

BA1N

Kinetic Energy Buffer

Operating Instructions
R911393267

Edition 01



Title	BA1N Kinetic Energy Buffer
Type of Documentation	Operating Instructions
Document Typecode	DOK-MOTOR*-BA1N*****-IT01-EN-P
Internal File Reference	RS-f5ce1423d8fb95400a347e8605926efc-1-en-US-3
Purpose of Documentation	This documentation ... <ul style="list-style-type: none"> • explains product features and applications, technical data as well as conditions and limits for operation and • provides information regarding product selection, handling and operation.
Record of revisions	Edition 01, 2019-08 See tab. 1-1 "Record of revisions" on page 1.
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Legal validity	The data in this document are intended solely for product description purposes and are not intended to be understood as assured characteristics in legal terms. We reserve the right to modify the contents of the documentation and supplies of the products.
Published by	Bosch Rexroth AG Electric Drives and Controls Dept. DC-AE/EPI5 (fs) Buergermeister-Dr.-Nebel-Strasse 2 97816 Lohr, Germany Tel. +49 93 52 18 0 / Fax +49 93 52 18 8400 http://www.boschrexroth.com/electrics
Note	This document has been printed on chlorine-free bleached paper.

D Deutsch	USA English	F Français
<p>▲WARNING Lebensgefahr bei Nichtbeachtung der nachstehenden Sicherheitshinweise!</p> <p>Nehmen Sie die Produkte erst dann in Betrieb, nachdem Sie die mit dem Produkt gelieferten Unterlagen und Sicherheitshinweise vollständig durchgelesen, verstanden und beachtet haben.</p> <p>Sollten Ihnen keine Unterlagen in Ihrer Landessprache vorliegen, wenden Sie sich an Ihren zuständigen Rexroth-Vertriebspartner.</p> <p>Nur qualifiziertes Personal darf an Antriebskomponenten arbeiten.</p> <p>Nähere Erläuterungen zu den Sicherheitshinweisen entnehmen Sie Kapitel 1 dieser Dokumentation.</p>	<p>▲WARNING Danger to life in case of non-compliance with the below-mentioned safety instructions!</p> <p>Do not attempt to install or put these products into operation until you have completely read, understood and observed the documents supplied with the product.</p> <p>If no documents in your language were supplied, please consult your Rexroth sales partner.</p> <p>Only qualified persons may work with drive components.</p> <p>For detailed explanations on the safety instructions, see chapter 1 of this documentation.</p>	<p>▲AVERTISSEMENT Danger de mort en cas de non-respect des consignes de sécurité figurant ci-après !</p> <p>Ne mettez les produits en service qu'après avoir lu complètement et après avoir compris et respecté les documents et les consignes de sécurité fournis avec le produit.</p> <p>Si vous ne disposez pas de la documentation dans votre langue, merci de consulter votre partenaire Rexroth.</p> <p>Seul un personnel qualifié est autorisé à travailler sur les composants d'entraînement.</p> <p>Vous trouverez des explications plus détaillées relatives aux consignes de sécurité au chapitre 1 de la présente documentation.</p>
<p>▲WARNING Hohe elektrische Spannung! Lebensgefahr durch elektrischen Schlag!</p> <p>Betreiben Sie Antriebskomponenten nur mit fest installiertem Schutzleiter.</p> <p>Schalten Sie vor Zugriff auf Antriebskomponenten die Spannungsversorgung aus.</p> <p>Beachten Sie die Entladezeiten von Kondensatoren.</p>	<p>▲WARNING High electrical voltage! Danger to life by electric shock!</p> <p>Only operate drive components with a permanently installed equipment grounding conductor.</p> <p>Disconnect the power supply before accessing drive components.</p> <p>Observe the discharge times of the capacitors.</p>	<p>▲AVERTISSEMENT Tensions électriques élevées ! Danger de mort par électrocution !</p> <p>N'exploitez les composants d'entraînement que si un conducteur de protection est installé de manière permanente.</p> <p>Avant d'intervenir sur les composants d'entraînement, coupez toujours la tension d'alimentation.</p> <p>Tenez compte des délais de décharge de condensateurs.</p>
<p>▲WARNING Gefahrbringende Bewegungen! Lebensgefahr!</p> <p>Halten Sie sich nicht im Bewegungsbereich von Maschinen und Maschinenteilen auf.</p> <p>Verhindern Sie den unbeabsichtigten Zutritt für Personen.</p> <p>Bringen Sie vor dem Zugriff oder Zutritt in den Gefahrenbereich die Antriebe sicher zum Stillstand.</p>	<p>▲WARNING Dangerous movements! Danger to life!</p> <p>Keep free and clear of the ranges of motion of machines and moving machine parts.</p> <p>Prevent personnel from accidentally entering the range of motion of machines.</p> <p>Make sure that the drives are brought to safe standstill before accessing or entering the danger zone.</p>	<p>▲AVERTISSEMENT Mouvements entraînant une situation dangereuse ! Danger de mort !</p> <p>Ne séjournez pas dans la zone de mouvement de machines et de composants de machines.</p> <p>Évitez tout accès accidentel de personnes.</p> <p>Avant toute intervention ou tout accès dans la zone de danger, assurez-vous de l'arrêt préalable de tous les entraînements.</p>
<p>▲WARNING Elektromagnetische / magnetische Felder! Gesundheitsgefahr für Personen mit Herzschrittmachern, metallischen Implantaten oder Hörgeräten!</p> <p>Zutritt zu Bereichen, in denen Antriebskomponenten montiert und betrieben werden, ist für oben genannten Personen untersagt bzw. nur nach Rücksprache mit einem Arzt erlaubt.</p>	<p>▲WARNING Electromagnetic / magnetic fields! Health hazard for persons with heart pacemakers, metal implants or hearing aids!</p> <p>The above-mentioned persons are not allowed to enter areas in which drive components are mounted and operated, or rather are only allowed to do this after they consulted a doctor.</p>	<p>▲AVERTISSEMENT Champs électromagnétiques / magnétiques ! Risque pour la santé des porteurs de stimulateurs cardiaques, d'implants métalliques et d'appareils auditifs !</p> <p>L'accès aux zones où sont montés et exploités les composants d'entraînement est interdit aux personnes susmentionnées ou bien ne leur est autorisé qu'après consultation d'un médecin.</p>
<p>▲VORSICHT Heiße Oberflächen (> 60 °C)! Verbrennungsgefahr!</p> <p>Vermeiden Sie das Berühren von metallischen Oberflächen (z. B. Kühlkörpern). Abkühlzeit der Antriebskomponenten einhalten (mind. 15 Minuten).</p>	<p>▲CAUTION Hot surfaces (> 60 °C [140 °F])! Risk of burns!</p> <p>Do not touch metallic surfaces (e.g. heat sinks). Comply with the time required for the drive components to cool down (at least 15 minutes).</p>	<p>▲ATTENTION Surfaces chaudes (> 60 °C)! Risque de brûlure !</p> <p>Évitez de toucher des surfaces métalliques (p. ex. dissipateurs thermiques). Respectez le délai de refroidissement des composants d'entraînement (au moins 15 minutes).</p>

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<p>⚠ VORSICHT Unsachgemäße Handhabung bei Transport und Montage! Verletzungsgefahr!</p> <p>Verwenden Sie geeignete Montage- und Transporteinrichtungen.</p> <p>Benutzen Sie geeignetes Werkzeug und persönliche Schutzausrüstung.</p>	<p>⚠ CAUTION Improper handling during transport and mounting! Risk of injury!</p> <p>Use suitable equipment for mounting and transport.</p> <p>Use suitable tools and personal protective equipment.</p>	<p>⚠ ATTENTION Manipulation incorrecte lors du transport et du montage ! Risque de blessure !</p> <p>Utilisez des dispositifs de montage et de transport adéquats.</p> <p>Utilisez des outils appropriés et votre équipement de protection personnel.</p>
<p>⚠ VORSICHT Unsachgemäße Handhabung von Batterien! Verletzungsgefahr!</p> <p>Versuchen Sie nicht, leere Batterien zu reaktivieren oder aufzuladen (Explosions- und Verätzungsgefahr).</p> <p>Zerlegen oder beschädigen Sie keine Batterien. Werfen Sie Batterien nicht ins Feuer.</p>	<p>⚠ CAUTION Improper handling of batteries! Risk of injury!</p> <p>Do not attempt to reactivate or recharge low batteries (risk of explosion and chemical burns).</p> <p>Do not dismantle or damage batteries. Do not throw batteries into open flames.</p>	<p>⚠ ATTENTION Manipulation incorrecte de piles! Risque de blessure!</p> <p>N'essayez pas de réactiver des piles vides ou de les charger (risque d'explosion et de brûlure par acide).</p> <p>Ne désassemblez et n'endommagez pas les piles. Ne jetez pas des piles dans le feu.</p>




E Español	P Português	I Italiano
<p>⚠ ADVERTENCIA ¡Peligro de muerte en caso de no observar las siguientes indicaciones de seguridad!</p> <p>Los productos no se pueden poner en servicio hasta después de haber leído por completo, comprendido y tenido en cuenta la documentación y las advertencias de seguridad que se incluyen en la entrega.</p> <p>Si no dispusiera de documentación en el idioma de su país, diríjase a su distribuidor competente de Rexroth.</p> <p>Solo el personal debidamente cualificado puede trabajar en componentes de accionamiento.</p> <p>Encontrará más detalles sobre las indicaciones de seguridad en el capítulo 1 de esta documentación.</p>	<p>⚠ ATENÇÃO Perigo de vida em caso de inobservância das seguintes instruções de segurança!</p> <p>Utilize apenas os produtos depois de ter lido, compreendido e tomado em consideração a documentação e as instruções de segurança fornecidas juntamente com o produto.</p> <p>Se não tiver disponível a documentação na sua língua, dirija-se ao seu parceiro de venda responsável da Rexroth.</p> <p>Apenas pessoal qualificado pode trabalhar nos componentes de acionamento.</p> <p>Explicações mais detalhadas relativamente às instruções de segurança constam no capítulo 1 desta documentação.</p>	<p>⚠ AVVERTENZA Pericolo di morte in caso di inosservanza delle seguenti indicazioni di sicurezza!</p> <p>Mettere in funzione i prodotti solo dopo aver letto, compreso e osservato per intero la documentazione e le indicazioni di sicurezza fornite con il prodotto.</p> <p>Se non dovesse essere presente la documentazione nella vostra lingua, siete pregati di rivolgervi al rivenditore Rexroth competente.</p> <p>Solo personale qualificato può eseguire lavori sui componenti di comando.</p> <p>Per ulteriori spiegazioni riguardanti le indicazioni di sicurezza consultare il capitolo 1 di questa documentazione.</p>
<p>⚠ ADVERTENCIA ¡Alta tensión eléctrica! ¡Peligro de muerte por descarga eléctrica!</p> <p>Active sólo los componentes de accionamiento con el conductor protector firmemente instalado.</p> <p>Desconecte la alimentación eléctrica antes de manipular los componentes de accionamiento.</p> <p>Tenga en cuenta los tiempos de descarga de los condensadores.</p>	<p>⚠ ATENÇÃO Alta tensão elétrica! Perigo de vida devido a choque elétrico!</p> <p>Opere componentes de acionamento apenas com condutores de proteção instalados.</p> <p>Desligue a alimentação de tensão antes de aceder aos componentes de acionamento.</p> <p>Respeite os períodos de descarga dos condensadores.</p>	<p>⚠ AVVERTENZA Alta tensione elettrica! Pericolo di morte in seguito a scosse elettriche!</p> <p>Mettere in esercizio i componenti di comando solo con conduttore di messa a terra ben installato.</p> <p>Staccare l'alimentazione prima di intervenire sui componenti di comando.</p> <p>Osservare i tempi di scarica del condensatore.</p>
<p>⚠ ADVERTENCIA ¡Movimientos peligrosos! ¡Peligro de muerte!</p> <p>No permanezca en la zona de movimiento de las máquinas ni de sus piezas.</p> <p>Impida el acceso accidental de personas.</p> <p>Antes de acceder o introducir las manos en la zona de peligro, los accionamientos se tienen que haber parado con seguridad.</p>	<p>⚠ ATENÇÃO Movimentos perigosos! Perigo de vida!</p> <p>Não permaneça na área de movimentação das máquinas e das peças das máquinas.</p> <p>Evite o acesso involuntário para pessoas.</p> <p>Antes de entrar ou aceder à área perigosa, imobilize os acionamentos de forma segura.</p>	<p>⚠ AVVERTENZA Movimenti pericolosi! Pericolo di morte!</p> <p>Non sostare nelle zone di manovra delle macchine e delle loro parti.</p> <p>Impedire un accesso non autorizzato per le persone.</p> <p>Prima di accedere alla zona di pericolo, arrestare e bloccare gli azionamenti.</p>




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<p>⚠ ADVERTENCIA ¡Campos electromagnéticos/magnéticos! ¡Peligro para la salud de las personas con marcapasos, implantes metálicos o audífonos!</p> <p>El acceso de las personas arriba mencionadas a las zonas de montaje o funcionamiento de los componentes de accionamiento está prohibido, salvo que lo autorice previamente un médico.</p>	<p>⚠ ATENÇÃO Campos eletromagnéticos / magnéticos! Perigo de saúde para pessoas com marcapassos, implantes metálicos ou aparelhos auditivos!</p> <p>Acesso às áreas, nas quais os componentes de acionamento são montados e operados, é proibido para as pessoas em cima mencionadas ou apenas após permissão de um médico.</p>	<p>⚠ AVVERTENZA Campi elettromagnetici / magnetici! Pericolo per la salute delle persone portatrici di pacemaker, protesi metalliche o apparecchi acustici!</p> <p>L'accesso alle zone in cui sono installati o in funzione componenti di comando è vietato per le persone sopra citate o consentito solo dopo un colloquio con il medico.</p>
<p>⚠ ATENCIÓN ¡Superficies calientes (> 60 °C)! ¡Peligro de quemaduras!</p> <p>Evite el contacto con las superficies calientes (p. ej., disipadores de calor). Observe el tiempo de enfriamiento de los componentes de accionamiento (mín. 15 minutos).</p>	<p>⚠ CUIDADO Superfícies quentes (> 60 °C)! Perigo de queimaduras!</p> <p>Evite tocar superfícies metálicas (p. ex. radiadores). Respeite o tempo de arrefecimento dos componentes de acionamento (mín. 15 minutos).</p>	<p>⚠ ATTENZIONE Superfici bollenti (> 60 °C)! Pericolo di ustioni!</p> <p>Evitare il contatto con superfici metalliche (ad es. dissipatori di calore). Rispettare i tempi di raffreddamento dei componenti di comando (almeno 15 minuti).</p>
<p>⚠ ATENCIÓN ¡Manipulación inadecuada en el transporte y montaje! ¡Peligro de lesiones!</p> <p>Utilice dispositivos de montaje y de transporte adecuados.</p> <p>Utilice herramientas adecuadas y equipo de protección personal.</p>	<p>⚠ CUIDADO Manejo incorreto no transporte e montagem! Perigo de ferimentos!</p> <p>Utilize dispositivos de montagem e de transporte adequados.</p> <p>Utilize ferramentas e equipamento de proteção individual adequados.</p>	<p>⚠ ATTENZIONE Manipolazione inappropriata durante il trasporto e il montaggio! Pericolo di lesioni!</p> <p>Utilizzare dispositivi di montaggio e trasporto adatti.</p> <p>Utilizzare attrezzi adatti ed equipaggiamento di protezione personale.</p>
<p>⚠ ATENCIÓN ¡Manejo inadecuado de las pilas! ¡Peligro de lesiones!</p> <p>No trate de reactivar o cargar pilas descargadas (peligro de explosión y cauterización).</p> <p>No desarme ni dañe las pilas. No tire las pilas al fuego.</p>	<p>⚠ CUIDADO Manejo incorreto de baterias! Perigo de ferimentos!</p> <p>Não tente reativar nem carregar baterias vazias (perigo de explosão e de queimaduras com ácido).</p> <p>Não desmonte nem danifique as baterias. Não deite as baterias no fogo.</p>	<p>⚠ ATTENZIONE Utilizzo inappropriato delle batterie! Pericolo di lesioni!</p> <p>Non tentare di riattivare o ricaricare batterie scariche (pericolo di esplosione e corrosione).</p> <p>Non scorporare o danneggiare le batterie. Non gettare le batterie nel fuoco.</p>

