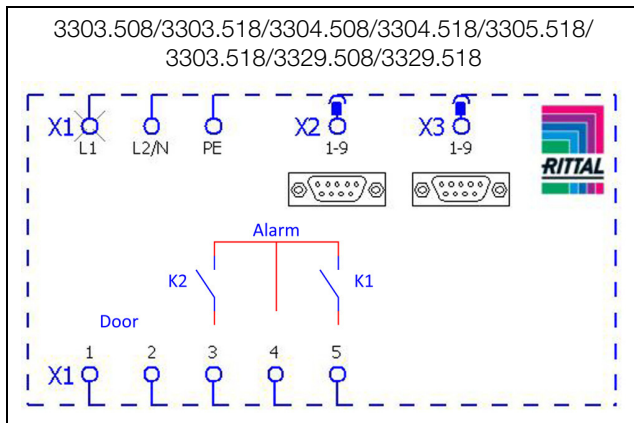


Fig. 12: Electrical wiring plan no. 1

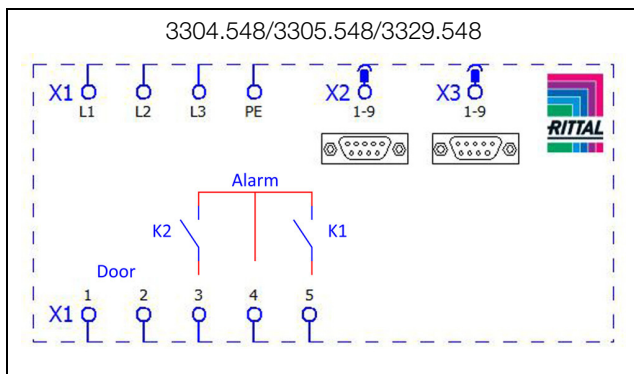


Fig. 13: Electrical wiring plan no. 2

Legend

- X1 Main terminal strip
- X2 Master/slave connection
- X3 Optional interface
- K1 Relay collective fault 1
- K2 Relay collective fault 2
- Door Door limit switch (without door limit switch: terminal 1, 2 open)



Note:
For technical data refer to the rating plate.

AC $\cos \phi = 1$	DC L/R = 20 ms
I max. = 2 A U max. = 250 V	I min. = 100 mA U max. = 200 V U min. = 18 V I max. = 2 A

Tab. 2: Contact data

5 Commissioning



Caution! Risk of damage!

The oil must collect in the compressor in order to ensure effective lubrication and cooling. Do not operate the cooling unit for at least 30 min. after assembling the equipment.

■ Once all the assembly and installation work is complete, switch on the power supply to the cooling unit. The cooling unit starts running:

- The software version of the controller first appears for approx. 2 sec. Then the enclosure internal temperature appears in the 7-segment display.

You can now make your individual settings on the unit, e.g. set the temperature or assign the network identifier, etc. (refer to section 6 "Operation").

6 Operation

You can operate the cooling unit using the controller on the rear of the device (fig. 1, item 3, page 10)

6.1 Control using the e-Comfort controller

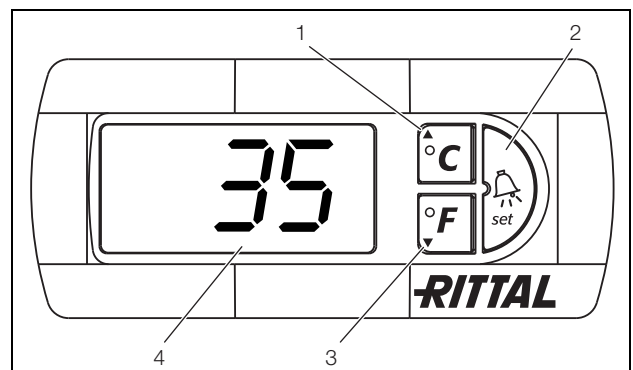


Fig. 14: e-Comfort controller

Key

- 1 Programming button, also display of the set temperature unit (degrees Celsius)
- 2 Set button
- 3 Programming button, also display of the set temperature unit (degrees Fahrenheit)
- 4 7-segment display

6.1.1 Properties

- Rated operating voltage:
 - 115 V or
 - 230 V or
 - 400/460 V, 3-phase, supports multiple voltages without rewiring
- Integral start-up delay and door limit switch function
- Monitoring of all motors (compressor, condenser fan, evaporator fan)
- Phase monitoring for three-phase units
- Master-slave function with a maximum of ten units. One device functions as a master unit. Once the set temperature is reached by one of the connected slave devices or in the event of the door limit switch function, the affected slave unit will report to the master unit that switches all the other cooling units on or off as required.
- Switching hysteresis: adjustable from 2 – 10 K, preset to 5 K, where 5 K is the hysteresis value.

- Visualisation of the current internal enclosure temperature and all error messages in the 7-segment display
- Using the IoT Interface (Model No. 3124.300), the unit may be incorporated into higher-level remote monitoring systems.

The cooling unit operates automatically, i.e. after switching on the power supply, the evaporator fan (see fig. 2) will run and circulate the internal enclosure air. The compressor and condenser fan are regulated by the e-Comfort controller. The e-Comfort controller has a 7-segment display (fig. 14, item 4). After switching on the power supply, the current software version initially appears on this display for approx. 2 seconds, followed by a preset option (e.g. t10) or the temperature.

In regular operation, the display shows both the temperature (in degrees Celsius or Fahrenheit – users may switch between the two) and any error messages.

The current internal enclosure temperature is usually displayed permanently. In the event of an error message, this alternates with the temperature display.

The unit is programmed using buttons 1 – 3 (fig. 14). The relevant parameters also appear in the display.

6.1.2 Eco mode

All Rittal TopTherm cooling units with e-Comfort controller from firmware 3.2 have the energy-saving eco mode, which is disabled in the delivered state of UL Type 12/3R/4 cooling units. The evaporator fan runs continuously.

If required, eco mode can be enabled on the control display. For this purpose switch the parameter from 0 to 1 in the programming level (see tab. 3).

The eco mode is used to save energy in the heat exchanger if there is no thermal load, or there is a low thermal load in the enclosure (e. g. standby operation, no production or weekend). During this process the evaporator fan in the internal circuit is switched off as appropriate if the actual internal enclosure temperature drops to 10 K below the specified setpoint temperature. To ensure the internal temperature is reliably measured during this process, the fan starts cyclically for 30 sec. (see fig. 15). If the internal temperature drops to a range 5 K below the setpoint set again, the fan switches back to continuous operation.

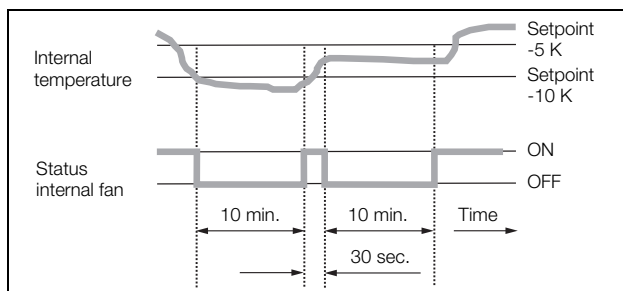


Fig. 15: Eco mode

6.1.3 Launching test mode

The e-Comfort controller is equipped with a test function whereby the cooling unit commences cooling operation

independently of the set temperature or door limit switch function.

