

KSM02 Motor-Integrated Servo Drives

Operation in Potentially Explosive Atmospheres
ATEX Directive 2014/34/EU

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D Deutsch	USA English	F Français
⚠ WARNING Lebensgefahr bei Nichtbeachtung der nachstehenden Sicherheitshinweise! Nehmen Sie die Produkte erst dann in Betrieb, nachdem Sie die mit dem Produkt gelieferten Unterlagen und Sicherheitshinweise vollständig durchgelesen, verstanden und beachtet haben. Sollten Ihnen keine Unterlagen in Ihrer Landessprache vorliegen, wenden Sie sich an Ihren zuständigen Rexroth-Vertriebspartner. Nur qualifiziertes Personal darf an Antriebskomponenten arbeiten. Nähere Erläuterungen zu den Sicherheitshinweisen entnehmen Sie Kapitel 1 dieser Dokumentation.	⚠ WARNING Danger to life in case of non-compliance with the below-mentioned safety instructions! 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. If no documents in your language were supplied, please consult your Rexroth sales partner. Only qualified persons may work with drive components. For detailed explanations on the safety instructions, see chapter 1 of this documentation.	⚠ AVERTISSEMENT Danger de mort en cas de non-respect des consignes de sécurité figurant ci-après ! 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. Si vous ne disposez pas de la documentation dans votre langue, merci de consulter votre partenaire Rexroth. Seul un personnel qualifié est autorisé à travailler sur les composants d'entraînement. Vous trouverez des explications plus détaillées relatives aux consignes de sécurité au chapitre 1 de la présente documentation.
⚠ WARNING Hohe elektrische Spannung! Lebensgefahr durch elektrischen Schlag! Betreiben Sie Antriebskomponenten nur mit fest installiertem Schutzleiter. Schalten Sie vor Zugriff auf Antriebskomponenten die Spannungsversorgung aus. Beachten Sie die Entladezeiten von Kondensatoren.	⚠ WARNING High electrical voltage! Danger to life by electric shock! Only operate drive components with a permanently installed equipment grounding conductor. Disconnect the power supply before accessing drive components. Observe the discharge times of the capacitors.	⚠ AVERTISSEMENT Tensions électriques élevées ! Danger de mort par électrocution ! N'exploitez les composants d'entraînement que si un conducteur de protection est installé de manière permanente. Avant d'intervenir sur les composants d'entraînement, coupez toujours la tension d'alimentation. Tenez compte des délais de décharge de condensateurs.
⚠ WARNING Gefahrbringende Bewegungen! Lebensgefahr! Halten Sie sich nicht im Bewegungsbereich von Maschinen und Maschinenteilen auf. Verhindern Sie den unbeabsichtigten Zutritt für Personen. Bringen Sie vor dem Zugriff oder Zutritt in den Gefahrenbereich die Antriebe sicher zum Stillstand.	⚠ WARNING Dangerous movements! Danger to life! Keep free and clear of the ranges of motion of machines and moving machine parts. Prevent personnel from accidentally entering the range of motion of machines. Make sure that the drives are brought to safe standstill before accessing or entering the danger zone.	⚠ AVERTISSEMENT Mouvements entraînant une situation dangereuse ! Danger de mort ! Ne séjournez pas dans la zone de mouvement de machines et de composants de machines. Évitez tout accès accidentel de personnes. Avant toute intervention ou tout accès dans la zone de danger, assurez-vous de l'arrêt préalable de tous les entraînements.
⚠ WARNING Elektromagnetische / magnetische Felder! Gesundheitsgefahr für Personen mit Herzschrittmachern, metallischen Implantaten oder Hörgeräten! Zutritt zu Bereichen, in denen Antriebskomponenten montiert und betrieben werden, ist für oben genannten Personen untersagt bzw. nur nach Rücksprache mit einem Arzt erlaubt.	⚠ WARNING Electromagnetic / magnetic fields! Health hazard for persons with heart pacemakers, metal implants or hearing aids! 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.	⚠ AVERTISSEMENT Champs électromagnétiques / magnétiques ! Risque pour la santé des porteurs de stimulateurs cardiaques, d'implants métalliques et d'appareils auditifs ! 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.
⚠ VORSICHT Heiße Oberflächen (> 60 °C)! Verbrennungsgefahr! Vermeiden Sie das Berühren von metallischen Oberflächen (z. B. Kühlkörpern). Abkühlzeit der Antriebskomponenten einhalten (mind. 15 Minuten).	⚠ CAUTION Hot surfaces (> 60 °C [140 °F])! Risk of burns! 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).	⚠ ATTENTION Surfaces chaudes (> 60 °C)! Risque de brûlure ! Évitez de toucher des surfaces métalliques (p. ex. dissipateurs thermiques). Respectez le délai de refroidissement des composants d'entraînement (au moins 15 minutes).