S Svenska	DK Dansk	NL Nederlands
<p>⚠ VARNING Livsfara om följande säkerhetsanvisningar inte följs!</p> <p>Använd inte produkterna innan du har läst och förstått den dokumentation och de säkerhetsanvisningar som medföljer produkten, och följ alla anvisningar.</p> <p>Kontakta din Rexroth-återförsäljare om dokumentationen inte medföljer på ditt språk.</p> <p>Endast kvalificerad personal får arbeta med drivkomponenterna.</p> <p>Se kapitel 1 i denna dokumentation för närmare beskrivningar av säkerhetsanvisningarna.</p>	<p>⚠ ADVARSEL Livsfare ved manglende overholdelse af nedenstående sikkerhedsanvisninger!</p> <p>Tag ikke produktet i brug, før du har læst og forstået den dokumentation og de sikkerhedsanvisninger, som følger med produktet, og overhold de givne anvisninger.</p> <p>Kontakt din Rexroth-forhandler, hvis dokumentationen ikke medfølger på dit sprog.</p> <p>Det er kun kvalificeret personale, der må arbejde på drive components.</p> <p>Nærmere forklaringer til sikkerhedsanvisningerne fremgår af kapitel 1 i denne dokumentation!</p>	<p>⚠ WAARSCHUWING Levensgevaar bij niet-naleving van onderstaande veiligheidsinstructies!</p> <p>Stel de producten pas in bedrijf nadat u de met het product geleverde documenten en de veiligheidsinformatie volledig gelezen, begrepen en in acht genomen heeft.</p> <p>Mocht u niet beschikken over documenten in uw landstaal, kunt u contact opnemen met uw plaatselijke Rexroth distributiepartner.</p> <p>Uitsluitend gekwalificeerd personeel mag aan de aandrijvingscomponenten werken.</p> <p>Meer informatie over de veiligheidsinstructies vindt u in hoofdstuk 1 van deze documentatie.</p>
<p>⚠ VARNING Hög elektrisk spänning! Livsfara genom elchock!</p> <p>Använd endast drivkomponenterna med fastmonterad skyddsledare.</p> <p>Koppla bort spänningsförsörjningen före arbete på drivkomponenter.</p> <p>Var medveten om kondensatorernas urladdningstid.</p>	<p>⚠ ADVARSEL Elektrisk højspænding! Livsfare på grund af elektrisk stød!</p> <p>Drive components må kun benyttes med et fast installeret jordstik.</p> <p>Sørg for at koble spændingsforsyningen fra, inden du rører ved drive components.</p> <p>Overhold kondensatorernes afladningstider.</p>	<p>⚠ WAARSCHUWING Hoge elektrische spanning! Levensgevaar door elektrische schok!</p> <p>Bedien de aandrijvingscomponenten uitsluitend met vast geïnstalleerde aardleiding.</p> <p>Schakel voor toegang tot aandrijvingscomponenten de spanningsvoorziening uit.</p> <p>Neem de ontlaadtijden van condensatoren in acht.</p>

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<p>⚠ VARNING Farliga rörelser! Livsfara!</p> <p>Uppehåll dig inte inom maskiners och maskindelarars rörelseområde.</p> <p>Förhindra att obehöriga personer får tillträde.</p> <p>Innan du börjar arbeta eller vistas inom drivsystemets riskområde måste maskinen vara stillastående.</p>	<p>⚠ ADVARSEL Farlige bevægelser! Livsfare!</p> <p>Du må ikke opholde dig inden for maskiners og maskindeles bevægelsesradius.</p> <p>Sørg for, at ingen personer kan få utilsigtet adgang.</p> <p>Stands drevene helt, inden du rører ved drevene eller træder ind i deres fareområde.</p>	<p>⚠ WAARSCHUWING Risicovolle bewegingen! Levensgevaar!</p> <p>Houdt u niet op in het bewegingsbereik van machines en machineonderdelen.</p> <p>Voorkom dat personen onbedoeld toegang verkrijgen.</p> <p>Voor toegang tot de gevaarlijke zone moeten de aandrijvingen veilig tot stilstand gebracht zijn.</p>
<p>⚠ VARNING Elektromagnetiska/magnetiska fält! Hälsofara för personer med pacemaker, implantat av metall eller hörapparat!</p> <p>Det är förbjudet för ovan nämnda personer (eller kräver överläggning med läkare) att beträda områden där drivkomponenter är monterade och i drift.</p>	<p>⚠ ADVARSEL Elektromagnetiske/magnetiske felter! Sundhedsfare for personer med pacemakere, metalliske implantater eller høreapparater!</p> <p>For disse personer er der adgang forbudt eller kun adgang med tilladelse fra læge til de områder, hvor drive components monteres og drives.</p>	<p>⚠ WAARSCHUWING Elektromagnetische / magnetische velden! Gevaar voor de gezondheid van personen met pacemakers, metalen implantaten of hoorapparaten!</p> <p>Toegang tot gebieden, waarin aandrijvingscomponenten worden gemonteerd en bediend, is verboden voor voornoemde personen of uitsluitend toegestaan na overleg met een arts.</p>
<p>⚠ OBSERVERA Varma ytor (> 60 °C)! Risk för brännskador!</p> <p>Undvik att vidröra metallytor (t.ex. kylelement). Var medveten om att det tar tid för drivkomponenterna att svalna (minst 15 minuter).</p>	<p>⚠ FORSIGTIG Varme overflader (> 60 °C)! Risiko for forbrændinger!</p> <p>Undgå at berøre metaloverflader (f.eks. køleelementer). Overhold drive components nedkølingstid (min. 15 min.).</p>	<p>⚠ VOORZICHTIG Hete oppervlakken (> 60 °C)! Verbrandingsgevaar!</p> <p>Voorkom contact met metalen oppervlakken (bijv. Koellichamen). Afkoeltijd van de aandrijvingscomponenten in acht nemen (min. 15 minuten).</p>
<p>⚠ OBSERVERA Felaktig hantering vid transport och montering! Skaderisk!</p> <p>Använd passande monterings- och transportanordningar.</p> <p>Använd lämpliga verktyg och personlig skyddsutrustning.</p>	<p>⚠ FORSIGTIG Fejlhåndtering ved transport og montering! Risiko for kvæstelser!</p> <p>Benyt egnede monterings- og transportanordninger.</p> <p>Benyt egnet værktøj og personligt sikkerhedsudstyr.</p>	<p>⚠ VOORZICHTIG Onjuist gebruik bij transport en montage! Letselgevaar!</p> <p>Gebruik geschikte montage- en transportinrichtingen.</p> <p>Gebruik geschikt gereedschap en een persoonlijke veiligheidsuitrusting.</p>
<p>⚠ OBSERVERA Felaktig hantering av batterier! Skaderisk!</p> <p>Försök inte återaktivera eller ladda upp batterier (risk för explosioner och frätskador).</p> <p>Batterierna får inte tas isär eller skadas. Släng inte batterierna i elden.</p>	<p>⚠ FORSIGTIG Fejlhåndtering af batterier! Risiko for kvæstelser!</p> <p>Forsøg ikke at genaktivere eller oplade tomme batterier (eksplosions- og ætsningsfare).</p> <p>Undlad at skille batterier ad eller at beskadige dem. Smid ikke batterier ind i åben ild.</p>	<p>⚠ VOORZICHTIG Onjuist gebruik van batterijen! Letselgevaar!</p> <p>Probeer nooit lege batterijen te reactiveren of op te laden (explosiegevaar en gevaar voor beschadiging van weefsel door cauterisatie).</p> <p>Batterijen niet demonteren of beschadigen. Nooit batterijen in het vuur werpen.</p>

 Suomi	 Polski	 Český
<p>VAROITUS Näiden turvaohjeiden noudattamatta jättämisestä on seurauksena hengenvaara!</p> <p>Ota tuote käyttöön vasta sen jälkeen, kun olet lukenut läpi tuotteen mukana toimitetut asiakirjat ja turvallisuusohjeet, ymmärtänyt ne ja ottanut ne huomioon.</p> <p>Jos asiakirjoja ei ole saatavana omalla äidinkielelläsi, ota yhteys asianomaiseen Rexrothin myyntiedustajaan.</p> <p>Käyttölaitteiden komponenttien parissa saa työskennellä ainoastaan valtuutettu henkilöstö.</p> <p>Lisätietoa turvaohjeista löydät tämän dokumentaation luvusta 1.</p>	<p>OSTRZEŻENIE Zagrożenie życia w razie nieprzestrzegania poniższych wskazówek bezpieczeństwa!</p> <p>Nie uruchamiać produktów przed uprzednim przeczytaniem i pełnym zrozumieniem wszystkich dokumentów dostarczonych wraz z produktem oraz wskazówek bezpieczeństwa. Należy przestrzegać wszystkich zawartych tam zaleceń.</p> <p>W przypadku braku dokumentów w Państwa języku, prosimy o skontaktowanie się z lokalnym partnerem handlowym Rexroth.</p> <p>Przy zespołach napędowych może pracować wyłącznie wykwalifikowany personel.</p> <p>Blizsze objaśnienia wskazówek bezpieczeństwa znajdują się w Rozdziale 1 niniejszej dokumentacji.</p>	<p>VAROVÁNÍ Nebezpečí života v případě nedodržení níže uvedených bezpečnostních pokynů!</p> <p>Před uvedením výrobků do provozu si přečtěte kompletní dokumentaci a bezpečnostní pokyny dodávané s výrobkem, pochopte je a dodržujte.</p> <p>Nemáte-li k dispozici podklady ve svém jazyce, obraťte se na příslušného obchodního partnera Rexroth.</p> <p>Na komponentách pohonu smí pracovat pouze kvalifikovaný personál.</p> <p>Podrobnější vysvětlení k bezpečnostním pokynům naleznete v kapitole 1 této dokumentace.</p>
<p>VAROITUS Voimakas sähköjännite! Sähköiskun aiheuttama hengenvaara!</p> <p>Käytä käyttölaitteen komponentteja ainoastaan maadoitusjohtimen ollessa kiinteästi asennettuna.</p> <p>Katkaise jännitteensyöttö ennen käyttölaitteen komponenteille suoritettavien töiden aloittamista.</p> <p>Huomioi kondensaattoreiden purkausajat.</p>	<p>OSTRZEŻENIE Wysokie napięcie elektryczne! Zagrożenie życia w wyniku porażenia prądem!</p> <p>Zespoły napędu mogą być eksploatowane wyłącznie z zainstalowanym na stałe przewodem ochronnym.</p> <p>Przed uzyskaniem dostępu do podzespołów napędu należy odłączyć zasilanie elektryczne.</p> <p>Zwracać uwagę na czas rozładowania kondensatorów.</p>	<p>VAROVÁNÍ Vysoké elektrické napětí! Nebezpečí života při zasažení elektrickým proudem!</p> <p>Komponenty pohonu smí být v provozu pouze s pevně nainstalovaným ochranným vodičem.</p> <p>Než začnete zasahovat do komponent pohonu, odpojte je od elektrického napájení.</p> <p>Dodržujte vybíjecí časy kondenzátorů.</p>
<p>VAROITUS Vaarallisia liikkeitä! Hengenvaara!</p> <p>Älä oleskele koneiden tai koneenosien liikealueella.</p> <p>Pidä huolta siitä, ettei muita henkilöitä pääse alueelle vahingossa.</p> <p>Pysäytä käyttölaitteet varmasti ennen vaara-alueelle koskemista tai menemistä.</p>	<p>OSTRZEŻENIE Niebezpieczne ruchy! Zagrożenie życia!</p> <p>Nie wolno przebywać w obszarze pracy maszyny i jej elementów.</p> <p>Nie dopuszczać osób niepowołanych do obszaru pracy maszyny.</p> <p>Przed dotknięciem urządzenia/maszyny lub zbliżeniem się do obszaru zagrożenia należy zgodnie z zasadami bezpieczeństwa wyłączyć napędy.</p>	<p>VAROVÁNÍ Nebezpečné pohyby! Nebezpečí života!</p> <p>Nezdržujte se v dosahu pohybu strojů a jejich součástí.</p> <p>Zabraňte náhodnému přístupu osob.</p> <p>Před zásahem nebo vstupem do nebezpečného prostoru bezpečně zastavte pohonu.</p>
<p>VAROITUS Sähkömagneettisia/ magneettisia kenttiä! Terveystieteellisten haittojen vaara henkilöille, joilla on sydämentahdistin, metallinen implantti tai kuulolaite!</p> <p>Yllä mainituilta henkilöiltä on pääsy kielletty alueelle, joilla asennetaan tai käytetään käyttölaitteen komponentteja, tai heidän on ensin saatava tähän suostumus lääkäriltään.</p>	<p>OSTRZEŻENIE Pola elektromagnetyczne / magnetyczne! Zagrożenie zdrowia dla osób z rozrusznikiem serca, metalowymi implantami lub aparatami słuchowymi!</p> <p>Wstęp na teren, gdzie odbywa się montaż i eksploatacja napędów jest dla ww. osób zabroniony względnie dozwolony po konsultacji z lekarzem.</p>	<p>VAROVÁNÍ Elektromagnetická/ magnetická pole! Nebezpečí pro zdraví osob s kardiostimulátory, kovovými implantáty nebo naslouchadly!</p> <p>Výše uvedené osoby mají zakázán přístup do prostorů, kde jsou montovány a používány komponenty pohonu, resp. ho mají povolen pouze po poradě s lékařem.</p>
<p>HUOMIO Kuumia pintoja (> 60 °C)! Palovammojen vaara!</p> <p>Vältä metallipintojen koskettamista (esim. jäähdytyslevyt). Noudata käyttölaitteen komponenttien jäähtymisaikoja (väh. 15 minuuttia).</p>	<p>PRZESTROGA Gorące powierzchnie (> 60 °C)! Niebezpieczeństwo poparzenia!</p> <p>Unikać kontaktu z powierzchniami metalowymi (np. radiatorami). Przestrzegać czasów schładzania podzespołów napędów (min. 15 minut).</p>	<p>UPOZORNĚNÍ Horké povrchy (> 60 °C)! Nebezpečí popálení!</p> <p>Nedotýkejte se kovových povrchů (např. chladičích těles). Dodržujte dobu ochlazení komponent pohonu (min. 15 minut).</p>

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<p>▲ HUOMIO Epäasianmukainen käsittely kuljetuksen ja asennuksen yhteydessä! Loukkaantumisaara!</p> <p>Käytä soveltuvia asennus- ja kuljetuslaitteita.</p> <p>Käytä omia työkaluja ja henkilökohtaisia suojavarusteita.</p>	<p>▲ PRZESTROGA Niewłaściwe obchodzenie się podczas transportu i montażu! Ryzyko urazu!</p> <p>Stosować odpowiednie urządzenia montażowe i transportowe.</p> <p>Stosować odpowiednie narzędzia i środki ochrony osobistej.</p>	<p>▲ UPOZORNĚNÍ Nesprávné zacházení při přepravě a montáži! Nebezpečí zranění!</p> <p>Používejte vhodná montážní a dopravní zařízení.</p> <p>Používejte vhodné nářadí a osobní ochranné vybavení.</p>
<p>▲ HUOMIO Paristonjen epäasianmukainen käsittely! Loukkaantumisaara!</p> <p>Älä yritä saada tyhjiä paristoja toimimaan tai ladata niitä uudelleen (räjähdys- ja syöpymisaara).</p> <p>Älä hajota paristoja osiin tai vaurioita niitä. Älä heitä paristoja tullen.</p>	<p>▲ PRZESTROGA Niewłaściwe obchodzenie się z bateriami! Ryzyko urazu!</p> <p>Nie próbować reaktywować i nie ładować zużytych baterii (niebezpieczeństwo wybuchu oraz poparzenia żrącą substancją).</p> <p>Nie demontować i nie niszczyć baterii. Nie wrzucać baterii do ognia.</p>	<p>▲ UPOZORNĚNÍ Nesprávné zacházení s bateriemi! Nebezpečí zranění!</p> <p>Nepokoušejte se znovu aktivovat nebo dobíjet prázdné baterie (nebezpečí výbuchu a poleptání).</p> <p>Nerozebírejte ani nepoškožujte baterie. Neházejte baterie do ohně.</p>