- Simultaneously press buttons 1 and 2 (fig. 14) for at least 5 sec.

The cooling unit will commence operation. Test mode is completed after approximately 5 minutes. The unit switches off and changes to normal operation.

6.1.4 General information about programming

Using buttons 1, 2 and 3 (fig. 14) you can change 24 parameters within the preset ranges (min. value, max. value).

Tables 3 and 4 show the parameters which can be altered. Fig. 16 on page 21 shows which buttons must be pressed.



Note on switching hysteresis:

With a low hysteresis and short switching cycles, there is a risk that cooling may not be adequate or that only partial sections of the enclosure are cooled. If the cooling unit is oversized and compressor running times are < 1 minute, the switching hysteresis is automatically increased to protect the cooling unit (see message "LH" in section 6.1.9 "Evaluating system messages").

Note on temperature settings:

With the e-Comfort controller, the temperature is preset at the factory to 95 °F (+35 °C). In order to save energy, and due to the risk of increased condensation, do not set the temperature lower than that actually necessary.

Note on useful cooling power:

Interactive performance diagrams for calculating the useful cooling power may be found at www.rittal.com.

In principle, the programming is identical for all editable parameters.

To enter programming mode:

- Press button 2 ("Set") for approx. 5 seconds.

The controller is now in programming mode. While in programming mode, if you do not press any buttons for approx. 30 seconds, the display will first flash, then the controller will switch back to normal display mode. "Esc" in the display indicates that any changes made have not been saved.

- Press the programming buttons ▲ (°C) or ▼ (°F) to switch between the editable parameters (see tables 3 and 4).

- Press button 2 ("Set") to select the displayed parameter for editing.

The current value of this parameter is displayed.

- Press one of the programming buttons ▲ (°C) or ▼ (°F).

"Cod" will appear in the display. In order to be able to change a value, you must enter the authorisation code "22".

- Keep the ▲ programming button (°C) held down until "22" appears.

- Press button 2 ("Set") to confirm the code.

You can now alter the parameter within the preset limits.

- Press one of the programming buttons ▲ (°C) or ▼ (°F) until the required value appears.

- Press button 2 ("Set") to confirm the change.

You can now alter other parameters in the same way.

There is no need to re-enter the authorisation code "22".

- To exit programming mode, press button 2 ("Set") again for approximately 5 seconds.

"Acc" will appear in the display to indicate that the changes have been saved. The display then switches back to regular operation (internal enclosure temperature).

You can also program the e-Comfort controller using a diagnosis software package (Model No. 3159.100), which is supplied with a connection cable to the PC. The cable connector on the rear of the e-Comfort controller display serves as an interface.

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6.1.5 Editable parameters

See also fig. 16 on page 21.

Progr. level	Display screen	Parameter	Min. value	Max. value	Factory setting	Description
1	St	Internal enclosure temperature set-point T_i	68 °F	131 °F	95 °F	The internal enclosure temperature setting is preset at the factory to 95 °F (35 °C) and may be altered within a range of 68 – 131 °F (20 – 55 °C).
2	Fi	Filter mat monitoring	10	60	99 (= off)	To enable filter mat monitoring, the display should be set to a minimum of 10 K above the temperature difference shown in programming mode "Fi"; filter mat monitoring is disabled at the factory (99 = off). Not applicable for NEMA 3R, 4 units!
3	Ad	Master-slave identifier	0	19	0	See section 6.1.8 "Setting the master/slave identifier"
4	CF	Switch between °C/°F	0	1	0	The temperature display can be switched between °C (0) and °F (1). The LED displays the current unit of temperature.
5	H1	Setting for switching difference (hysteresis)	2	10	5	The cooling unit is preset in the factory to a switching hysteresis of 5 K. This parameter should only be changed in consultation with us. Please contact us for advice.
6	H2	Differential for error message A2	3	15	5	If the internal enclosure temperature exceeds the set value by more than 5 K, then error message A2 (internal enclosure temperature too high) appears on the display terminal. If necessary, the differential may be altered here within the range of 3 – 15 K.
26	ECO	Eco-mode operation	0	1	0	Eco mode OFF: 0 / Eco mode ON: 1
27	PSO	Changing the authorisation code	0	15	0	This parameter allows you to change the "22" authorisation code (factory setting). The new code results from the sum of 22 + PSO.

Tab. 3: Editable parameters

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6.1.7 Defining system messages for evaluation

System messages are shown on the display screen of the e-Comfort controller via the displays A1 to A20 and E0.

A more detailed explanation of the system messages may be found in section 6.1.9 "Evaluating system messages".

See also fig. 16 on page 21.

Progr. level	Display screen	Min. value	Max. value	Factory setting	Type or location of fault
7	A1	0	2	0	Enclosure door open
8	A2	0	2	0	Internal temperature of enclosure too high
9	A3	0	2	0	Filter monitoring (Not applicable for NEMA 3R,4 units!)
10	A4	0	2	0	Ambient temperature too high/low
11	A5	0	2	0	Icing hazard (Message disabled if ambient temperature <10 °C)
12	A6	0	2	1	PSA ^H pressure switch
13	A7	0	2	2	Evaporator coil
14	A8	0	2	1	Condensate warning
15	A9	0	2	1	Condenser fan blocked or defective
16	A10	0	2	1	Evaporator fan blocked or defective
17	A11	0	2	2	Compressor
18	A12	0	2	1	Condenser
19	A13	0	2	1	Ambient temperature sensor
20	A14	0	2	1	Icing temperature sensor
21	A15	0	2	1	Condensate warning temperature sensor
22	A16	0	2	1	Internal temperature sensor
23	A17	0	2	1	Phase monitoring
24	A18	0	2	0	EPROM
25	A19	0	2	0	LAN/Master-Slave

Tab. 4: System messages that can be evaluated via relays

The system messages A1 – A19 may also be evaluated via two floating system message relays. In this way, one of the two system message relays may be allocated to each system message.

System message relays with normally open contact, see wiring diagrams in section 4.5.3 "Installing the power supply":

- Terminal 3: NO (normally open, relay 2)
- Terminal 4: C (connection of the supply voltage to the system message relay)
- Terminal 5: NO (normally open, relay 1)

The definition NO refers to the de-energised state. As soon as power is applied to the cooling unit, both system message relays (relay 1 and 2) energise.

This is the normal operating state of the cooling unit. As soon as a system message occurs or the power supply

is interrupted, the corresponding relay will drop out and open the contact.