 Slovensko	 Slovenčina	 Română
<p>▲ OPOZORILO Življenjska nevarnost pri neupoštevanju naslednjih napotkov za varnost!</p> <p>Izdelke začnite uporabljati šele, ko v celoti preberete, razumete in upošteвате izdelkom priloženo dokumentacijo in varnostne napotke.</p> <p>Če priložena dokumentacija ni na voljo v vašem maternem jeziku, se obrnite na pristojnega distributerja Rexroth.</p> <p>Samo kvalificirano osebje sme delati na pogonskih komponentah.</p> <p>Podrobnejša pojasnila o varnostnih navodilih najdete v poglavju 1 v tej dokumentaciji.</p>	<p>▲ VAROVANIE Nebezpečnostv ohrozenia života pri nedodržiavaní nasledujúcich bezpečnostných pokynov!</p> <p>Výrobky uvádzajte do prevádzky až potom, čo ste úplne prečítali, pochopili a zobrali do úvahy podklady a bezpečnostné pokyny dodané s výrobkom.</p> <p>Ak by ste nemali k dispozícii žiadne podklady v jazyku svojej krajiny, obráťte sa prosím na svojho príslušného predajcu Rexroth.</p> <p>Na komponentoch pohonu smie pracovať iba kvalifikovaný personál.</p> <p>Bližšie vysvetlenia k bezpečnostným pokynom zistíte z kapitoly 1 tejto dokumentácie.</p>	<p>▲ AVERTIZARE Pericol de moarte în cazul nerespectării următoarelor instrucțiuni de siguranță!</p> <p>Punerea în funcțiune a produselor trebuie efectuată după citirea, înțelegerea și respectarea documentelor și instrucțiunilor de siguranță, care sunt livrate împreună cu produsele.</p> <p>În cazul în care documentele nu sunt în limba dumneavoastră maternă, vă rugăm să contactați partenerul de vânzări Rexroth.</p> <p>Numai un personal calificat poate lucra cu componentele de acționare.</p> <p>Explicații detaliate privind instrucțiunile de siguranță găsiți în capitolul 1 al acestei documentații.</p>
<p>▲ OPOZORILO Visoka električna napetost! Življenjska nevarnost zaradi električnega udara!</p> <p>Pogonske komponente uporabljajte samo s fiksno nameščenim zaščitnim vodnikom.</p> <p>Pred dostopom do pogonske komponente odklopite napajanje.</p> <p>Upošteвайте čase praznjenja kondenzatorjev.</p>	<p>▲ VAROVANIE Vysoké elektrické napätie! Nebezpečnostv ohrozenia života v dôsledku zásahu elektrickým prúdom!</p> <p>Komponenty pohonu prevádzkujte iba s pevne nainštalovaným ochranným vodičom.</p> <p>Pred prístupom na komponenty pohonu odpojte zdroj napätia.</p> <p>Rešpektujte časy vybitia kondenzátorov.</p>	<p>▲ AVERTIZARE Tensiune electrică înaltă! Pericol de moarte prin electrocutare!</p> <p>Exploatați componentele de acționare numai cu împământarea instalată permanent.</p> <p>Înainte de intervenția asupra componentelor de acționare, deconectați alimentarea cu tensiune electrică.</p> <p>Țineți cont de timpii de descărcare ai condensatorilor.</p>
<p>▲ OPOZORILO Nevarni premiki! Življenjska nevarnost!</p> <p>Ne zadržujte se v območju delovanja strojev.</p> <p>Preprečite nenadzorovan dostop oseb.</p> <p>Pred prijemom ali dostopom v nevarno območje varno zaustavite vse gnane dele.</p>	<p>▲ VAROVANIE Pohyby prinášajúce nebezpečnostv! Nebezpečnostv ohrozenia života!</p> <p>Nezdržiaavajte sa v oblasti pohybu strojov a častí strojov.</p> <p>Zabráňte nepovolanému prístupu osôb.</p> <p>Pred zásahom alebo prístupom do nebezpečnej oblasti uveďte pohony bezpečne do zastavenia.</p>	<p>▲ AVERTIZARE Mișcări periculoase! Pericol de moarte!</p> <p>Nu staționați în zona de mișcare a mașinilor și a componentelor în mișcare a mașinilor.</p> <p>Împiedicați accesul neintenționat al persoanelor în zona de lucru a mașinilor.</p> <p>Înainte de intervenția sau accesul în zona periculoasă, opriți în siguranță componentele de acționare.</p>

SLO Slovensko	SK Slovenčina	RO Română
<p>⚠ OPOZORILO Elektromagnetna / magnetna polja! Nevarnost za zdravje za osebe s spodbujevalniki srca, kovinskimi vsadki ali slušnimi aparati!</p> <p>Dostop do območij, v katerih so nameščene delujoče pogonske komponente, je za zgoraj navedene osebe prepovedan oz. dovoljen samo po posvetu z zdravnikom.</p>	<p>⚠ VAROVANIE Elektromagnetické/ magnetické polia! Nebezpečenstvo pre zdravie osôb s kardioštimulátormi, kovovými implantátmi alebo načúvacími prístrojmi!</p> <p>Prístup k oblastiam, v ktorých sú namontované a prevádzkujú sa komponenty pohonu, je pre hore uvedené osoby zakázaný resp. je dovolený iba po konzultácii s lekárom.</p>	<p>⚠ AVERTIZARE Câmpuri electromagnetice / magnetice! Pericol pentru sănătatea persoanelor cu stimuloare cardiace, implanturi metalice sau aparate auditive!</p> <p>Intrarea în zone, în care se montează sau se exploatează componente de acționare, este interzisă pentru persoanele sus numite respectiv este permisă numai cu acordul medicului.</p>
<p>⚠ POZOR Vroče površine (> 60 °C)! Nevarnost opeklin!</p> <p>Izogibajte se stiku s kovinskimi površinami (npr. hladilnimi telesii). Upoštevajte čas hlajenja pogonskih komponent (najm. 15 minut).</p>	<p>⚠ UPOZORNENIE Horúce povrchy (> 60 °C)! Nebezpečenstvo popálenia!</p> <p>Zabráňte kontaktu s kovovými povrchmi (napr. chladiacimi telesami). Dodržiavajte čas vychladenia komponentov pohonu (min. 15 minút).</p>	<p>⚠ ATENȚIE Suprafețe fierbinți (> 60 °C)! Pericol de arsuri!</p> <p>Nu atingeți suprafețele metalice (de ex. radiatoare de răcire). Respectați timpii de răcire ai componentelor de acționare (min. 15 minute).</p>
<p>⚠ POZOR Nestrokovno ravnanje med transportom in nameštivju! Nevarnost poškodb!</p> <p>Uporablajte ustrezne pripomočke za nameščanje in transport.</p> <p>Uporabite ustrezno orodje in osebno zaščitno opremo.</p>	<p>⚠ UPOZORNENIE Neodborná manipulácia pri transporte a montáži! Nebezpečenstvo poranenia!</p> <p>Používajte vhodné montážne a transportné zariadenia.</p> <p>Používajte vhodné náradie a osobné ochranné prostriedky.</p>	<p>⚠ ATENȚIE Manipulare necorespunzătoare la transport și montaj! Pericol de vătămare!</p> <p>Utilizați dispozitive adecvate de montaj și transport.</p> <p>Folosiți instrumente corespunzătoare și echipament personal de protecție.</p>
<p>⚠ POZOR Nepravilno ravnanje z baterijami! Nevarnost poškodb!</p> <p>Ne poskušajte ponovno aktivirati ali napolniti praznih baterij (Nevarnost zaradi eksplozije ali jedkanja).</p> <p>Ne razstavljajte ali poškodujte nobenih baterij. Baterij ne mečite v ogenj.</p>	<p>⚠ UPOZORNENIE Neodborná manipulácia s batériami! Nebezpečenstvo poranenia!</p> <p>Nepokúšajte sa reaktivovať alebo nabíjať prázdne batérie (nebezpečenstvo výbuchu a poleptania).</p> <p>Batérie nerozoberajte ani nepoškodzuje. Nehádzte batérie do ohňa.</p>	<p>⚠ ATENȚIE Manipulare necorespunzătoare a bateriilor! Pericol de vătămare!</p> <p>Nu încercați să reactivați sau să încărcați bateriile goale (pericol de explozie și pericol de arsuri).</p> <p>Nu dezasamblați și nu deteriorați bateriile. Nu aruncați bateriile în foc.</p>

H Magyar	BG Български	LV Latviski
<p>⚠ FIGYELMEZTETÉS! Az alábbi biztonsági útmutatások figyelmen kívül hagyása életveszélyes helyzethez vezethet!</p> <p>Üzembe helyezés előtt olvassa el, értelmezze, és vegye figyelembe a csomagban található dokumentumban foglaltakat és a biztonsági útmutatásokat.</p> <p>Amennyiben a csomagban nem talál az Ön nyelvén írt dokumentumokat, vegye fel a kapcsolatot az illetékes Rexroth-képviselővel.</p> <p>A hajtás alkatrészein kizárólag képzett személy dolgozhat.</p> <p>A biztonsági útmutatókkal kapcsolatban további magyarázatot ennek a dokumentumnak az első fejezetében találhat.</p>	<p>⚠ ПРЕДУПРЕЖДЕНИЕ Опасност за живота при неспазване на посочените подолу инструкции за безопасност!</p> <p>Използвайте продуктите след като сте се запознали подробно с приложената към продукта документация и указания за безопасност, разбрали сте ги и сте се съобразили с тях.</p> <p>Ако текстът не е написан на Вашия език, моля обърнете се към Вашия компетентен търговски представител на Rexroth.</p> <p>Със задвижващите компоненти трябва да работи само квалифициран персонал.</p> <p>Подробни пояснения към инструкциите за безопасност можете да видите в Глава 1 на тази документация.</p>	<p>⚠ BRĪDINĀJUMS Turpinājuma doto drošības norādījumu neievērošana var apdraudēt dzīvību!</p> <p>Sāciet lietot izstrādājumu tikai pēc tam, kad esat pilnībā izlasījuši, sapratuši un nēmuši vērā kopā ar izstrādājumu piegādātos dokumentus.</p> <p>Ja dokumenti nav pieejami Jūsu valsts valodā, vērsieties pie pilnvarotā Rexroth izplatītāja.</p> <p>Darbus pie piedziņas komponentiem drīkst veikt tikai kvalificēts personāls.</p> <p>Detalizētus paskaidrojumus attiecībā uz drošības norādījumiem skatiet šī dokumenta 1. nodaļā.</p>
<p>⚠ FIGYELMEZTETÉS! Magas elektromos feszültség! Életveszély áramütés miatt!</p> <p>A hajtás alkatrészeit csak véglegesen telepített védővezetővel üzemeltesse!</p> <p>Mielőtt hozzányúl a hajtás alkatrészeihez, kapcsolja ki az áramellátást.</p> <p>Ügyeljen a kondenzátorok kisülési idejére!</p>	<p>⚠ ПРЕДУПРЕЖДЕНИЕ Високо електрическо напрежение! Опасност за живота от удар от електрически ток!</p> <p>Работете със задвижващите компоненти само при здраво закрепен заземяващ проводник.</p> <p>Преди работа по задвижващите компоненти, изключете захранващото напрежение.</p> <p>Обърнете внимание на времето за разреждане на кондензаторите.</p>	<p>⚠ BRĪDINĀJUMS Augsts elektriskais spriegums! Dzīvības apdraudējums elektriskā trieciena dēļ!</p> <p>Piedziņas komponentus darbiniet tikai ar fiksēti uzstādītu zemējumvadu.</p> <p>Pirms darba pie piedziņas komponentiem atslēdziet elektroapgādi.</p> <p>Nemiet vērā kondensatoru izlādes laikus.</p>

H Magyar	BG Български	LV Latviski
<p>▲ FIGYELMEZTETÉS! Veszélyes mozgás! Életveszély!</p> <p>Ne tartózkodjon a gépek és a gépkatrészek mozgási területén belül!</p> <p>Illetéktelen személyeket ne engedjen a gép közelébe!</p> <p>Mielőtt beavatkozik, vagy a veszélyes zónába belép a hajtásokat biztonságosan állítsa le.</p>	<p>▲ ПРЕДУПРЕЖДЕНИЕ Опасни движения! Опасност за живота!</p> <p>Не стойте в обсега на движение на машините и частите на машините.</p> <p>Не допускайте непреднамерен достъп на хора.</p> <p>Преди работа или влизане в опасната зона, спрете надеждно приводния механизъм.</p>	<p>▲ BRĪDINĀJUMS Bīstamas kustības! Dzīvības apdraudējums!</p> <p>Neuzturieties mašīnu un mašīnas detaļu kustību zonā.</p> <p>Novērsiet nepiederošu personu piekļūšanu.</p> <p>Pirms darba bīstamajās zonās pilnībā apstādiniet piedziņu.</p>
<p>▲ FIGYELMEZTETÉS! Elektromágneses / mágneses mező! Káros hatással lehet a szívritmus-szabályozó készülékkel, fémbelüktetéssel vagy hallókészülékkel rendelkezők egészségére!</p> <p>Azokra a területekre, ahol hajtások alkatrészeit szerelik és üzemeltetik, a fent említett személyeknek tilos a belépés, illetve csak orvosi konzultációt követően szabad az adott területekre lépniük.</p>	<p>▲ ПРЕДУПРЕЖДЕНИЕ Електромагнитни / магнитни полета! Опасност за здравето на хора със сърдечни стимулатори, метални импланти или слухови апарати!</p> <p>Достъпът за гореспоменатите лица до зони, в които ще се монтират и ще работят задвижващи компоненти се забранява, или разрешава само след консултация с лекар.</p>	<p>▲ BRĪDINĀJUMS Elektromagnētiskais / magnētiskais lauks! Veselības apdraudējums personām ar sirds stimulatoriem, metāliskiem implantiem vai dzirdes aparātiem!</p> <p>Tuvošanās zonām, kurās tiek montēti un darbināti piedziņas komponenti, iepriekš minētajām personām ir aizliegta, respektīvi, atļauta tikai pēc konsultēšanās ar ārstu.</p>
<p>▲ VIGYÁZAT! Forró felületek (> 60 °C)! Égésveszély!</p> <p>Ne érjen hozzá fémfelületekhez (pl. hűtőtetekhez)! Vegye figyelembe a hajtás alkatrészeinek kihűlési idejét (min. 15 perc)!</p>	<p>▲ ВНИМАНИЕ Горещи повърхности (> 60 °C)! Опасност от изгаряне!</p> <p>Не докосвайте метални повърхности (например радиатори). Съблюдавайте времето на охлаждане на задвижващите компоненти (мин. 15 минути).</p>	<p>▲ UZMANĪBU Karstas virsmas (> 60 °C)! Apdedzināšanās risks!</p> <p>Neskarīties pie metāliskām virsmām (piemēram, dzesētāja). Ļaujiet piedziņas komponentiem atdzist (min. 15 minūtes).</p>
<p>▲ VIGYÁZAT! Szakszerűtlen kezelés szállításkor és szereléskor! Sérülésveszély!</p> <p>A megfelelő beszerelési és szállítási eljárásokat alkalmazza!</p> <p>Használjon megfelelő szerszámokat és személyes védőfelszerelést!</p>	<p>▲ ВНИМАНИЕ Неправилно боравене по време на транспорт и монтаж! Опасност от нараняване!</p> <p>Използвайте подходящо монтажно и транспортно оборудване.</p> <p>Използвайте подходящи инструменти и лични предпазни средства.</p>	<p>▲ UZMANĪBU Nepareizi veikta transportēšana un montāža! Traumu gūšanas risks!</p> <p>Izmantojiet piemērotas montāžas un transportēšanas ierīces.</p> <p>Izmantojiet piemērotus instrumentus un individuālos aizsardzības līdzekļus.</p>
<p>▲ VIGYÁZAT! Akkumulátorok szakszerűtlen kezelése! Sérülésveszély!</p> <p>Üres akkumulátorokat ne aktiváljon újra, illetve ne töltsön fel (robbanás- és marásveszély)!</p> <p>Az akkumulátorokat ne szedje szét, és ne rongálja meg! Az akkumulátort ne dobja tűzbe!</p>	<p>▲ ВНИМАНИЕ Неправилно боравене с батерии! Опасност от нараняване!</p> <p>Не се опитвайте да активирате отново или да зареждате разредени батерии (Опасност от експлозия и напръскване с агресивен агент).</p> <p>Не разглобявайте и не повреждайте батерии. Не хвърляйте батерии в огън.</p>	<p>▲ UZMANĪBU Nepareiza bateriju lietošana! Traumu gūšanas risks!</p> <p>Nemēģiniet no jauna aktivizēt vai uzlādēt tukšas baterijas (eksploziju un ķīmisko apdegumu draudi).</p> <p>Neizjauciet un nesabojājat baterijas. Nemetiet baterijas ugunī.</p>