Program system messages with the value

- 0: System message is not sent to the system message relay, but merely appears in the display
- 1: System message is evaluated by relay 1
- 2: System message is evaluated by relay 2

6.1.8 Setting the master/slave identifier

When several cooling units are connected together (maximum ten), one of the cooling units must be defined as the "master" and the others as "slaves". For this purpose, assign a corresponding identifier (address) to each cooling unit which will enable the cooling unit to be identified in the network.

If one of the slave units reaches the set temperature or if the door limit switch function is activated, the affected

slave unit will report to the master unit, which then deactivates all the other cooling units.



Notes:

- Only one unit may be configured as master, and its identifier must match the number of connected slave units.
- The slave units must have different identifiers.
- The identifiers must be numbered in ascending order without any gaps.

On the **master cooling unit** (00 = factory setting), set the number of slave units present in the network:

- 01: Master with 1 slave cooling unit
- 02: Master with 2 slave cooling units
- 03: Master with 3 slave cooling units
- 04: Master with 4 slave cooling units
- 05: Master with 5 slave cooling units
- 06: Master with 6 slave cooling units
- 07: Master with 7 slave cooling units
- 08: Master with 8 slave cooling units
- 09: Master with 9 slave cooling units

On the **slave cooling unit** (00 = factory setting), set its own address:

- 11: Slave cooling unit no. 1

- 12: Slave cooling unit no. 2
- 13: Slave cooling unit no. 3
- 14: Slave cooling unit no. 4
- 15: Slave cooling unit no. 5
- 16: Slave cooling unit no. 6
- 17: Slave cooling unit no. 7
- 18: Slave cooling unit no. 8
- 19: Slave cooling unit no. 9

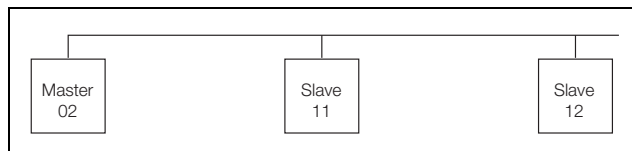


Fig. 17: Master/slave connection (example)

For further connection examples, see section 4.5.1 "Bus connection (only in conjunction with several units with an e-Comfort controller)".

For details of how to set the identifier, see section 6.1.5 "Editable parameters" or section 6.1.6 "Programming overview", parameter "Ad".

6.1.9 Evaluating system messages

In the e-Comfort controller, system messages are indicated by a number in the display.

Following the appearance of messages A03, A06 and A07 and after rectifying their cause, you will need to re-set the e-Comfort controller (see section 6.1.10 "Reset the e-Comfort controller").

Display screen	System message	Possible cause	Measures to rectify the fault
A01	Enclosure door open	Door open or door limit switch incorrectly positioned	Close door, position door limit switch correctly, check connection if necessary
A02	Internal temperature of enclosure too high	Cooling capacity inadequate/unit undersized Error as a consequence of messages A03 to A17.	Check cooling capacity
A03	Filter monitoring	Filter mat soiled	Clean or replace; reset the e-Comfort controller (Not applicable for NEMA 3R,4 units!)
A04	Ambient temperature too high/low	Ambient temperature outside permissible operating range -4 °F to 122 °F	Raise or lower the ambient temperature (e.g. heat or ventilate the room)
A05	Icing hazard	Operational display in case of icing hazard. Evaporator coil fan may be mechanically blocked, defective, or cold air outlet obstructed.	Set the enclosure interior temperature to a higher value. Check the evaporator fan; release or exchange if necessary.

Tab. 5: Troubleshooting with the e-Comfort controller

6 Operation

EN

Display screen	System message	Possible cause	Measures to rectify the fault
A06	PSA ^H pressure switch	Ambient temperature too high	Lower the ambient temperature; reset the e-Comfort controller
		Condenser soiled	Clean the condenser; reset the e-Comfort controller
		Filter mat soiled	Clean or replace; reset the e-Comfort controller
		Condenser fan defective	Replace; reset the e-Comfort controller
		E-valve defective	Repair by refrigeration engineer; reset the e-Comfort controller
		PSA ^H pressure switch defective	Refrigeration engineer to exchange reset the e-Comfort controller
A07	Evaporator coil	Lack of refrigerant; sensor in front of or behind condenser defective	Repair by refrigeration engineer; reset the e-Comfort controller
A08	Condensate warning	Condensate discharge kinked or blocked	Check condensate drainage; correct any kinks or blockages in the hose
		Only for units with optional condensate evaporation	Check the evaporation unit, replace if necessary
A09	Condenser fan	Blocked or defective	Clear the blockage; replace if necessary
A10	Evaporator fan	Blocked or defective	Clear the blockage; replace if necessary
A11	Compressor	Compressor overloaded (internal winding protection)	No action required; Unit switches on again independently
		Defective (check by measuring the winding resistance)	Replace by a refrigeration engineer
A12	Condenser temperature sensor	Open or short-circuit	Replace
A13	Ambient temperature sensor	Open or short-circuit	Replace
A14	Icing temperature sensor	Open or short-circuit	Replace
A15	Condensate warning temperature sensor	Open or short-circuit	Replace
A16	Internal temperature sensor	Open or short-circuit	Replace
A17	Phase monitoring	For three-phase devices only: Incorrect rotary field/phase absent	Swap two phases
A18	EPROM error	New board installed incorrectly	Software update needed (only following board installation with more recent software): Enter the programming level with Code 22; press button 1 and confirm with "Set" until "Acc" appears. Next, disconnect the unit from the mains and reconnect.
A19	LAN/Master-Slave	Master and slave not connected	Check setting and/or cable

Tab. 5: Troubleshooting with the e-Comfort controller

Display screen	System message	Possible cause	Measures to rectify the fault
A20	Voltage drop	Error display not shown	Event is stored in the log file
E0	Display message	Connection problem between the display and the controller board	Reset: Switch power supply off, then switch on again after approx. 2 sec.
		Cable defective; connection loose	Replace the boards
OL	Overload	Ambient parameters or heat loss outside the applicable limits	
LH	Low Heat	Minimal heat loss in enclosure.	
b07	Leak in the cooling circuit	Sensor B3 and B4 swapped over	Swap the sensors
rSt	Reset	Manual device reset required, see section 6.1.10 "Reset the e-Comfort controller".	

Tab. 5: Troubleshooting with the e-Comfort controller

6.1.10 Reset the e-Comfort controller

After the occurrence of faults A03, A06 and A07, you will need to reset the e-Comfort controller.

- Press buttons 1 (▲) and 3 (▼) (fig. 14) simultaneously for 5 seconds.

The system messages disappear and the temperature display is shown.

7 Inspection and maintenance



Risk of electric shock!

The unit is live.

Switch off the power supply before opening, and take suitable precautions against it being accidentally switched back on.

7.1 General

The cooling circuit is designed in the form of a maintenance-free, hermetically sealed system. The cooling unit is filled with the required quantity of refrigerant at the factory, checked for leaks, and subjected to a functional test run.