<p style="text-align: center;">LT Lietuviškai</p>	<p style="text-align: center;">EST Eesti</p>	<p style="text-align: center;">GR Ελληνικά</p>
<p>⚠️ ISPĖJIMAS Pavojus gyvybei nesilaikant toliau pateikiamų saugumo nurodymų!</p> <p>Naudokite gaminį tik kruopščiai perskaitę prie jo pridėtus aprašus, saugumo nurodymus. Susipažinkite su jais ir vadovaukitės naudodami gaminį.</p> <p>Jei Jūs negavote aprašo gimtąja kalba, kreipkitės į igaliotus Rexroth atstovus.</p> <p>Prie pavaros komponentų leidžiama dirbti tik kvalifikuotam personalui.</p> <p>Išsamesnius saugumo nurodymų paaiškinimus rasite šios dokumentacijos 1 skyriuje.</p>	<p>⚠️ HOIATUS Alljärgnevatate ohutusjuhiste eiramine on eluohtlik!</p> <p>Võtke tooted käiku alles siis, kui olete toodetega kaasasolevad materjalid ning ohutusjuhised täielikult läbi lugenud, neist aru saanud ja neid järginud.</p> <p>Kui Teil puuduvad emakeelsed materjalid, siis pöörduge Rexrothi kohaliku müügiesinduse poole.</p> <p>Ajamikomponentidega tohib töötada üksnes kvalifitseeritud personal.</p> <p>Täpsemaid selgitusi ohutusjuhiste kohta leiate käesoleva dokumentatsiooni peatükist 1.</p>	<p>⚠️ ΠΡΟΕΙΔΟΠΟΙΗΣΗ Κίνδυνος θανάτου σε περίπτωση μη συμμόρφωσης με τις παρακάτω οδηγίες ασφαλείας!</p> <p>Θέστε το προϊόν σε λειτουργία αφού διαβάσετε, κατανοήσετε και λάβετε υπόψη το σύνολο των οδηγιών ασφαλείας που το συνοδεύουν.</p> <p>Εάν δεν υπάρχει τεκμηρίωση στη γλώσσα σας, απευθυνθείτε σε εξουσιοδοτημένο αντιπρόσωπο της Rexroth.</p> <p>Μόνο εξειδικευμένο προσωπικό επιτρέπεται να χειρίζεται στοιχεία μετάδοσης κίνησης.</p> <p>Περαιτέρω επεξηγήσεις των οδηγιών ασφαλείας διατίθενται στο κεφάλαιο 1 της παρούσας τεκμηρίωσης.</p>
<p>⚠️ ISPĖJIMAS Aukšta elektros įtampa! Pavojus gyvybei dėl elektros smūgio!</p> <p>Pavaros komponentus eksploatuokite tik su fiksuotai instaliuotu apsauginiu laidu.</p> <p>Prieš prieidami prie pavaros komponentų išjunkite maitinimo įtampą.</p> <p>Atsižvelkite į kondensatorių išsikrovimo trukmę.</p>	<p>⚠️ HOIATUS Kõrge elektripinge! Eluohtlik elektrilõõgi tõttu!</p> <p>Käitage ajamikomponente üksnes püsival installaeritud maandusega.</p> <p>Lülitage enne ajamikomponentidega tööde alustamist toitepinge välja.</p> <p>Järgige kondensaatorite mahalaadumisaegu.</p>	<p>⚠️ ΠΡΟΕΙΔΟΠΟΙΗΣΗ Υψηλή ηλεκτρική τάση! Κίνδυνος θανάτου από ηλεκτροπληξία!</p> <p>Θέτετε σε λειτουργία τα στοιχεία μετάδοσης κίνησης μόνο εφόσον έχει τοποθετηθεί καλά προστατευτικός αγωγός γείωσης.</p> <p>Πριν από οποιαδήποτε παρέμβαση, αποσυνδέστε την τροφοδοσία των στοιχείων μετάδοσης κίνησης.</p> <p>Λάβετε υπόψη τους χρόνους αποφόρτισης των πυκνωτών.</p>
<p>⚠️ ISPĖJIMAS Pavojingi judesiai! Pavojus gyvybei!</p> <p>Nebūkite mašinų ar jų dalių judėjimo zonoje. Neleiskite netyčia patekti asmenims.</p> <p>Prieš patekdami į pavojaus zoną saugiai išjunkite pavaras.</p>	<p>⚠️ HOIATUS Ohtlikud liikumised! Eluohtlik!</p> <p>Ärge viibige masina ja masinaosade liikumispiirkonnas.</p> <p>Tõkestage inimeste ettekavatsematu sisenemine masina ja masinaosade liikumispiirkonda.</p> <p>Tagage ajamite turvaline seiskamine enne ohupiirkonda juurdepääsu või sisenemist.</p>	<p>⚠️ ΠΡΟΕΙΔΟΠΟΙΗΣΗ Επικίνδυνες τάσεις! Κίνδυνος θανάτου!</p> <p>Μην στέκεστε στην περιοχή κίνησης μηχανημάτων και εξαρτημάτων.</p> <p>Αποτρέψτε την τυχαία είσοδο ατόμων.</p> <p>Πριν από την παρέμβαση ή πρόσβαση στην περιοχή κινδύνου, μεριμνήστε για την ασφαλή ακινητοποίηση των συστημάτων μετάδοσης κίνησης.</p>
<p>⚠️ ISPĖJIMAS Elektromagnetiniai / magnetiniai laukai! Pavojus asmenų su širdies stimulatoriais, metaliniais implantais arba klausos aparatais sveikatai!</p> <p>Prieiga prie zonų, kuriose montuojami ir eksploatuojami pavaros komponentai, aukščiau nurodytiems asmenims yra draudžiama arba leistina tik pasitarus su gydytoju.</p>	<p>⚠️ HOIATUS Elektromagnetilised / magnetilised väljad! Terviseohtlik südamestimulaatorite, metallimplantaatide ja kuulmisseadmetega inimestele!</p> <p>Sisenemine piirkondadesse, kus toimub ajamikomponentide monteerimine ja käitamine, on ülalnimetatud isikutele keelatud või lubatud üksnes pärast arstiga konsulteerimist.</p>	<p>⚠️ ΠΡΟΕΙΔΟΠΟΙΗΣΗ Ηλεκτρομαγνητικά/ μαγνητικά πεδία! Κίνδυνος για την υγεία ατόμων με καρδιακούς βηματοδότες, μεταλλικά εμφυτεύματα ή συσκευές ακοής!</p> <p>Η είσοδος σε περιοχές όπου πραγματοποιείται συναρμολόγηση και λειτουργία στοιχείων μετάδοσης κίνησης απαγορεύεται στα προαναφερθέντα άτομα, εκτός αν τους έχει δοθεί σχετική άδεια κατόπιν συνεννόησης με γιατρό.</p>
<p>⚠️ PERSPĖJIMAS Karšti paviršiai (> 60 °C)! Nudėgimo pavojus!</p> <p>Venkite liesti metalinius paviršius (pvz., radiatorių). Išlaikykite pavaros komponentų atvėsimą trukmę (bent 15 minučių).</p>	<p>⚠️ ETTEVAATUST Kuumad välispinnad (> 60 °C)! Põletusoh!</p> <p>Vältige metalsete välispindade (nt radiaatorid) puudutamist. Pidage kinni ajamikomponentide mahajahtumisaajast (vähemalt 15 minutit).</p>	<p>⚠️ ΠΡΟΣΟΧΗ Καυτές επιφάνειες (> 60 °C)! Κίνδυνος εγκαύματος!</p> <p>Αποφεύγετε την επαφή με μεταλλικές επιφάνειες (π.χ. μονάδες ψύξης). Λάβετε υπόψη το χρόνο ψύξης των στοιχείων μετάδοσης κίνησης (τουλάχιστον 15 λεπτά).</p>

LT Lietuviškai	EST Eesti	GR Ελληνικά
<p>⚠ PERSPĖJIMAS Netinkamas darbas transportuojant ir montuojant! Susižalojimo pavojus!</p> <p>Naudokite tinkamus montavimo ir transportavimo įrenginius.</p> <p>Naudokite tinkamus įrankius ir asmens saugos priemones.</p>	<p>⚠ ETTEVAATUSTI Asjatundmatu käsitsemine transportimisel ja montaažil! Vigastusoht!</p> <p>Kasutage sobivaid montaaži- ja transportiseadiseid.</p> <p>Kasutage sobivaid tööriistu ja isiklikku kaitsevarustust.</p>	<p>⚠ ΠΡΟΣΟΧΗ Ακατάλληλος χειρισμός κατά τη μεταφορά και συναρμολόγηση! Κίνδυνος τραυματισμού!</p> <p>Χρησιμοποιείτε κατάλληλους μηχανισμούς συναρμολόγησης και μεταφοράς.</p> <p>Χρησιμοποιείτε κατάλληλα εργαλεία και ατομικό εξοπλισμό προστασίας.</p>
<p>⚠ PERSPĖJIMAS Netinkamas darbas su baterijomis! Susižalojimo pavojus!</p> <p>Nebandykite tuščių baterijų reaktivuoti arba įkrauti (sprogimo ir išėsdinimo pavojus).</p> <p>Neardykite ir nepažeiskite baterijų.</p> <p>Nemeskite baterijų į ugnį.</p>	<p>⚠ ETTEVAATUSTI Patareide asjatundmatu käsitsemine! Vigastusoht!</p> <p>Ärge üritage kunagi tühje patareisid reaktiveerida või täis laadida (plahvatus- ja söövitusoht).</p> <p>Ärge demonteerige ega kahjustage patareisid. Ärge visake patareisid tulle.</p>	<p>⚠ ΠΡΟΣΟΧΗ Ακατάλληλος χειρισμός μπαταριών! Κίνδυνος τραυματισμού!</p> <p>Μην επιδιώκετε να ενεργοποιήσετε ξανά ή να φορτίσετε κενές μπαταρίες (κίνδυνος έκρηξης και διάβρωσης).</p> <p>Μην διαλύετε ή καταστρέφετε τις μπαταρίες. Μην απορρίπτετε τις μπαταρίες στη φωτιά.</p>

CN 中文
<p>⚠ 警告 如果不按照下述指定的安全说明使用，将会导致人身伤害！</p> <p>在没有阅读，理解随本产品附带的文件并熟知正当使用前，不要安装或使用本产品。</p> <p>如果没有您所在国家官方语言文件说明，请与 Rexroth 销售伙伴联系。</p> <p>只允许有资格人员对驱动器部件进行操作。</p> <p>安全说明的详细解释在本文档的第一章。</p>
<p>⚠ 警告 高压！电击导致生命危险！</p> <p>只有在安装了永久良好的设备接地导线后才可以对驱动器的部件进行操作。</p> <p>在接触驱动器部件前先将驱动器部件断电。</p> <p>确保电容放电时间。</p>
<p>⚠ 警告 危险运动！生命危险！</p> <p>保证设备的运动区域内和移动部件周围无障碍物。</p> <p>防止人员意外进入设备运动区域内。</p> <p>在接近或进入危险区域之前，确保传动设备安全停止。</p>
<p>⚠ 警告 电磁场/磁场！对佩戴心脏起搏器、金属植入物和助听器的人员会造成严重的人身伤害！</p> <p>上述人员禁止进入安装及运行的驱动器区域，或者必须事先咨询医生。</p>
<p>⚠ 小心 热表面（大于 60 度）！灼伤风险！</p> <p>不要触摸金属表面（例如散热器）。驱动器部件断电后需要时间进行冷却（至少 15 分钟）。</p>
<p>⚠ 小心 安装和运输不当导致受伤危险！当心受伤！</p> <p>使用适当的运输和安装设备。</p> <p>使用适合的工具及用适当的防护设备。</p>
<p>⚠ 小心 电池操作不当！受伤风险！</p> <p>请勿对低电量电池重新激活或重新充电（爆炸和腐蚀的危险）。</p> <p>请勿拆解或损坏电池。请勿将电池投入明火中。</p>

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1 About this documentation

1.1 Validity of the documentation

This documentation is valid for energy storage device of the BA1N series and must be observed by assemblers, operators, service engineers and facility operators.

1.2 Editions of this documentation


Edition	Release date	Notes
01	2019-08	First edition

Tab. 1-1: Record of revisions

1.3 Additional documentation

Operate this product only, if you have the following documentation available. You must understand and observe this documentation.

Technical data, operating characteristic curves, dimension sheets a.s.o. are included in the project planning manual of BA1N for all types.

	Title	Document type	Document number
	BA1N - Kinetic Energy Buffer	Project Planning Manual	DOK-MOTOR*-BA1N*****-PR□□-□□-P

Tab. 1-2: Additional documentation

1.4 Information presentation

Safety instructions The safety instructions in this documentation describe signal words (danger, warning, caution, note) and a signal symbol (acc. to ANSI Z535.6-2006).(danger, warning, caution, note) .

The signal word is intended to draw your attention to the safety instructions and describes the seriousness of the danger. The warning triangle with exclamation mark indicates the danger for persons.

DANGER

Non-compliance with this safety instructions **will** result in death or severe personal injury.

WARNING

Non-compliance with this safety instructions **can** result in death or severe personal injury.















⚠ CAUTION

Non-compliance with this safety instructions can result in moderate or minor personal injury.

NOTICE

Non-compliance with this safety instructions can result in material damage.

Symbol

Symbol	Meaning
	Reference to supplementary documentation
	This note gives important information, which must be observed.
	Single, independent handling step
1. 2. 3.	numbered instruction: The numbers show that the action steps must be taken one after the other.
	Warning against dangerous electric voltage
	Warning against hot surfaces
	Warning against rotating machine parts
	Warning against overhead load
	Electrostatic sensitive devices
	Prohibition for persons with cardiac pacemaker
	Do not carry along metal parts or clocks
	Hammer scales are forbidden
	The UL Recognized Component Mark identifies recognized component parts which are components of a bigger product or system
	The letters "C" and "E" stand for "Communautés Européennes". The CE-marking expresses the conformity of a product with relevant EC-regulations. Conformity with the Low Voltage Directive 2006/95/EC, DIN EN 60034-1, DIN EN 60034-5 is confirmed for BA1N energy storage device.
	Components for the use in systems for "integrated safety technique" prepared.

Tab. 1-3: *Meaning of symbols*

2 Safety instructions

2.1 About this product

Observe the general safety notes in this chapter and the safety instructions in this documentation. Therewith, you avoid personal danger, damage and errors.



This operating instruction must be stored and transferred in case of sale during the complete product lifetime.

2.2 Intended use

Prerequisites for proper and safe use of the energy storage devices are proper transport, appropriate storage, proper assembly and connection, careful maintenance, operation and overhaul.

The energy storage device have been designed for installation in industrial machinery. BA1N are according to the following standards and directives.

Standards

EN 60034-1	Rating and performance behavior
EN 60034-5	Type of protection

Directives

2006/95/EG	Low voltage directive
------------	-----------------------

The machine manufacturer must evaluate the electric and mechanic safety as well as environmental influences in the assembled state of the machine according to the Machine Directive 2006/42/EC and DIN EN 60204-1 (safety of machines).

The electric installation must comply with the protection requirements of the EMC Directive 2004/108/EC. The plant manufacturer is responsible for appropriate installation (for example: physical separation of signal and power cables, using shielded cables, ...). The EMC instructions of the converter manufacturer must be observed.