The installed maintenance-free fans are mounted on ball bearings, protected against moisture and dust, and fitted with a temperature monitor. The life expectancy is at least 30,000 operating hours. The cooling unit is thus largely maintenance-free. All that may be required from time to time is to clean the components of the external air circuit using a vacuum cleaner or compressed air if they become visibly dirty. Any stubborn, oily stains may be removed using a nonflammable detergent, such as degreaser.

Maintenance interval: 2000 operating hours. Depending on the level of contamination in the ambient air, the maintenance interval may be reduced to suit the air pollution intensity.



Caution!

Risk of fire!

Never use flammable liquids for cleaning.

Sequence of maintenance measures:

- Check the level of dirt.
- Filter soiling? Replace the filter if necessary.
- Cooling fins dirty? Clean if necessary.
- Activate test mode; cooling function OK?
- Check noise generation of compressor and fans.

7.2 Cleaning the filter mat

The two metal filter mats in the cooling unit may be washed with water or grease-dissolving detergents.

- Loosen and remove the two screws with which the upper filter is fastened to the housing.

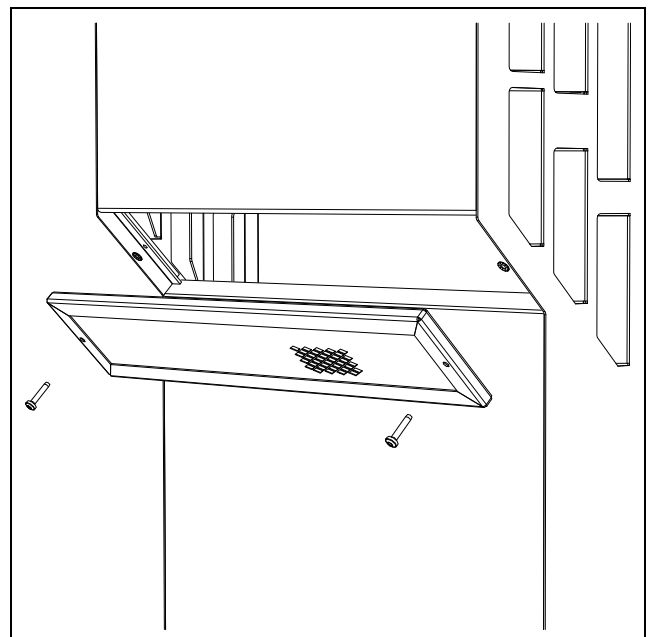


Fig. 18: Dismantle the upper filter

7 Inspection and maintenance

EN

- Then remove the upper filter from the housing.
- Loosen and remove the four screws with which the lower filter is fastened to the housing.

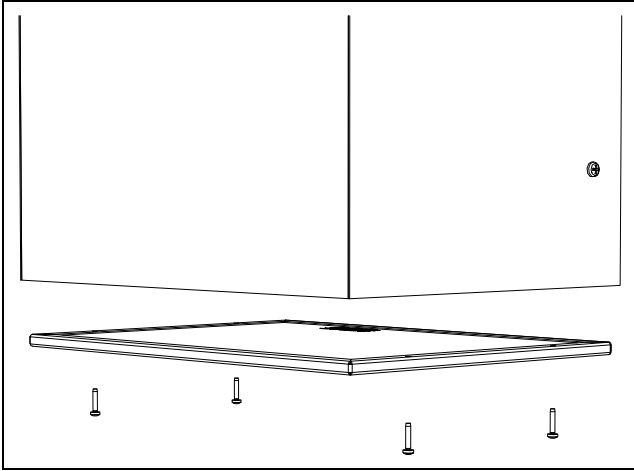


Fig. 19: Dismantle the lower filter

- Then remove the lower filter from the housing.
- Clean both filters, then reinsert them in the housing and fasten them with the appropriate screws.

7.3 Compressed air cleaning

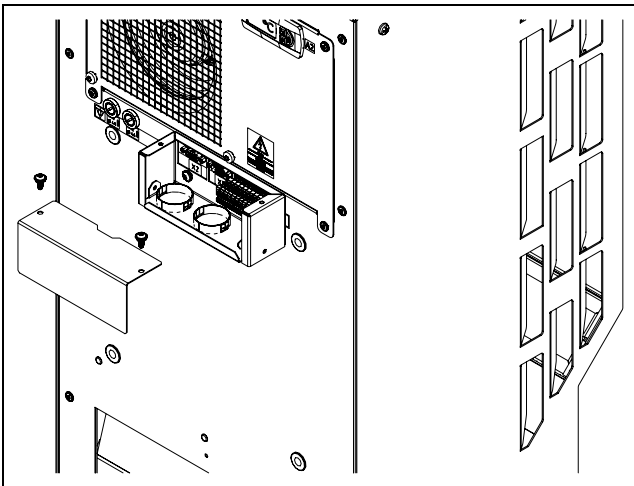


Fig. 20: Dismantle the cover of the electrical box

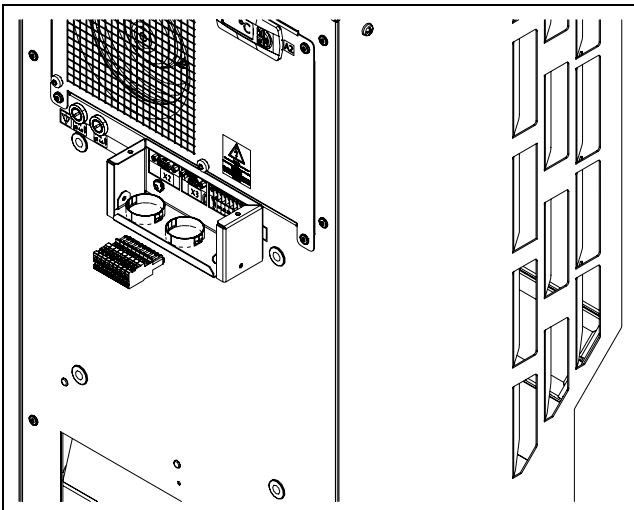


Fig. 21: Disconnect the power cord

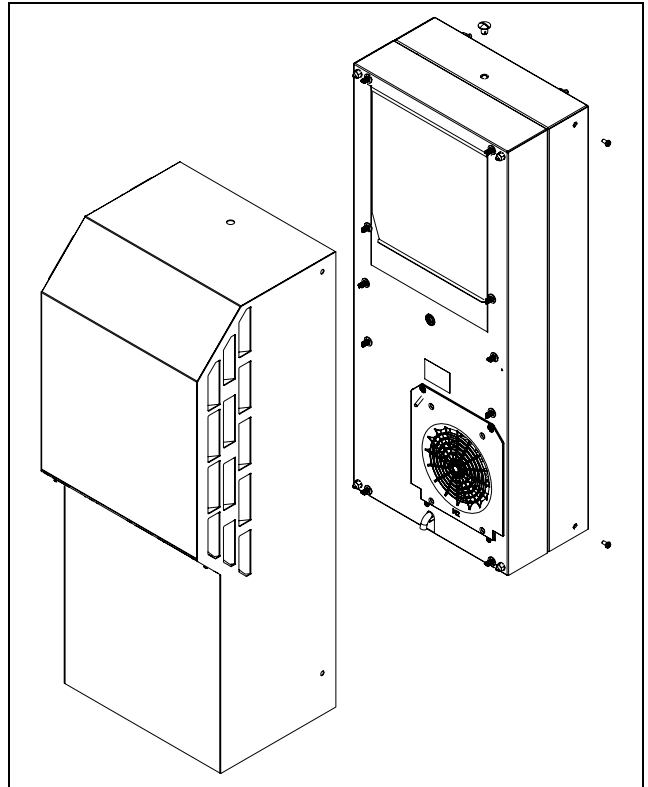


Fig. 22: Remove the hood

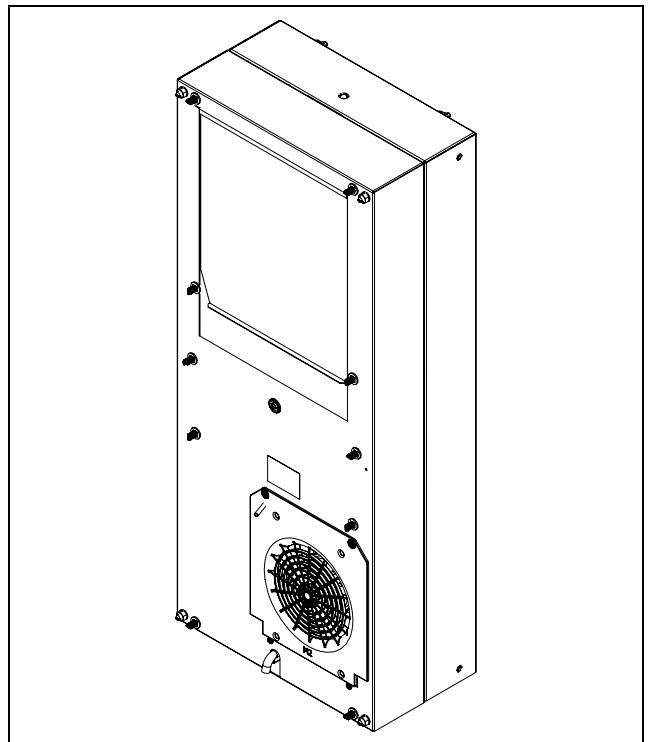


Fig. 23: Cooling unit without hood

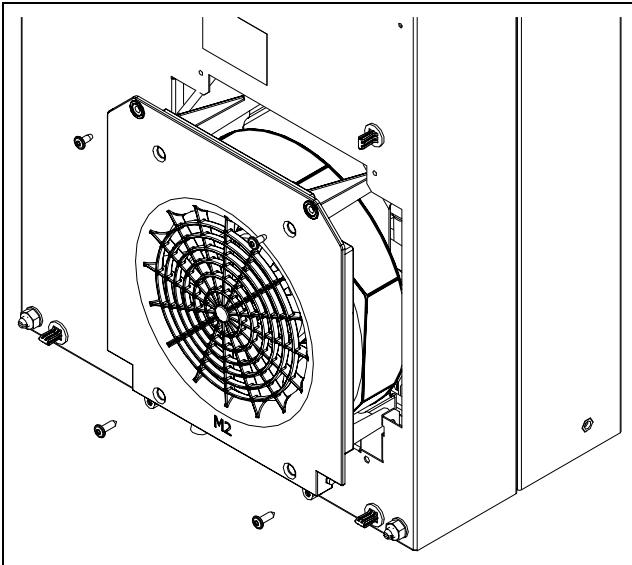


Fig. 24: Remove the external circuit fan (loosen the four screws)

■ Disconnect the fan connector.

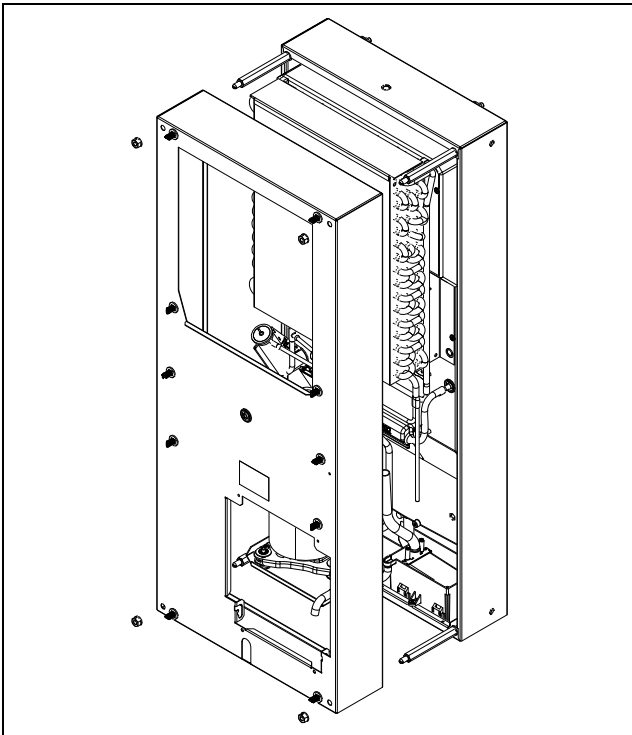


Fig. 25: Loose 4 nuts and remove cover



Fig. 26: Disconnect the ground cable between the cover and chassis



Fig. 27: Cut heat shrink tubing around circumference of connector

8 Storage and disposal

EN

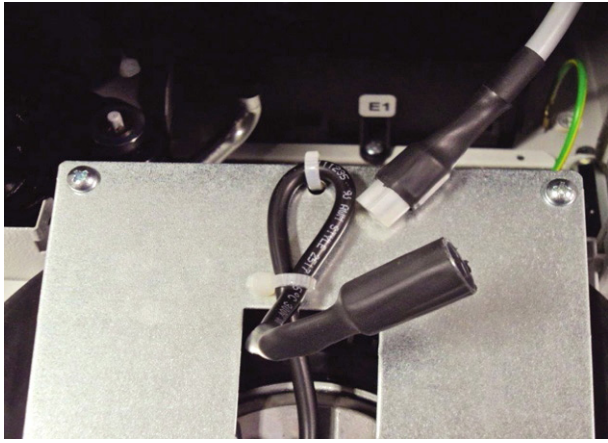


Fig. 28: Disconnect the fan connector

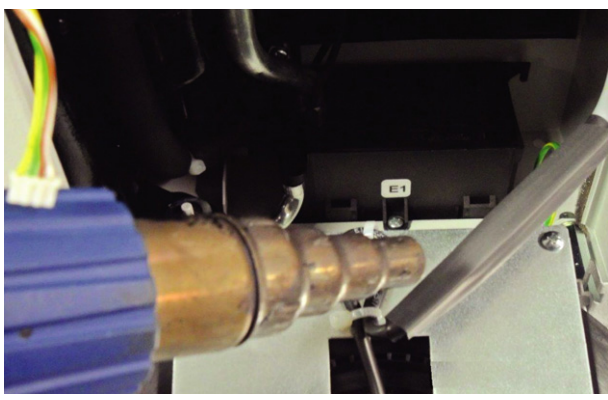


Fig. 29: Cut heat shrink tubing around circumference of connector



Fig. 30: Clean out the heat exchanger coil and compressor chamber using compressed air



Fig. 31: Clean out the heat exchanger coil and compressor chamber using compressed air

8 Storage and disposal



Caution!