Start-up is prohibited as long as the conformity with these directives is declared.

2.3 Unintended use

Any use of the motors outside of the specified fields of application or under operating conditions and technical data other than those specified in this documentation is considered to be "inappropriate use".

Operation in hazardous areas (ATEX) and direct operation on the three-phase network is forbidden.

2.4 Qualification of personnel

For the purpose of this manual, qualified personnel means persons who are familiar with transporting, installing, mounting, commissioning and operating the components of the electrical drive and control system and the associated hazards and have an appropriate qualification for their job.

All persons, working on, with or near an electric facility, must know the safety requirements, safety instructions and operating instructions (DIN EN 50110-1).

2.5 General safety instructions

Do not install or operate energy storage device or components of electric drive and control systems, as long as you have not read all delivered documentation.

Please observe the respectively valid national, local and plant-specific regulations, the safety notes in the documentation and the warning signs on the components of the BA1N.

Improper use of the components and non-observance of the described safety notes can lead to damage, bodily injury, electric shock or in extreme case lead to death.

In the case of damage due to non-observance of the safety notes, Bosch Rexroth assumes no liability.

2.6 Product- and technology-dependent safety instructions

2.6.1 Protection from electric voltage

Work required on the electric system may only be carried out by skilled electricians. Tools for electricians (VDE tools) are absolutely necessary.

Before working:

1. Enable.
2. Secure against reactivation.
3. Ensure de-energization.
4. Ground and short-circuit.
5. Cover or shield any adjacent live parts.

After completing the job, cancel the measures in reverse order.

Dangerous voltage occurs during operation! Danger to life, risk of injury by electric shock!

- Before start-up, connect the protective conductors on all electric components according to the connection plan.
- Operation, even for short measuring purposes, is only allowed with fixed connected protective conductor on the specified points of the components.

2.6.2 Protection against magnetic and electromagnetic fields

Magnetic and electromagnetic fields are created in the direct environment of live conductors or permanent magnets of electro motors and are a serious danger for persons.

Strong magnetic and electromagnetic fields pose a health hazard for persons with heart pacemakers, metallic implants and hearing aids in the direct environment of motor components!

- Persons with heart pacemakers and metallic implants are not allowed to approach or handle these motor components.

2.6.3 Protection against burns

Risk of injury due to hot surfaces!

- Avoid contact with hot surfaces. **Temperatures may rise to over 70°C.**
- Allow the energy storage device to cool down long enough before touching them.
- Temperature-sensitive components may not come into contact with the BA1N surface. Ensure appropriate mounting distance of connection cables and other components.

3 Scope of delivery

The scope of delivery of a BA1N energy storage device contains:

- Energy storage device in its origin package
- Additional rating plate
- Safety notes and instructions on use
- Protective covers for plug connections and coolant connections for water-cooled energy storage devices.

On delivery, immediately verify whether the delivered goods are those specified on the delivery note. The forwarder must be promptly informed of any damage on the packaging and goods, which is detected on delivery. Start-up of damaged goods is prohibited.

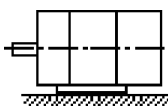
4 About this product

4.1 Product description

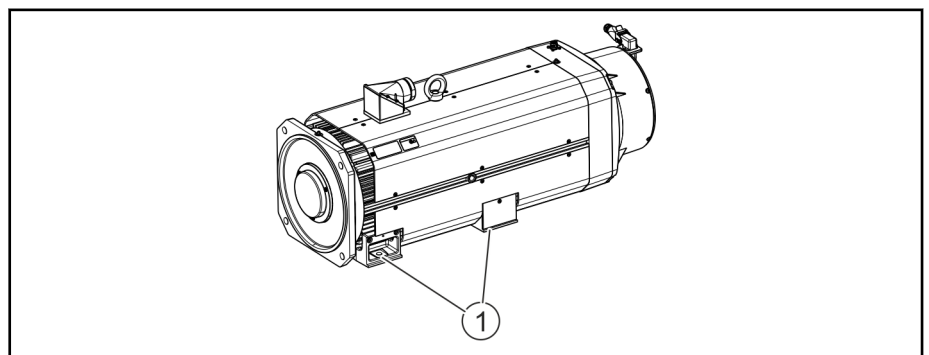
4.1.1 Technical features

Product	Kinetic Energy Buffer
Manufacturer	Bosch Rexroth Electric Drives and Controls GmbH Buergermeister-Dr.-Nebel-Straße 2 97816 Lohr am Main, Germany
Type	BA1N16 , water-cooled BA1N16 , forced ventilation
Listed acc. to CSA standard	in preparation
Listed acc. to UL standard	in preparation
Ambient temperature during operation	0 ... 40 °C
Frame shape	IM B3 (DIN EN 60034-7)
Degree of protection	IP65 (DIN EN 60034-5)
Flange	acc. to DIN 42955
Installation altitude	0 ... 1000 m
Sound pressure level	< 75 dB(A)
Insulation class	155 (DIN EN 60034-1)
Electrical connection	Power connection: Device connector Encoder connection Device connector
Encoder system	AS (Singleturn, Hiperface®, 16 signal periods)

4.1.2 Frame size

Frame size	Allowed installation types		
	Designation	Drawing	Installation
IM B3	IM 1001		Foot assembly, feet at the bottom

Tab. 4-1: Allowed installation positions



① Mounting feet (bilateral); hole clearance see dimension sheet

Fig. 4-1: Attachment of the BA1N energy storage device

4.1.3 Degree of protection

BA1N energy storage devices are subject to the degrees of protection pursuant to IEC 60529. It must always be ensured that the energy storage devices - irrespective of their installation position - are not exposed to ambient conditions outside of the applicable degree of protection.

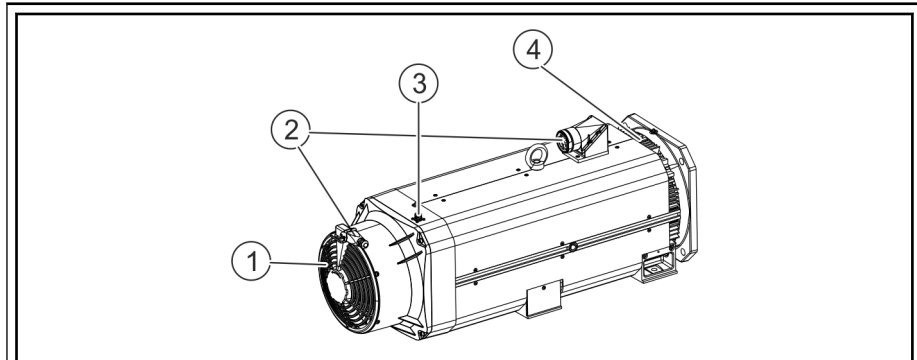


Fig. 4-2:

Component subject to protection		Degree of protection	Remark
①	Motor fan (only for force-ventilated versions)	IP 65	Fan motor IP 65 Fan grille IP 24
②	Power connection Fan connection	IP 65	Forced ventilation and water cooling version
③	Encoder connection		
④	Housing		

Tab. 4-2: Defining the energy storage device components subject to protection

4.1.4 Bearings - Hybrid bearings

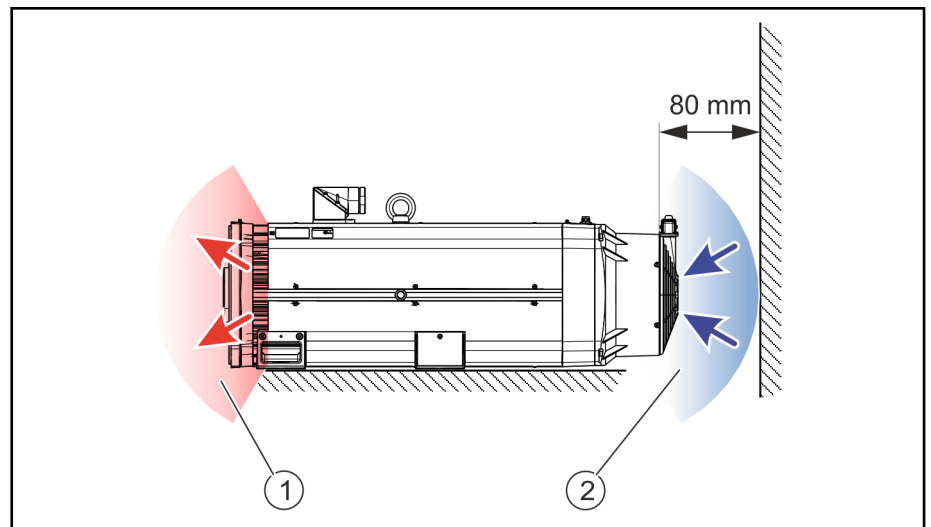
Ball bearings with ceramic rolling elements are used. The average continuous speed determines the service life or the interval length until the required re-lubrication. However, the number of re-lubrications is limited due to the size of the grease collecting chambers on the bearings. Please observe the notes regarding re-lubrication under [chapter 7.7.3 "Re-lubrication of the hybrid bearings"](#) on page 32.

4.1.5 Cooling

Forced ventilation

Energy storage devices with this cooling method may only be operated with a fan. The fan used is an axial fan. The fan is only available as "blowing" fan. Cooling takes place via air streams which are guided over the surface of the energy storage devices by air baffles.

To ensure that the axial fan can move the required air volume, a minimum distance for letting the air in and out must be kept between the fan grille and the machine.



① Air outlet space

② Air suction area

Fig. 4-3: Air suction area

Contamination can reduce the flow rate of the fans and lead to thermal overload of the energy storage devices.

When the energy storage devices are operated in a dirty environment, the availability of the system is increased by cleaning the fans and cooling fins at regular intervals.


When designing the machine, consider the accessibility of the energy storage device and fan for maintenance work.

The use of the fan under the following conditions is expressly not suitable:

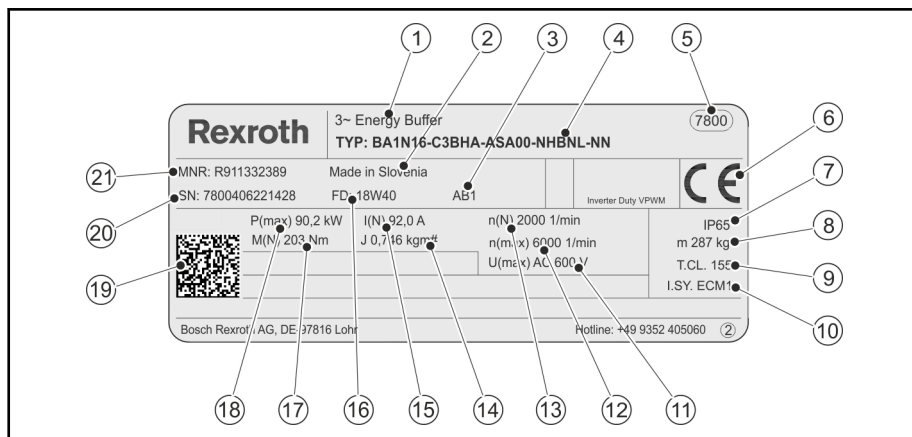
- Delivery of air which contains abrasive particles
- Delivery of air which has a strongly corroding effect, e.g., salt mist
- Delivery of air which contains a high dust load, e.g., extraction of saw dust
- Delivery of combustible gases/particles
- Use of the ventilator as a technical safety component or as a component assuming safety-relevant functions

Liquid cooling

Liquid-cooled energy storage devices may only be operated on a closed coolant circuit with heat exchanger. The coolant flow direction can be arbitrarily selected. The cooling circuit in the energy storage device is made of stainless steel.

Expand the cooling circuit with anticorrosive. Please observe the information in the project planning manual  BA1N - Kinetic Energy Buffer see [tab. 1-2 "Additional documentation" on page 1](#).

4.2.2 Type plate example



- 1 Type of machine
- 2 Designation of origin
- 3 Change status
- 4 Type designation
- 5 Manufacturing plant
- 6 CE mark of conformity
- 7 Degree of protection by housing
- 8 Mass
- 9 Thermal temperature class
- 10 Insulation system
- 11 Maximum input voltage
- 12 Maximum speed
- 13 Rated speed / company address
- 14 Rotor inertia
- 15 Rated current
- 16 Manufacturing date
- 17 Rated torque
- 18 Maximum power
- 19 Rexroth barcode
- 20 Serial number
- 21 Material number

Fig. 4-5: BA1N type plate example

BA1N energy storage devices are each delivered with 2 type plates. Attach the second type plate to an easily visible position at the machine. This way, you can read the data at any time without having to work in areas that are difficult to access and where the energy storage device may be attached.

5 Transport and storage

5.1 General notes

NOTICE

Damage or injuries and loss of the warranty due to improper handling!

- Protect the products against moisture and corrosion.
- Avoid putting the products under mechanical load. Do not throw, tilt or drop the products.
- Only use lifting equipment suitable for the weight of the BA1N energy storage device.
- Never lift the BA1N energy storage device by the fan housing.
- Use suitable protective equipment and protective clothing during transport.

5.2 Transport instructions

To protect the BA1N energy storage device against dirt, dust, etc., Bosch Rexroth recommends transporting it

- up to the prepared installation place
- until it is actually installed in the machine

in its original packaging in which the BA1N energy storage device is delivered by Rexroth.

To lift the BA1N energy storage device out of the transport crate or to install it in the machine, use the attached lifting eyebolts.

The lifting eyebolts at least meet the requirements of DIN 580. Before each transport, ensure that the lifting eyebolts have been screwed down fully to the contact surface and that your selected lifting equipment and lifting method does not overstress the lifting eyebolts.



Please comply with DIN 580 on the transport of the BA1N energy storage device using the attached lifting eyebolts. Non-observance of the information in this standard can cause overstress to the lifting eyebolts and result in personal injury and/or product damage.

Based on DIN EN 60721-3-2, the tables below specify classifications and limit values which are allowed for our products while they are transported by land, sea or air. Refer to the detailed description of the classifications to take all of the factors which are specified in the particular class into account.

Allowed classes of environmental conditions during transport and handling acc. to DIN EN 60721-3-2

Classification type	Allowed class
Classification of climatic environmental conditions	2K11
Classification of biological environmental conditions	2B1
Classification of chemically active materials	2C1
Classification of mechanically active materials	2S5
Classification of mechanical environmental conditions	2M4

Tab. 5-1: Allowed classes of environmental conditions during transport

For a better overview, some essential environmental influencing variables of the previously mentioned classifications are listed. Unless otherwise specified, the specified values are the values of the particular class. However, Bosch Rexroth reserves the right to adjust these values at any time based on future experiences or changed environmental factors.

Deviating from DIN EN 60721-3-2 permissible ambient conditions

Environmental factor	Unit	Value
Temperature	°C	-25 ... +70 ¹⁾
Relative air humidity	%	5 ... 75 ¹⁾
Absolute air humidity	g/m ³	1 ... 29 ¹⁾

1) Differs from DIN EN 60721-3-2

Tab. 5-2: Deviating permissible storage conditions



Before transport, empty the liquid coolant from the liquid-cooled BA1N energy storage device to avoid frost damage.

5.3 Storage instructions

Storage conditions Generally, Bosch Rexroth recommends storing all components until they are actually installed in the machine as follows:

- in their original packaging
- at a dry and dust-free location
- at room temperature
- free from vibrations and oscillations
- protected against light or direct sunlight

Upon delivery, protective sleeves and covers can be attached to the BA1N energy storage device. They have to remain on the BA1N energy storage device for transport and storage. Do not remove these parts until shortly before assembly.

Based on DIN EN 60721-3-1, the tables below specify classifications and limit values which are allowed for our products while they are stored. Refer to the detailed description of the classifications to take all of the factors which are specified in the particular classification into account.

Allowed classes of ambient conditions during storage acc. to DIN EN 60721-3-1

Classification type	Class
Classification of climatic environmental conditions	1K21
Classification of biological environmental conditions	1B1
Classification of chemically active materials	1C1
Classification of mechanically active materials	1S10
Classification of mechanical environmental conditions	1M11

Tab. 5-3: Allowed classes of environmental conditions during storage

For a better overview, some essential environmental influencing variables of the previously mentioned classifications are listed. Unless otherwise specified, the specified values are the values of the particular class. However, Bosch Rexroth reserves the right to adjust these values at any time based on future experiences or changed environmental factors.