Risk of damage!

The cooling unit must not be subjected to temperatures above 158 °F (70 °C) during storage.

During storage, the cooling unit must stand upright.

- Cooling units must be transported in an upright position and protected from tipping over.

The closed cooling circuit contains refrigerant and oil which must be properly disposed of for the sake of the environment. Disposal can be performed at the Rittal plant.

■ Please contact us for advice.

9 Technical specifications

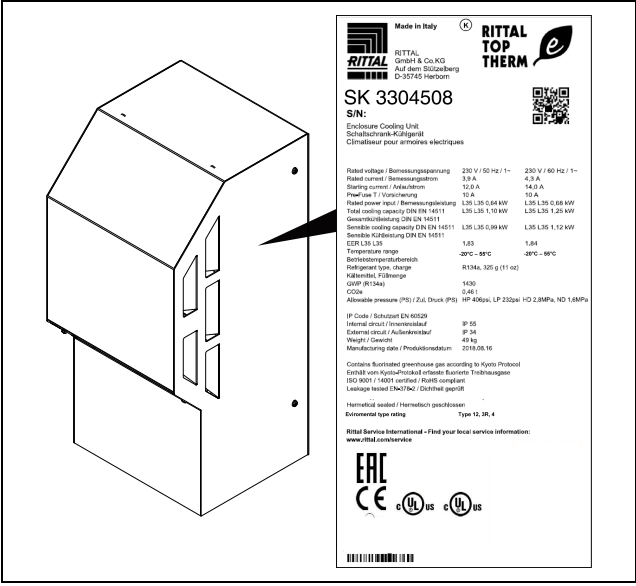


Fig. 32: Rating plate (technical specifications)

- Observe the mains connection data (voltage and frequency) as per the rating plate.
- Observe the pre-fuse as per the specifications on the rating plate.

9 Technical specifications

EN

	Unit	Model No.				
e-Comfort controller, RAL 7035	–	3303.508	3303.518	3304.508	3304.518	3304.548
Rated voltage	V Hz	230, 1~, 50/60	115, 1~, 60	230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50 460, 3~, 60
Rated current	A	2.6/2.6	5.7	3.9/4.3	8.0/8.8	2.2/2.1
Start-up current	A	5.1/6.4	11.5	12.0/14.0	26.0/28.0	11.5/12.7
Pre-fuse T	A	10.0	10.0	10.0	–	–
Circuit-breaker	A	–	–	–	–	6.3...10.0
Transformer circuit-breaker	A	–	–	–	11.0...16.0	–
Miniature circuit-breaker or gG slow fuse (T)	–	■	■	■	–	–
Total cooling output P _C to DIN EN 14511 L 35 L 35 L 35 L 50	kW kW	0.46/0.55 0.27/0.32	0.55 0.32	1.10/1.26 0.90/1.07	1.10/1.26 0.90/1.07	1.15/1.30 0.95/1.11
Sensible cooling output P _S to DIN EN 14511 L 35 L 35	kW	0.35/0.42	0.42	1.01/1.16	1.01/1.16	1.06/1.19
Rated output P _{el} to DIN EN 14511 L 35 L 35 L 35 L 50	kW kW	0.35/0.42 0.40/0.48	0.42 0.48	0.62/0.68 0.67/0.80	0.65/0.75 0.74/0.89	0.75/0.78 0.79/0.90
Energy efficiency ratio (EER) 50Hz L 35 L 35		1.31/1.30	1.30	1.75/1.86	1.69/1.46	1.53/1.67
Refrigerant – Type – Filling	– g	R134a 170	R134a 170	R134a 325	R134a 325	R134a 325
GWP	–	1430				
CO ₂ e	t	0.24	0.24	0.46	0.46	0.46
Permissible pressure	MPa	HP 2.8 LP 1.6				
Ambient temperature range	°C/°F	-20...+50/-4...+122				
Internal fan only	°C/°F	-20...+10/-4...+50				
Operating temperature range	°C/°F	+10...+50/50...+122				
Setting range	°C/°F	+20...+50/+68...+122				
Storage temperature	°C/°F	-40...+70/-40...+158				
Noise level	dB (A)	≤ 64				≤ 69
Protection category to IEC 60 529 – Internal circuit – External circuit	– –	IP 56 IP 34				
UL-Type rating	–	12, 3R, 4				
Dimensions (W x H x D1/D2)	mm	285 x 620 x 298/350		405 x 1020 x 358/410		
Weight	kg	25	25	49	54	50

D1 = Dimension of hood
D2 = Dimension of hood with electrical box

9 Technical specifications

EN

	Unit	Model No.						
e-Comfort controller, RAL 7035	–	3305.508	3305.518	3305.548	3329.508	3329.518	3329.548	
Rated voltage	V Hz	230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50 460, 3~, 60	230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50 460, 3~, 60	
Rated current	A	5.5/5.8	11.5/12.5	2.5/2.8	8.2/9.3	17.0/22.0	3.7/3.8	
Start-up current	A	12.0/14.0	26.0/28.0	12.2/11.3	20.0/24.0	44.0/42.0	6.8/7.6	
Pre-fuse T	A	16	–	–	16	–	–	
Circuit-breaker	A	–	–	6.3...10.0	–	–	6.3...10.0	
Transformer circuit-breaker	A	–	14.0...20.0	–	–	18.0...25.0	–	
Miniature circuit-breaker or gG slow fuse (T)	–	■	–	–	■	–	–	
Total cooling output P _C to DIN EN 14511	L 35 L 35 L 35 L 50	kW kW	1.53/1.84 1.08/1.30	1.53/1.84 1.08/1.30	1.49/1.70 1.04/1.17	2.51/2.88 1.76/1.79	2.51/2.88 1.76/1.79	2.43/2.57 1.68/1.71
Sensible cooling output P _s to DIN EN 14511	L 35 L 35	kW	1.41/1.69	1.41/1.69	1.34/1.54	2.15/2.47	2.15/2.47	2.14/2.30
Rated output P _{el} to DIN EN 14511	L 35 L 35 L 35 L 50	kW kW	0.63/0.75 0.75/0.91	0.70/0.84 0.84/1.01	0.65/0.82 0.78/0.96	1.21/1.40 1.44/1.68	1.34/1.56 1.60/1.86	1.36/1.71 1.59/2.03
Energy efficiency ratio (EER) 50Hz	L 35 L 35		2.44/2.44	2.19/2.19	2.28/2.07	2.07/2.05	1.87/1.85	1.79/1.50
Refrigerant – Type – Filling	– g	R134a 500	R134a 500	R134a 500	R134a 900	R134a 900	R134a 900	R134a 900
GWP	–	1430						
CO ₂ e	t	0.72	0.72	0.72	1.29	1.29	1.29	
Permissible pressure	MPa	HP 2.8 LP 1.6						
Ambient temperature range	°C	-20...+50/-4...+122						
Internal fan only	°C	-20...+10/-4...+50						
Operating temperature range	°C	+10...+50/+50...+122						
Setting range	°C	+20...+50/+68...+122						
Storage temperature		-40...+70/-40...+158						
Noise level	dB (A)	≤ 64		≤ 69	≤ 72		≤ 69	
Protection category to IEC 60 529 – Internal circuit – External circuit	– –	IP 56 IP 34						
UL-Type rating	–	12, 3R, 4						
Dimensions (W x H x D1/D2)	mm	405 x 1020 x 358/410			405 x 1650 x 388/440			
Weight	kg	51	56	52	83	90	84	