Deviating from DIN EN 60721-3-1 permissible ambient conditions

Environmental factor	Unit	Value
Air temperature	°C	-25 ... +55 ¹⁾
Relative air humidity	%	5 ... 75 ¹⁾
Absolute air humidity	g/m ³	1 ... 29 ¹⁾

1) Differs from DIN EN 60721-3-1

Tab. 5-4: Deviating permissible storage conditions



Before re-storage, empty the liquid coolant from the liquid-cooled BA1N energy storage device to avoid frost damage.

BA1N energy storage device storage times

Irrespective of the storage duration - which can exceed the warranty period of our products - the function is retained provided additional measures are taken into account and carried out during commissioning. However, this does not entail any additional warranty claims.

Storage time	Measures for commissioning
1 ... 5 years	<ul style="list-style-type: none"> Check the electric contacts to verify that they are free from corrosion After a storage period of more than 2 years, the hybrid bearings must be re-lubricated before commissioning (see chapter 7.7.3 "Re-lubrication of the hybrid bearings" on page 32). Let the BA1N energy storage device run in without load for one hour at 800 ... 1000 rpm.
> 5 years	Send the BA1N energy storage device back to the Bosch Rexroth service for overhaul (e.g. bearing or encoder replacement).

Tab. 5-5: Measures before commissioning BA1N energy storage devices that have been stored over a prolonged period of time

Cable and plug connector storage times

Storage time	Measures prior to commissioning
< 1 year	None
1 ... 5 years	⇒Check the electric contacts to verify that they are free from corrosion
> 5 years	⇒If the cable or the cable jacket has porous parts, replace it ⇒Check the electric contacts to verify that they are free from corrosion

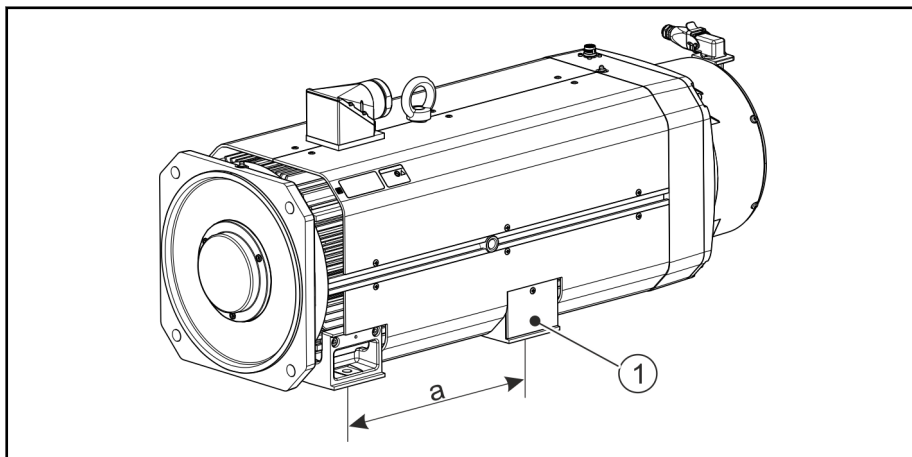
Tab. 5-6: *Measures before commissioning of cables and connectors that have been stored over longer periods of time*

6 Assembly

6.1 Mount energy storage device

6.1.1 Mechanical fastening

BA1N energy storage devices are factory-prepared for foot mounting. The particular dimension drawing contains details on the size and position of the mounting holes. In general, the following assignment is applicable for attaching the motors:



- ① Mounting feet (4 pcs.) for foot mounting
- a Distance dimension

Fig. 6-1: Attachment of BA1N

Size	B35 (foot mounting)			Peak-to-valley height of the mounting surface to the machine
	Hole	Screw (8.8)		
	Ø [mm]	Type	M _A [Nm] at μ _G 0.12	
BA1N16	14	M12	84	Rz32

M_A Tightening torque in newton meter

μ_G Friction coefficient

Tab. 6-1: Mounting holes and tightening torque of the screws

Fastening screws

To attach the energy storage devices properly and safely to the machine, Bosch Rexroth recommends the following screws and washers for attachment.

- Hexagon head screws DIN EN ISO 4014
- or
- Cylinder head screws DIN EN ISO 4762
- and
- Washers DIN EN ISO 7090 - ... - 200 HV



If screws and washers other than the recommended ones are used, the property class of the screws and the hardness class of the washers must be equivalent in order to ensure that the required tightening torques are transmitted (see Fig. 6-1).

6.1.2 Preparing assembly

1. Check the components for visible damage. Damaged components must not be mounted.
2. Ensure that the dimensions and tolerances of the plant are suitable for attachment (for details, see dimension drawing).
3. Ensure that the motor can be assembled in a clean, dry and dust-free environment.
4. Have tools and auxiliary materials ready.
5. Check all components, mounting surfaces and threads for cleanliness.

Record all measures taken in the commissioning log.

6.1.3 Installation

1. Dismount the protective covers attached to the mounting feet to have free access to the mounting holes.
2. Adjust the energy storage device so that the mounting feet match the attachment points of the machine.
3. Firmly connect the energy storage device to the machine (for tightening torques, see Fig.6-1).
4. Reattach the protective covers to the mounting feet.
5. After proper mechanical assembly, carry out the electrical connection.

6.2 Electrical connection

6.2.1 Safety

WARNING

Danger! Electric voltage! Operations in the vicinity of live parts are extremely dangerous.



Any work required on the electric system may be carried out only by skilled electricians. Tools for electricians (VDE tools) are absolutely necessary.

Prior to commencing work:

1. Isolate (even auxiliary circuits).
2. Secure against reactivation.
3. Ensure de-energization.
4. Ground and short-circuit.
5. Cover or shield any adjacent live parts.

WARNING


High electric voltage! Danger to life, risk of injury by electric shock.



- ▶ Any work may only be carried out while the motor is at standstill.
- ▶ Never connect or disconnect plug connectors under load!

NOTICE

Never touch the connection points of electrostatic sensitive devices!

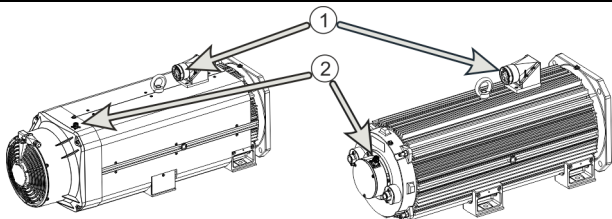
 Mounted components (e.g. PT1000, encoder) can contain parts susceptible to electrical discharge (ESD).

► Observe the ESD safety measures.

6.2.2 Electrical connection

Device connector on the BA1N energy storage device

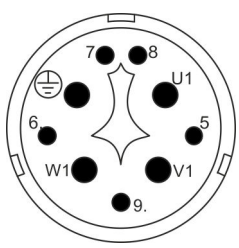
View M58 and M17 device connectors (double cable connection)



Device connector	Power [Ⓞ]	Encoder [Ⓞ]
Connector size	M58	M17
Output direction	A-side / B-side	fixed
Locking	Thread	SpeedCon

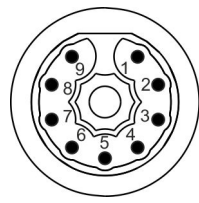
Tab. 6-2: Device connector for power and encoder

Contact arrangement M58, power

Designation	Power connection	
	Ax	Bx
	without brake	
	U1	A1
	V1	A2
	W1	A3
	⊕	PE
	5	TP(+)
	6	TP(-)
	7	n.c.
	8	n.c.
	9	n.c.

Tab. 6-3: Contact arrangement pin assignment M58, power

Contact arrangement M17, encoder

Designation	Encoder connection	
	AS	
	1	VCC_Encoder (11V)
	2	B+
	3	B-
	4	A+
	5	A-
	6	GND_Encoder
	7	EncData+
	8	EncData-
	9	n.c.

Tab. 6-4: Contact arrangement pin assignment M17, encoder

Selection tables for ready-made connection cables

Selection table: BA1N power cable

BA1N16	Controller		Extension
	HCS03.1E-W0100 HCS03.1E-W0150 HMS01.1N-W0110 HMS01.1N-W0150 HMS01.1N-W0210 HMS01.1N-W0300	HCS03.1E-W0210 HCS03.1E-W0280 HCS03.1E-W0350	
Forced ventilation	RL2-066KBB-NN-xxx,x	RL2-067KBB-NN-xxx,x	RL2-563KBB-NN-xxx,x
Water cooling	(RL2-066LBB-NN-xxx,x)*	(RL2-067LBB-NN-xxx,x)*	(RL2-563LBB-NN-xxx,x)*

()* Alternative cable 35 mm² instead of 25 mm²

Tab. 6-5: BA1N power cable

Selection table: BA1N encoder cable

BA1N type	Control units V2	Extension
BA1N16-C3BHA-AS...	RG2-002ABB-NN-xxx,x	RG2-500ABB-NN-xxx,x
BA1N16-C3BHL-AS...		

Tab. 6-6: BA1N encoder cable

6.2.3 Plug-in connector with threaded connection

⚠ WARNING

Damage to persons or property by disconnecting or connecting energized connectors!

- Connect and disconnect connectors only when they are dry and de-energized.
- During operation of the system, all connectors must be securely tightened or locked.

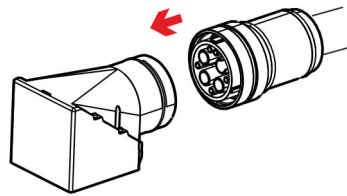
Observe when connecting the flange sockets:

- Protect the flange sockets from external force effect.
- Connect the motor to ready-made connection cables.

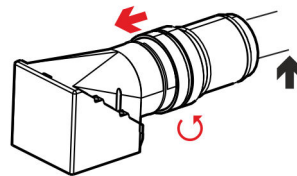
Connect the plug-in connector with the threaded connector M58

Before connecting, please ensure properly measured ready-made connection cables are available. The type, size and cable cross section of the plug-in connector must be adjusted to the motor.

1. Position power connector at thread.



2. Tighten knurled nut "securely", in doing so, retrace cable.



3. Check the firm seat of the connection by short pull on the connector.
4. Secure the cables, that accruing forces due to cable vibrations onto the connector are prevented.

6.2.4 SpeedCon connectors

⚠ WARNING

Damage to persons or property by disconnecting or connecting energized connectors!

- Connect and disconnect connectors only when they are dry and de-energized.
- During operation of the system, all connectors must be securely tightened or locked.

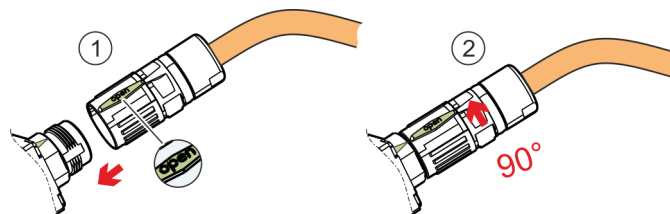
Observe when connecting the flange sockets:

- Protect the flange sockets from external force effect.
- Connect the energy storage device to ready-made connection cables.

Connect SpeedCon connectors

Properly measured ready-made connection cables are available. Plug connector type, size, wire cross section

1. Insert power connector in position "open".
2. "Manually" tighten the power connector with a rotation by approx. 90°.



3. Check the firm seat of the SpeedCon quick lock by short pull on the connector.
4. Secure the cables, that accruing forces due to cable vibrations onto the connector are prevented.

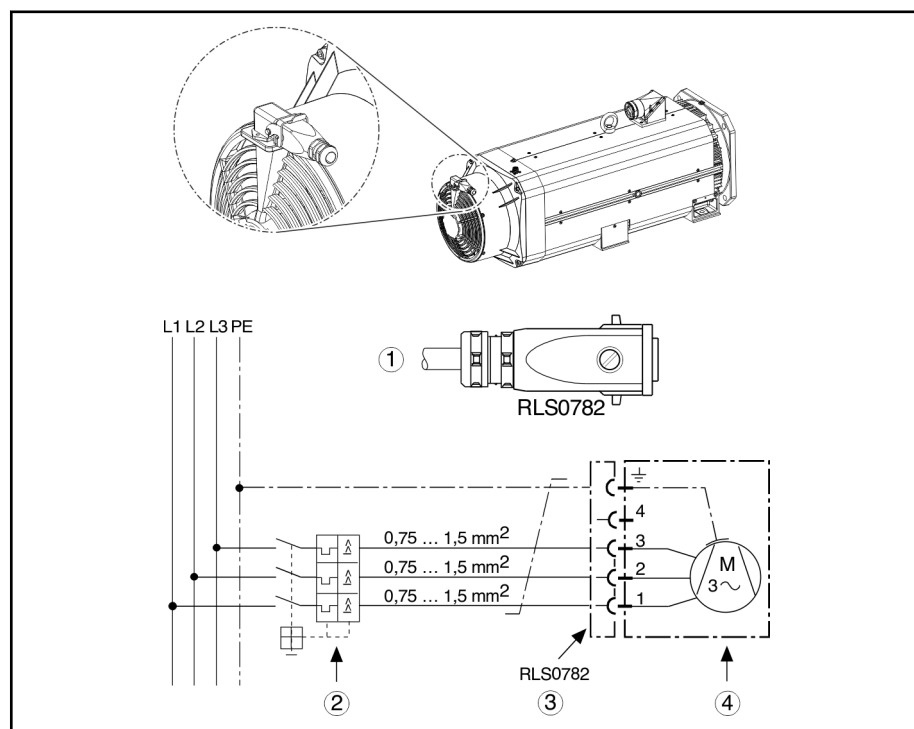
6.2.5 Temperature sensor

The BA1N energy storage device is monitored by a **PT1000** PTC temperature sensor firmly installed into the winding. Connection of the temperature sensor is done via the power connector of the BA1N energy storage device. The pin assignment of the connector is shown in [Fig. 6-3](#).

6.2.6 Cooling

Fan connection

The fan is connected to the supply network via a cable and a motor protective switch and is operated independently of the controller.



- ① Power connection cable diameter $\varnothing 7 \dots 10 \text{ mm}$
- ② Protective switch
- ③ Plug connector
- ④ Fan

Fig. 6-2: Fan connection



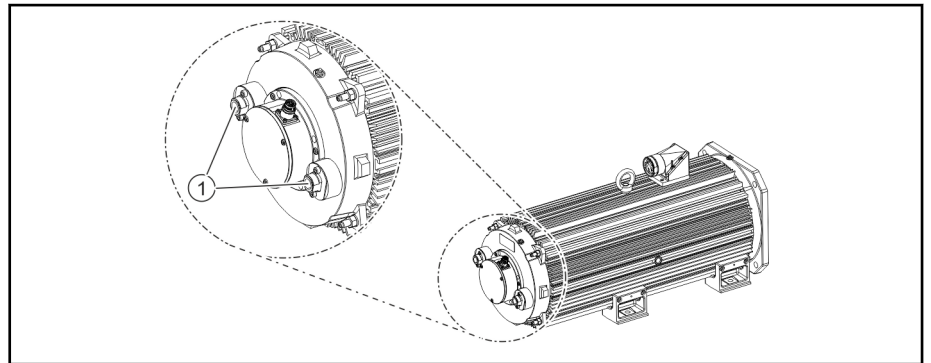
- To connect the fan, the fan connector must be opened and closed.
- Electric connection may only be established by specialized staff. Observe the safety instructions.
- The tightness of the connector housing may not be reduced.
- Motor protective switch and electric fusing are selected by the machine manufacturer. Please observe the regulations in the country of installation.
- The connector for connecting the fan is included in the scope of delivery and is located on the fan.

Coolant connection

Liquid-cooled BA1N energy storage devices must be connected to an external cooling system via the connection threads on the housing.



To supply BA1N energy storage devices with coolant, other installation materials are also required, for example, tubes and mounting clamps (these are not included in the scope of delivery).



① Coolant connection thread

Fig. 6-3: Coolant connection liquid cooling

Coolant connection thread

The connection threads at the housing are covered with factory-provided protective plugs. These protective caps must only be removed immediately before screwing in the coolant lines or the quick coupling in order to prevent dirt from entering the cooling system.



The assignment of the inlet (IN) and outlet (OUT) can be made at will and does not affect the power data of the energy storage device.

The following table gives an overview of the maximum permissible load on the connection threads.

Size BA1N...	Connection thread	max. permissible screw-in depth [mm]	max. permissible tightening range [Nm]
16	G1/2"	18	27 ... 30

Tab. 6-7: Cooling connection thread, permissible tightening torque and screw-in depth

NOTICE

The coolant port threads on the housing may be destroyed by incorrect tightening torques!

The allowed tightening torque of the housing connections may not be exceeded! Exceedance of the tightening torque or screw-in depth may lead to irreversible damage.

The cooling connections on the housing side are provided for coolant connection threads with axial sealing.

Bosch Rexroth recommends to use threaded connections which contain an O-ring for axial sealing of the screw connections.

For example, seals consisting of hemp, teflon tape or cone-shaped screw connections are not considered to be suitable, since this type of seal may

stress the connection thread at the housing to an unreasonably high extent and/or damage it permanently.



The machine manufacturer is responsible for ensuring that the coolant connection is tight and for verifying and accepting the tightness after the energy storage device has been installed.

Additional, regular inspections to ensure proper condition of the coolant connection should be logged in the maintenance schedule of the machine.

Coolant input pressure

The maximum coolant input pressure of **6 bar** applies to all BA1N energy storage devices based on the effective current pressure directly at the coolant connection on the energy storage device.

Please observe that additional screw connections or junctions in the cooling circuit can have a negative influence on the flow and supply pressure of the cooling medium.

7 Commissioning and operation of BA1N energy storage device

7.1 Safety

WARNING

High electric voltage! Danger to life, risk of injury by electric shock!



Life parts are dangerous.

- ▶ Do not open any covers or flange sockets during operation.
- ▶ Do not connect or disconnect plug-connectors and connection clamps.

WARNING

Risk of injury due to rotating parts!



▶ Do not remove covers, machine parts or protective devices during operation.

▶ Do not enter the motion area of the machine. Prevent personnel from accidentally entering the machine's range of motion by using, for example:

- Safety fences, safety screens or protective covers.
- Light barrier

CAUTION

Thermal hazard due to hot surfaces during operation with temperatures over 70 °C.



▶ Do not touch hot surfaces.

▶ Install protection against contact, if necessary.

▶ Make sure that no temperature-sensitive components (cables, electronic components, ...) touch hot surfaces.

7.2 Environmental conditions during operation

7.2.1 Allowed classes

Environmental conditions about stationary weatherproof operation of BA1N are defined according to DIN EN 60721-3-3 in different classes. They are based on long-term experiences and take all influencing variables into account, e.g., air temperature and air humidity.

Based on DIN EN 60721-3-3, some limit values are partially defined in the following, which BA1N is allowed to be exposed to during operation. Refer to the detailed description of the classifications to take all of the factors which are specified in the particular class into account.

Allowed classes of environmental conditions during operation according to DIN EN 60721-3-3.

Classification type	Allowed class
Classification of climatic environmental conditions	3K22
Classification of biological environmental conditions	3B1

Commissioning and operation of BA1N energy storage device

Classification of mechanically active materials	3S6
Classification of mechanical environmental conditions	3M11

Tab. 7-1: Allowed classes of environmental conditions during operation

For a better overview, some essential environmental influencing variables of the previously mentioned classifications are listed. Unless otherwise specified, the specified values are the values of the particular class. However, Bosch Rexroth reserves the right to adjust these values at any time based on future experiences or changed environmental factors.

Deviating from DIN EN 60721-3-3 permissible ambient conditions

Environmental factor	Unit	Value
Temperature	°C	0 ... +40 ¹⁾
Relative air humidity	%	5 ... 95 ¹⁾
Absolute air humidity	g/m ³	1 ... 29 ¹⁾

1) Differs from DIN EN 60721-3-3

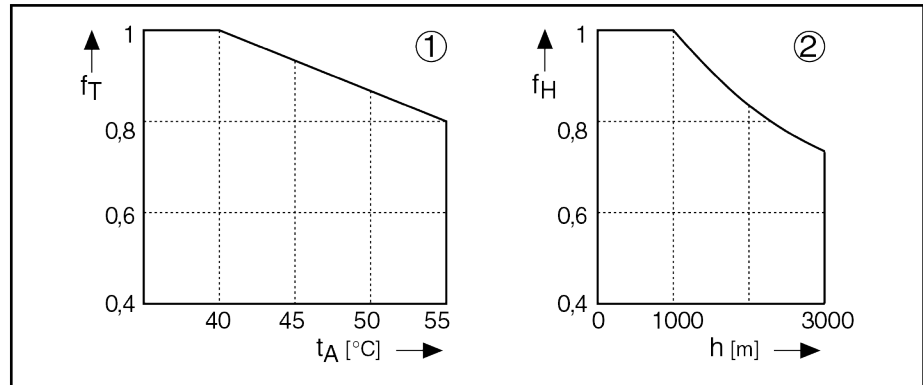
Tab. 7-2: Deviating permissible ambient conditions

7.2.2 Installation altitude

The BA1N energy storage device performance data specified are applicable for

- Installation altitudes from 0 m to 1000 m above sea level
- Ambient temperatures ranging from 0 °C to +40 °C

The performance data of energy storage devices used outside of the above ranges is reduced according to the following figure.



① Usability to capacity, depending on the surrounding air temperature

② Usability to capacity, depending on the installation altitude

f_T Temperature utilization factor

t_A Ambient temperature in degrees Celsius

f_H Height utilization factor

h Installation altitude in meters

Fig. 7-1: Utilization factors

If **either** the ambient temperature **or** the installation altitude is above the nominal data:

1. Multiply the data specified in the selection data by the determined utilization factor.
2. Ensure that the reduced data are not exceeded by your application.

If **both** the ambient temperature **and** the installation altitude exceed the nominal data:

1. Multiply the determined utilization factors f_T and f_H .
2. Multiply the resulting value by the data specified in the selection data.
3. Ensure that the reduced data are not exceeded by your application.

7.3 Commissioning

7.3.1 General

Commissioning of the energy storage device is only possible with further components (drive controller, control unit).

NOTICE

Property damage caused by errors when controlling BA1N! Unclear operating states and product data!

- Do not commission the motors if connections, operating states or product data are unclear or faulty.
- Do not commission the motors if safety devices and monitoring units of the plant are damaged or not in operation.
- Damaged products may not be operated.
- Contact Bosch Rexroth for additional information or support during commissioning.

The following commissioning notes refer to energy storage devices as part of a drive system with drive controller and control unit.

7.3.2 Preparation

1. Make sure you have the documentations of all used products ready.
2. Record all measures taken in the commissioning log.
3. Check the products for damage.
4. Check all mechanical and electrical connections.
5. Activate the safety and monitoring equipment of the system.

7.3.3 Procedure


Once all requirements are met, proceed as follows:

1. Activate the fan or the external cooling system supplying the BA1N energy storage device and check them to verify that they are in a proper condition. Comply with the manufacturer's instructions.
2. Commission the drive system according to the instructions of the corresponding product documentation. The corresponding information can be found in the functional description of the drive controller.
3. Record all measures taken in the commissioning log.



For commissioning of the controllers and control systems, additional steps may be required. Testing the functionality and performance of the systems is not part of the commissioning but is carried out as part of the overall commissioning of the machine. Comply with the information and instructions of the machine manufacturer.

7.4 Operation

During operation, keep the ambient and operation conditions and technical data specified in the project planning manual .

Checks during operation:

- ▶ Pay attention to exceptional noise.
- ▶ Pay attention to increased vibrations.
- ▶ Check the cleanliness of cooling ribs and fan unit.
- ▶ Check the tightness of the coolant connections.
- ▶ Check the monitoring devices and diagnostic / error messages of the controllers.

Decommission the drive when deviations from normal operation exist.

7.5 Shutdown

In case of malfunctions, maintenance measures or to deactivate the BA1N energy storage device, proceed as follows:

1. Comply with the instructions in the machine documentation.
2. Use the machine-side control commands to decelerate the energy storage device to a controlled standstill.
3. Switch off the power and control voltage of the controller.
4. **Only for forced ventilation:** Switch off the motor protection switch for the motor fan.
Only for water cooling: Switch off the external coolant supply.
5. Switch off the main switch of the machine.
6. Secure the machine against accidental movements and against unauthorized operation.
7. Wait until the discharging time of the electrical systems has elapsed and then disconnect all electrical connections.
8. Before disassembling the energy storage device and, if applicable, its fan unit, secure them against dropping or moving and afterwards, disconnect the mechanical connections.
9. Record all measures taken in the commissioning log.

7.6 Disassembly

WARNING

Fatal injury due to errors during the activation of BA1N or work on moving elements!

- Do not work on running or unsecured machines.
- Switch off the controller and the machine and wait until the discharging time of the electrical systems has elapsed before starting troubleshooting.
- Before starting disassembly, secure the machine against unforeseeable movements and against unauthorized operation.
- Before disassembling the energy storage device and its supply lines, secure them against dropping or moving and afterwards, disconnect the mechanical connections.
- Do not disconnect coolant lines as long as they are still under pressure.

1. Comply with the instructions in the machine documentation.
2. Comply with the safety instructions and carry out all steps as described above in section "Deactivation".
3. Before disassembling the energy storage device and its supply lines, secure them against dropping or moving and afterwards, disconnect the mechanical connections. Discharge the coolant ducts at the water-cooled energy storage device.
4. Remove the energy storage device from the machine and store it properly.
5. Document all executed measures in the commissioning report and the machine maintenance plan.

7.7 Maintenance

7.7.1 General

Energy storage devices of the BA1N series require very little maintenance as long as they are operated under the specified operating conditions and during their service life. Only the re-lubrication intervals of the hybrid bearings must be observed.

Operation under very unfavorable conditions can, however, lead to restrictions in availability.

- Increase availability with regular preventive maintenance measures. Comply with the machine manufacturer's instructions in the machine maintenance plan and the maintenance measures described below.
- Record all maintenance measures in the machine maintenance plan.

7.7.2 Measures

⚠ WARNING

Risk of injury due to moving elements! Risk of injury due to hot surfaces!

- Do not carry out any maintenance measures while the machine is running.
- Before starting maintenance, switch off the controller and the machine and wait until the discharge time of the electrical systems has elapsed.
- While carrying out maintenance work, secure the machine such that it cannot restart or be used by unauthorized persons.
- Do not work on hot surfaces.

Bosch Rexroth recommends the following maintenance measures, based on the maintenance plan of the machine manufacturer:

Measure	Interval
For water-cooled energy storage devices: Check the cooling system for proper functioning.	According to the specifications in the machine maintenance plan, but at least every 1000 operating hours.
For force-ventilated energy storage devices: Check the fan and the air circulation for proper functioning.	According to the specifications in the machine maintenance plan, but at least every 1000 operating hours.

Measure	Interval
Check the mechanical and electrical connections.	According to the specifications in the machine maintenance plan, but at least every 1000 operating hours.
Check the machine for smooth running, vibrations and bearing noise.	According to the specifications in the machine maintenance plan, but at least every 1000 operating hours.
Remove dust, chips and other dirt from the housing, cooling fins and the connections.	Depending on the degree of soiling, but after one operating year at the latest.

Tab. 7-3: Maintenance measures

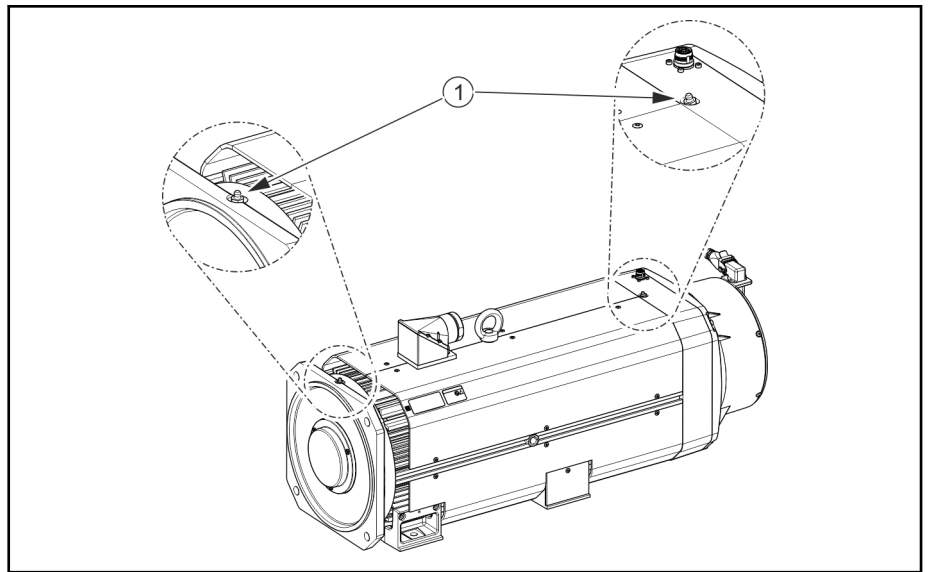
7.7.3 Re-lubrication of the hybrid bearings

The average continuous speed determines the service life or the interval length until the required re-lubrication. However, the number of re-lubrications is limited due to the size of the grease collecting chambers on the bearings.

A lubrication nipple is located on both sides of the energy storage device for re-lubrication of the bearings (see Fig. 7-2). In order to ensure that no contamination penetrates into the contact zones of the bearing, the lubrication nipples must be cleaned before each use at all costs.



- The amount of lubricating grease per re-lubrication must be between 22 and 25 g.
Before re-lubrication, determine with which stroke rate the used grease gun reaches the permitted grease quantity in order not to exceed this quantity.
- The grease must be pumped in slowly and carefully during operation at a low speed of ≤ 100 rpm so that the bearing is not overheated due to re-lubrication.
- Re-lubrication of the bearings must only be carried out 4 times.
- If the end of the available operating hours of the last re-lubrication interval has been reached, no further re-lubrication may be carried out. In this case, remanufacturing must be carried out by Bosch Rexroth.



① Lubrication nipples

Fig. 7-2: Lubrication nipples using the example of a BA1N energy storage device in force-ventilated version

Further data on re-lubrication, e.g. the permitted grease, can be found on a re-lubrication instruction sign next to the lubrication nipples on the energy storage device.

①	● Bearing DE	C6213 C3
②	● Bearing NDE	C6213 C3
③	● Continuous speed	4000 min ⁻¹ 5000 min ⁻¹ 6000 min ⁻¹
③	● Relubrication intervall	8000 h 7000 h 5000h
④	● Quantity of grease	25 g
⑤	● Grease	Klüber Asonic HQ72-102 Klüberquiet BQH 72-102
Relubrication during operation only / operation speed < 100 min ⁻¹		

- ① designation of the bearings
- ② average speed
- ③ number of operating hours until re-lubrication
- ④ grease quantity
- ⑤ grease designation

Fig. 7-3: Information sign about re-lubrication

7.7.4 Fan

General

There may be cases when the fan unit must be dismantled for maintenance measures or troubleshooting.

- This work may only be carried out by skilled personnel.
- When dismantling the fan unit, keep all strips, screws and nuts with which it is attached.

In parts, the housings of the fan units consist of several screwed elements. Only unscrew the screws that are marked as such.

⚠ CAUTION

Immediately after the energy storage device has been operated, high temperatures must be expected on the fan housing! Risk of burns!

- Ensure adequate contact protection and wait until the energy storage device has cooled down.
- Ensure that there are no combustible and flammable materials in the environment of the hot fan.

⚠ CAUTION

Risk of injuries! While voltage is applied, the energy storage device restarts automatically, e.g. after a power failure.

- Do not stay within the danger zone of the device.
- When working on the device, switch off the line voltage and ensure that it cannot be reactivated.
- Wait until the device has come to a standstill.