D1 = Dimension of hood

D2 = Dimension of hood with electrical box

9 Technical specifications

EN

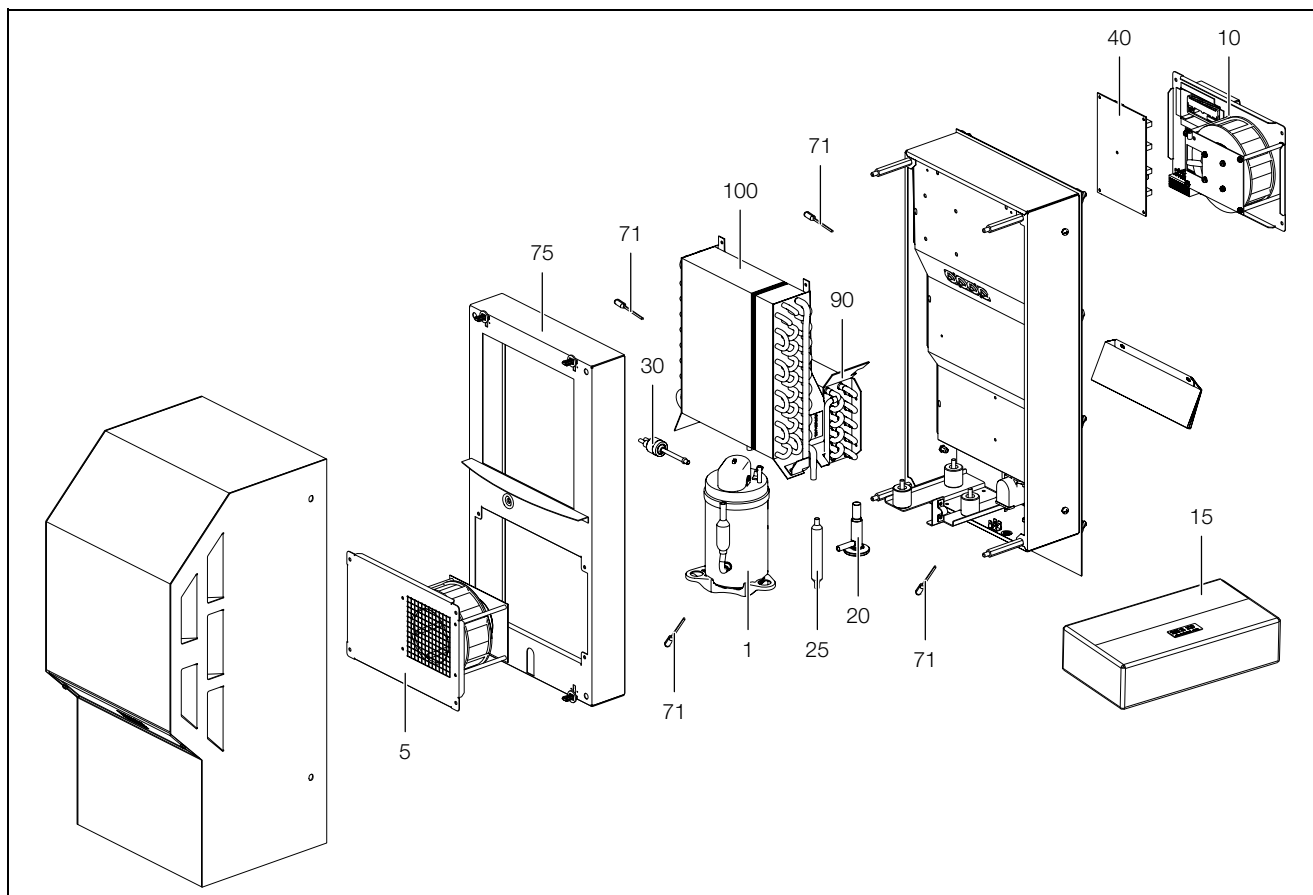


Fig. 33: Spare parts for SK 3303.5x8

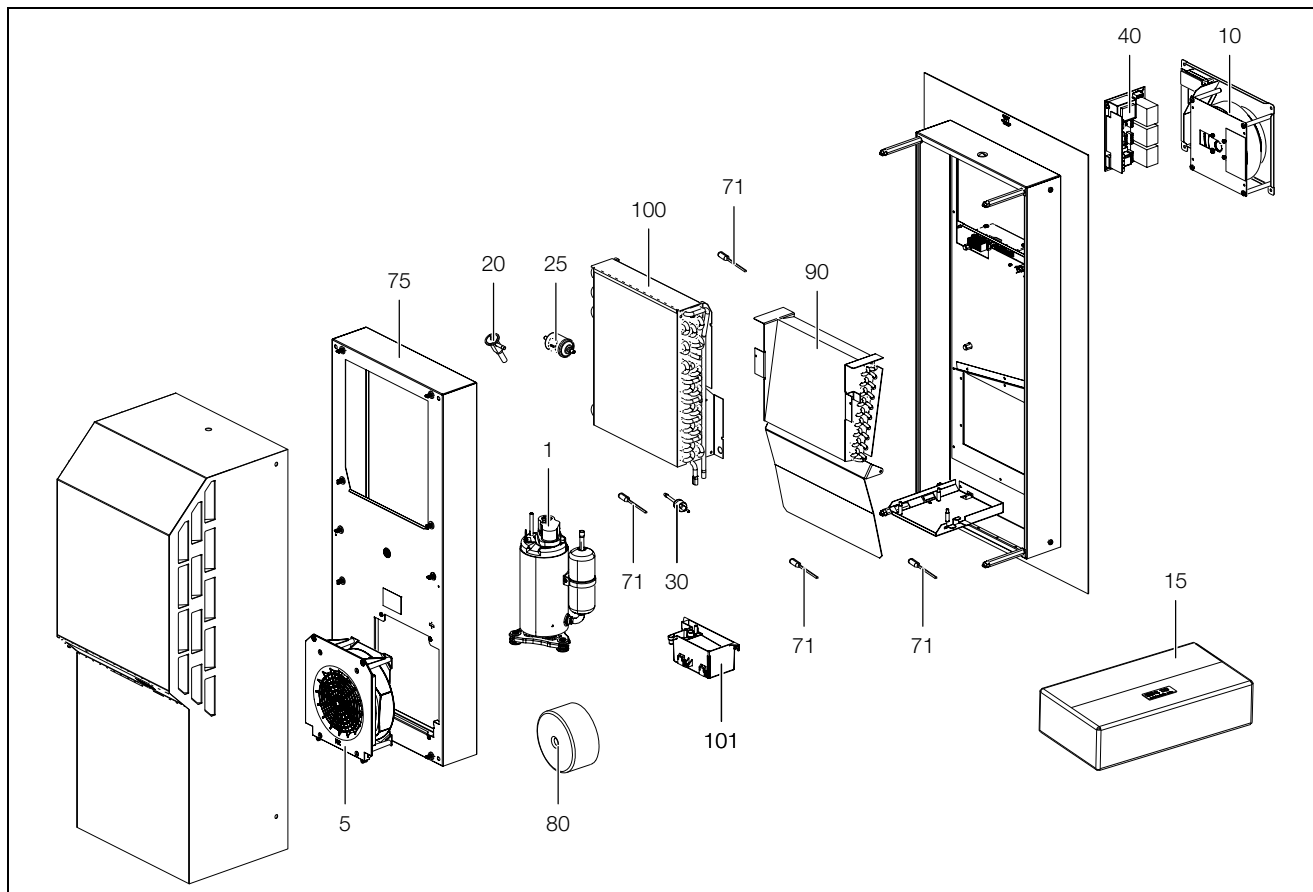


Fig. 34: Spare parts for SK 3304.5x8, SK 3305.5x8

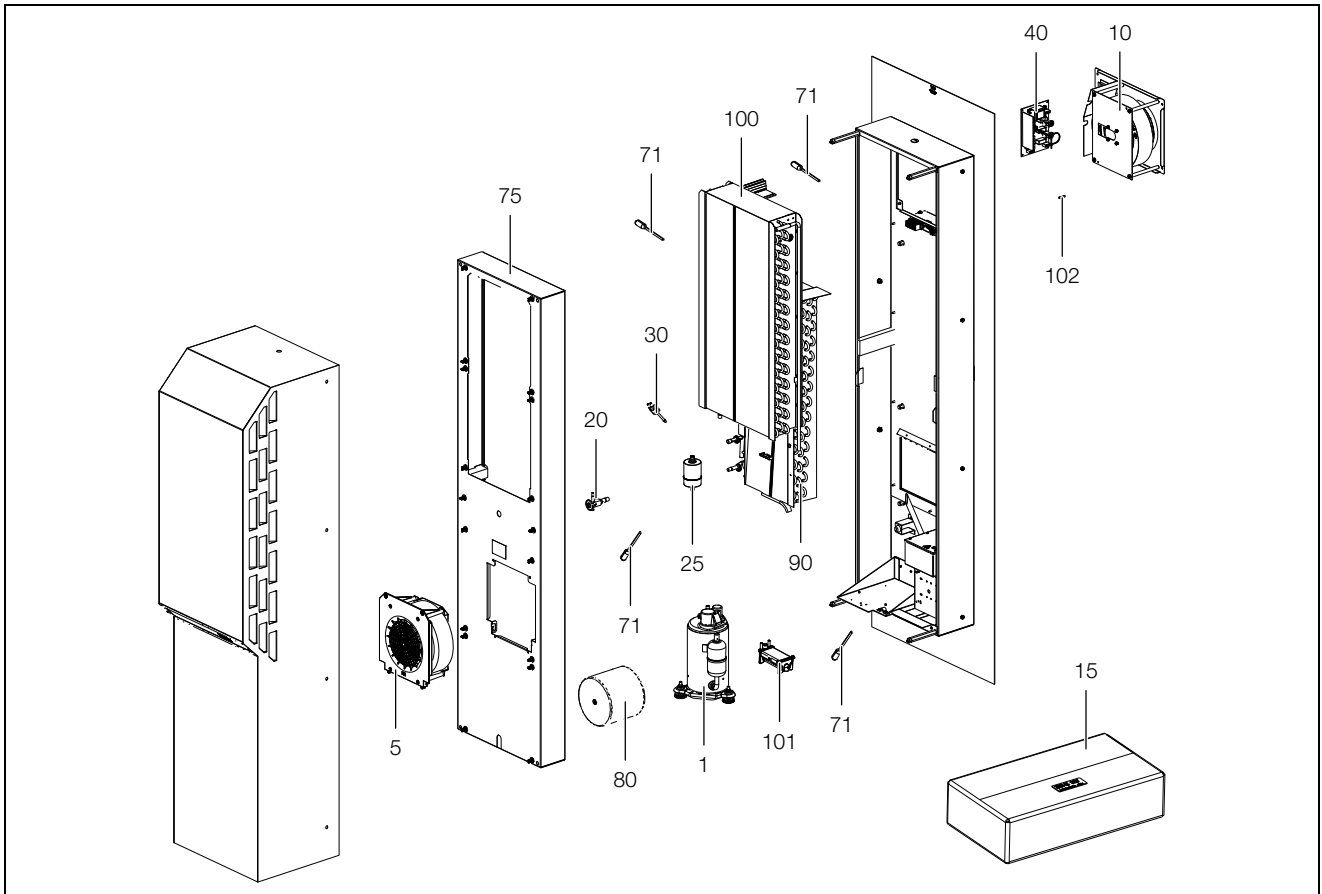


Fig. 35: Spare parts for SK 3329.5x8

Legend

- 1 Compressor
- 5 Condenser fan
- 10 Evaporator fan
- 15 Dispatch box
- 20 Expansion valve
- 25 Filter dryer
- 30 PSA^H pressure-operated switch
- 40 Controller board
- 56 Display
- 71 Temperature sensor
- 75 Enclosure tray
- 80 Transformer
- 90 Evaporator coil
- 100 Condenser
- 101 Condensate evaporator
- 102 Miniature fuse, condensate evaporator (T4A; 6.3 x 32 mm)



Note:

As well as the spare part number, when ordering spare parts the following information must be provided:

- Unit model
- Fabrication number
- Date of manufacture

This information may be found on the rating plate.

Technical drawing of a rectangular box with three views: front, side, and top. The front view shows a box with a width of 285 and a height of 620. The side view shows a depth of 238 and a height of 620. The top view shows a width of 285 and a depth of 238. The box has a lid with a handle and a latch. The drawing is labeled 'Fig. 1' and 'Fig. 2'.

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1st edition 12.2018 / ID no. 340524 / Document no. D-0000-00001713-00

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Rittal companies throughout the world here.



www.rittal.com/contact

RITTAL GmbH & Co. KG
Postfach 1662 · D-35726 Herborn
Phone +49(0)2772 505-0 · Fax +49(0)2772 505-2319
E-mail: info@rittal.de · www.rittal.com

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