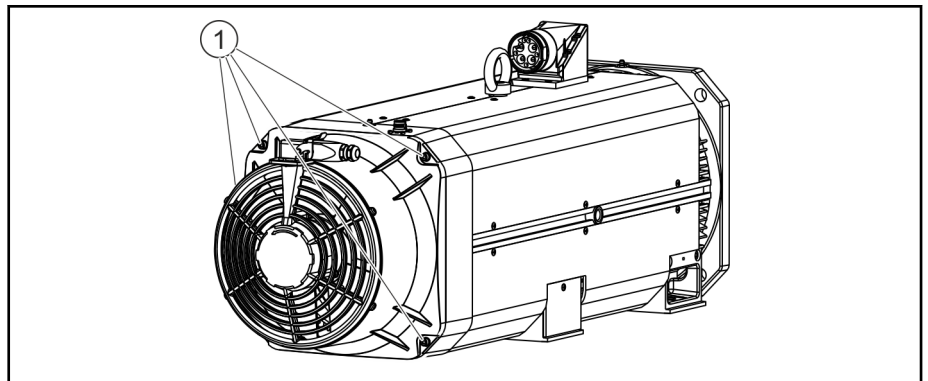
General fan maintenance steps:

1. Switch off the machine and disconnect the electrical fan connection.
2. Before unscrewing mounting screws, secure the fan unit such that it cannot drop and carefully remove the fan unit from the energy storage device.
3. Reattach the fan unit after having cleaned or visually inspected the motor or after troubleshooting (see guidelines below). Protect all mounting screws with LOCTITE 243 (screwlock) and reestablish all connections.

When attaching the power supply connector, particularly ensure the following:

There is a seal between the connector and the plug on the fan. Ensure that the cable cannot put the plug under tensile load in order to avoid inadequate tightness of this plug connection. If necessary, attach the connecting cable in flush direction with the plug and provide strain relief at a close distance.

4. Check the fan and the air circulation for proper functioning.
5. Record all maintenance measures in the machine maintenance plan.



① Mounting screws (4 pcs.)

Fig. 7-4: Fan attachment

Required visual inspections of the fan

Inspection	Interval
Line insulation	As specified in the machine maintenance schedule, however, at least every 6 months
Attachment of connecting lines	
Lining of contact protection	
Fan for damage	
Attachment of fan	

Tab. 7-4: Visual fan inspection

Notes on troubleshooting

Failure/fault	Possible cause	Possible action
Fan motor not running	Mechanical blockage	Switch off and de-energize the energy storage device and remove the mechanical blockage
	Wrong line voltage	Check the line voltage and reestablish voltage supply.
	Faulty connection	Correct the connection.
	Motor winding interrupted	Exchange the device
Impeller running untrue	Imbalance of rotating parts	Clean the device. If there is still an imbalance after cleaning, exchange the device.
Overtemperature of fan motor	Ambient temperature too high.	If possible, reduce the surrounding air temperature.
	Unallowed operating point	Check the operating point
	Inadequate cooling	Improve the cooling system
Please contact your Rexroth sales partner in case of other failures.		

Tab. 7-5: Notes on troubleshooting

7.7.5 Coolant supply

It may become necessary to disassemble the coolant supply for maintenance measures or troubleshooting.

- This work may only be carried out by skilled personnel.
- Do not carry out any maintenance measures while the machine is running. Observe the safety instructions.
- Protect open supply lines and connections against ingress of dirt.

7.8 Troubleshooting

7.8.1 General

⚠ WARNING

Risk of injury due to moving elements! Risk of injury due to hot surfaces!

- Do not carry out any maintenance measures while the machine is running.
- Switch off the controller and the machine and wait until the discharging time of the electrical systems has elapsed before starting troubleshooting.
- While carrying out maintenance work, secure the machine such that it cannot restart or be used by unauthorized persons.
- Do not work on hot surfaces.

Possible causes for the malfunctioning of BA1N energy storage device can be limited to the following areas:

- Cooling circuit or fan function and temperature behavior
- Internal temperature sensor
- Encoder or encoder connection
- Mechanical damage of the BA1N energy storage device
- Mechanical connection to machine

The encoder connection and the temperature sensor are monitored by the controller or the control unit; corresponding diagnostic messages are displayed. Comply with the instructions in the corresponding documentation.

The sections below describe examples of some fault states along with possible causes. This list is not exhaustive.

7.8.2 Temperature on the housing is too high

State The housing temperature of the energy storage device rises to unusually high values.

NOTICE

Damage to the energy storage device or machine by restarting after excessive temperature!

- Liquid-cooled energy storage devices may not be restarted or supplied with cold coolant immediately after a failure of the cooling system or an increase in winding temperature
- Before restarting the energy storage device, wait until the surface temperature has dropped to approx. 40 °C.

- Possible causes**
1. Failure or fault in the fan or cooling system.
 2. Original operating cycle has been changed.
 3. The original motor parameters have been changed.
 4. Hybrid bearings are worn or defective.

- Measures for**
1. Check the fan function of **force-ventilated versions**. Clean as required. Contact Bosch Rexroth Service in case of a failure.

Check the cooling system of **water-cooled versions**. Clean or rinse the cooling circuit as required. Contact the machine manufacturer in the case of a cooling system failure.

2. Check the sizing of the drive for changed requirements. Stop operation in case of overload. Risk of damage!
3. Restore the original parameters. Check the sizing of the drive if requirements have been changed.
4. Contact the machine manufacturer.

7.8.3 High energy storage device values, but housing temperature is normal

State	The diagnostic system of the controller shows unusually high winding temperature values via display or operator software. However, the temperature of the housing is normal.
Possible causes	<ol style="list-style-type: none"> 1. Wiring error or cable break in sensor cable. 2. Diagnostic system defective. 3. Check the wiring and connection of the temperature sensor according to the interconnection diagram. 4. Failure temperature sensor.
Measures for	<ol style="list-style-type: none"> 1. Check the resistance value of the temperature sensor using a multimeter. 2. Check the diagnostic system at the controller or the control unit. 3. Set the measuring device to resistance measurement mode. <ul style="list-style-type: none"> • Shut down the system and wait until the discharging time has elapsed. Disconnect the temperature sensor from the controller and connect the wire pair to the measuring device (this also checks the sensor line). 4. Contact the Rexroth service department.

7.8.4 Energy storage device or machine table generates vibrations

State	Vibrations can be heard or felt at the energy storage device.
Possible causes	<ol style="list-style-type: none"> 1. Driven machine elements are insufficiently coupled or damaged. 2. Hybrid bearings are worn or defective. Available bearing lifetime or grease lifetime has elapsed. 3. Mechanical fastening has come loose. 4. Drive system is instable from a control point of view.
Countermeasures	<ol style="list-style-type: none"> 1. Contact the machine manufacturer. 2. Contact the machine manufacturer. 3. Check the mechanical connection. Do not continue to use damaged parts. Contact the machine manufacturer. 4. Check the parameterization of the drive system (energy storage device and encoder data). Comply with the instructions in the controller documentations.

8 Maintenance and repair

8.1 Cleaning and servicing

WARNING

Danger! Electric voltage! Operations in the vicinity of live parts are extremely dangerous.



Any work required on the electric system may be carried out only by skilled electricians. Tools for electricians (VDE tools) are absolutely necessary.

Prior to commencing work:

1. Isolate (even auxiliary circuits).
2. Secure against reactivation.
3. Ensure de-energization.
4. Ground and short-circuit.
5. Cover or shield any adjacent live parts.

WARNING

Personal and material damage during maintenance work in operation!



- ▶ Never do any maintenance work on life machines.
- ▶ While carrying out maintenance work, secure the machine such that it cannot restart or be used by unauthorized persons.

CAUTION

Hot surfaces with temperatures over 70 °C may cause burns!



- ▶ Before working, let the energy storage device cool down.
- ▶ Wear safety gloves.
- ▶ Do not work on hot surfaces.

Energy storage device

Excessive dirt, chips or dust can negatively influence the energy storage device functions. In extreme cases lead to loss. Clean the cooling fins of the energy storage device at regular intervals (after one year at the latest) to reach a sufficiently high heat emission surface. If the cooling fins are partially covered with dirt, sufficient heat dissipation via the ambient air is no longer ensured.

Connection cable

WARNING

Death by electrocution possible due to live parts!



- ▶ Immediately put the machine out of operation and replace defective connection cables.
- ▶ Never do any provisional repairs on the connection cables.

- Check in regular distances the connection cables on damage and replace them if necessary.
- Check optionally existing drag chains (Drag chains) on defects.

- Check the protective conductor connection for proper condition and firm seating at regular intervals. Replace it, if necessary.

8.2 Service and support

Our service helpdesk at our headquarters in Lohr, Germany, will assist you with all kinds of enquiries. Out of helpdesk hours please contact our German service department directly.

	Helpdesk	Service Hotline Germany	Service Hotline Worldwide
Time¹⁾	Mon. - Fri. 7:00 a.m. - 6:00 p.m. CET	Mon. - Fri. 6:00 p.m. - 7:00 a.m. CET Sat. - Sun. 0:00 a.m. - 12:00 p.m. CET	Outwith Germany please contact your local sales/service office in your area first. For hotline numbers refer to the sales office addresses on the Internet.
Phone	+49 (0) 9352 40 5060	+49 (0) 171 333 88 26 or +49 (0) 172 660 04 06	
Fax	+49 (0) 9352 18 4941	–	
Email	service.svc@boschrexroth.de	–	
Internet	http://www.boschrexroth.com You will also find additional notes regarding service, maintenance (e.g. delivery addresses) and training.		

¹⁾ Central European Time (CET)

Preparing information For quick and efficient help please have the following information ready:


- Detailed description of the fault and the circumstances
- Information on the type plate of the affected products, especially type codes and serial numbers.
- Your phone, fax numbers and email address so we can contact you in case of questions.

9 Environmental protection and disposal

9.1 Environmental protection

Production processes	The products are manufactured in energy- and resource-optimized production processes which allow re-using and recycling the resulting waste. We regularly try to replace pollutant-loaded raw materials and supplies by more environment-friendly alternatives.														
No release of hazardous substances	Our products do not contain any hazardous substances which may be released in case of appropriate use. Normally, our products will not have any negative influences on the environment.														
Significant components	Significant components of our products are: <table> <tr> <td>Electronic devices</td> <td>Motors</td> </tr> <tr> <td>• Steel</td> <td>• Steel / Stainless steel</td> </tr> <tr> <td>• Aluminum</td> <td>• Aluminum</td> </tr> <tr> <td>• Copper</td> <td>• Copper</td> </tr> <tr> <td>• Plastics</td> <td>• Brass</td> </tr> <tr> <td>• Electronic components</td> <td>• Magnetic materials</td> </tr> <tr> <td></td> <td>• Elektronic components</td> </tr> </table>	Electronic devices	Motors	• Steel	• Steel / Stainless steel	• Aluminum	• Aluminum	• Copper	• Copper	• Plastics	• Brass	• Electronic components	• Magnetic materials		• Elektronic components
Electronic devices	Motors														
• Steel	• Steel / Stainless steel														
• Aluminum	• Aluminum														
• Copper	• Copper														
• Plastics	• Brass														
• Electronic components	• Magnetic materials														
	• Elektronic components														


9.2 Disposal

Return of products	<p>Our products can be returned to us for disposal free of charge. However, this requires that the products be free from oil, grease or other dirt.</p> <p>Furthermore, the products returned for disposal may not contain any undue foreign material or foreign components.</p> <p>Deliver the products "free domicile" to the following address:</p> <p style="text-align: center;">Bosch Rexroth AG Electric Drives and Controls Buergermeister-Dr.-Nebel-Straße 2 97816 Lohr am Main, Germany</p>
Packaging	<p>Packaging materials consist of cardboard, wood and polystyrene They can be recycled anywhere without any problem.</p> <p>For ecological reasons, please refrain from returning the empty packages to us.</p>
Batteries and accumulators	<p>Batteries and accumulators can be labeled with this symbol.</p> <p> The symbol indicating "separate collection" for all batteries and accumulators is the crossed-out wheeled bin.</p> <p>End users in the EU are legally bound to return used batteries and accumulators. Outside the validity of the EU Directive 2006/66/EC, the particularly applicable regulations must be followed.</p> <p>Batteries and accumulators can contain hazardous substances which can harm the environment or people's health when improperly stored or disposed of.</p> <p>After use, the batteries or accumulators contained in Rexroth products must be properly disposed of according to the country-specific collection systems.</p>

- Recycling** Most of the products can be recycled due to their high content of metal. In order to recycle the metal in the best possible way, the products must be disassembled into individual assemblies.
- Metals contained in electric and electronic assemblies can also be recycled by means of special separation processes.
- Plastic parts of the products may contain flame retardants. These plastic parts are labeled according to EN ISO 1043. They have to be recycled separately or disposed of according to the applicable legal provisions.

10 Appendix

10.1 Declaration of conformity



EU-Konformitätserklärung - Original

Dok.-Nr.: DCTC-30319-002
Datum: 2019-07-15

nach Maschinenrichtlinie 2006/42/EG
 nach Niederspannungsrichtlinie 2014/35/EU
 nach EMV-Richtlinie 2014/30/EU
 nach ATEX-Richtlinie 2014/34/EU

Hiermit erklärt der Hersteller,
 Bosch Rexroth AG
 Bürgermeister-Dr.-Nebel-Straße 2
 97816 Lohr am Main / Germany,

dass die nachstehenden Produkte

Bezeichnung: 3-PHASE INDUCTION MOTOR

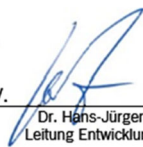
Baureihen: BA1N16...

Handelsbezeichnung: Rexroth
 Ab Herstellungsdatum: 2019-07-15

in Übereinstimmung mit den oben genannten EU-Richtlinien entwickelt, konstruiert und gefertigt wurden.
 Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.

Angewandte harmonisierte Normen:

Norm	Titel	Ausgabe
EN 60034-1 (IEC 60034-1)	Drehende elektrische Maschinen – Teil 1: Bemessung und Betriebsverhalten	2010 + Cor.:2010 (2010, modifiziert)
EN 60034-5 (IEC 60034-5)	Drehende elektrische Maschinen – Teil 5: Schutzarten aufgrund der Gesamtkonstruktion von drehenden elektrischen Maschinen (IP-Code) –Einteilung	2001 + A1:2007 (2000 + Corrigendum 2001 + A1:2006)

Lohr am Main , den 2019-07-15 ppa.  i.V. 
 Ort Datum Joachim Hennig Dr. Hans-Jürgen Wehner
 Werkleitung LOP2 Leitung Entwicklung Motoren


Änderungen im Inhalt der EU-Konformitätserklärung sind vorbehalten. Derzeit gültige Ausgabe auf Anfrage.

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DCTC-30319-002 KOE N DE 2019-07-15.docx

Fig. 10-1: BA1N Declaration of conformity (origin)



EU declaration of conformity

(Translation of the original declaration of conformity)

in accordance with Machinery Directive 2006/42/EC
 in accordance with Low Voltage Directive 2014/35/EU
 in accordance with EMC Directive 2014/30/EU
 in accordance with ATEX Directive 2014/34/EU

The manufacturer,
 Bosch Rexroth AG
 Bürgermeister-Dr.-Nebel-Straße 2
 97816 Lohr am Main / Germany

hereby declares that the products below

Name: 3-PHASE INDUCTION MOTOR

Series: BA1N16...

Trade name: Rexroth
 From the date of manufacture: 2019-07-15

were developed, designed and manufactured in compliance with the above-mentioned EU directives.
 This declaration of conformity is issued under the sole responsibility of the manufacturer.

Harmonized Standards applied:

Standard	Title	Edition
EN 60034-1 (IEC 60034-1)	Rotating electrical machines – Part 1: Rating and performance	2010 + Cor.:2010 (2010, modified)
EN 60034-5 (IEC 60034-5)	Rotating electrical machines – Part 5: Degrees of protection provided by integral design of rotating electrical machines (IP code) - Classification	2001 + A1:2007 (2000 + Corrigendum 2001 + A1:2006)

Doc. No.: DCTC-30319-002

Date: 2019-07-15

Place/date/signature as indicated in the original declaration.

We reserve the right to make changes to the content of the EU Declaration of Conformity. Current issue on request.

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DCTC-30319-002 KOE N EN 2019-07-15.docx

Fig. 10-2: BA1N Declaration of conformity (translation)

The declaration of conformity is also available with signatures in English. In the case of access to the Indranet of Bosch Rexroth, you can download the document number **DCTC-30319-002**. Otherwise, refer to your responsible sales partner.

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R911393267