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

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

E Español	P Português	I Italiano
⚠ ADVERTENCIA ¡Campos electromagnéticos/magnéticos! ¡Peligro para la salud de las personas con marcapasos, implantes metálicos o audífonos! 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.	⚠ ATENÇÃO Campos eletromagnéticos / magnéticos! Perigo de saúde para pessoas com marcapassos, implantes metálicos ou aparelhos auditivos! 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.	⚠ AVVERTENZA Campi elettromagnetici / magnetici! Pericolo per la salute delle persone portatrici di pacemaker, protesi metalliche o apparecchi acustici! 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.
⚠ ATENCIÓN ¡Superficies calientes (> 60 °C)! ¡Peligro de quemaduras! 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).	⚠ CUIDADO Superfícies quentes (> 60 °C)! Perigo de queimaduras! Evite tocar superfícies metálicas (p. ex. radiadores). Respeite o tempo de arrefecimento dos componentes de acionamento (mín. 15 minutos).	⚠ ATTENZIONE Superfici bollenti (> 60 °C)! Pericolo di ustioni! Evitare il contatto con superfici metalliche (ad es. dissipatori di calore). Rispettare i tempi di raffreddamento dei componenti di comando (almeno 15 minuti).
⚠ ATENCIÓN ¡Manipulación inadecuada en el transporte y montaje! ¡Peligro de lesiones! Utilice dispositivos de montaje y de transporte adecuados. Utilice herramientas adecuadas y equipo de protección personal.	⚠ CUIDADO Manejo incorreto no transporte e montagem! Perigo de ferimentos! Utilize dispositivos de montagem e de transporte adequados. Utilize ferramentas e equipamento de proteção individual adequados.	⚠ ATTENZIONE Manipolazione inappropriata durante il trasporto e il montaggio! Pericolo di lesioni! Utilizzare dispositivi di montaggio e trasporto adatti. Utilizzare attrezzi adatti ed equipaggiamento di protezione personale.
⚠ ATENCIÓN ¡Manejo inadecuado de las pilas! ¡Peligro de lesiones! No trate de reactivar o cargar pilas descargadas (peligro de explosión y cauterización). No desarme ni dañe las pilas. No tire las pilas al fuego.	⚠ CUIDADO Manejo incorreto de baterias! Perigo de ferimentos! Não tente reativar nem carregar baterias vazias (perigo de explosão e de queimaduras com ácido). Não desmonte nem danifique as baterias. Não deite as baterias no fogo.	⚠ ATTENZIONE Utilizzo inappropriato delle batterie! Pericolo di lesioni! Non tentare di riattivare o ricaricare batterie scariche (pericolo di esplosione e corrosione). Non scomporre o danneggiare le batterie. Non gettare le batterie nel fuoco.

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

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

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

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

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

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

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

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

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

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

CN 中文
⚠ 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！ 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。 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。 只允许有资格人员对驱动器部件进行操作。 安全说明的详细解释在本文档的第一章。
⚠ 警告 高电压！电击导致生命危险！ 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。 在接触驱动器部件前先将驱动器部件断电。 确保电容放电时间。
⚠ 警告 危险运动！生命危险！ 保证设备的运动区域内和移动部件周围无障碍物。 防止人员意外进入设备运动区域内。 在接近或进入危险区域之前，确保传动设备安全停止。
⚠ 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！ 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。
⚠ 小心 热表面（大于 60 度）！灼伤风险！ 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）。
⚠ 小心 安装和运输不当导致受伤危险！当心受伤！ 使用适当的运输和安装设备。 使用适合的工具及用适当的防护设备。
⚠ 小心 电池操作不当！受伤风险！ 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）。 请勿拆解或损坏电池。请勿将电池投入明火中。

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1 Operating instructions

1.1 Introduction

The positions 35/36 of the type code show whether motor-integrated servo drives KSM02 comply with ATEX Directive 2014/34/EU:

- **AT:** ATEX design, Multi-Ethernet output coupling (2 × M12)
- **AN:** ATEX design
- **AE:** ATEX design, external master communication Multi-Ethernet (2 × M12)

The following products are available:

- **KSM02.1B-041C-□□□-□□-□□□-□□-□□-□□-AT-□□**
- **KSM02.1B-041C-□□□-□□-□□□-□□-□□-□□-AN-□□**
- **KSM02.1B-041C-□□□-□□-□□□-□□-□□-□□-AE-□□**

These operating instructions provide specific information regarding the assembly, commissioning, operation, disassembly and maintenance of these products in ATEX design.

The products may only be commissioned in an explosive environment, if the following aspects have been fulfilled:

- All the following notes regarding commissioning and application, as contained in the Project Planning Manual "DOK-INDRV*-KCU02+KSM02-PR□□-□□-P", have been understood and put into practice.
- The overall system, consisting of motor-integrated servo drives, cables and accessories, was inspected, accepted and logged according to the requirements of the relevant standards.



These operating instructions form a part of the product, and the user must keep them over the entire operation and lifetime of the product. If the product is passed on or sold, these operating instructions must be passed on to each new owner or user.

If this product is operated and used in another country or another linguistic region, the product may only be passed on if a translation of the Operating Instructions is supplied together with the product in the language of the country or linguistic region in which the product is used.

In the texts below, "product" stands for "motor-integrated servo drive KSM02".

1.2 Safety instructions

Qualified persons

The responsibilities for the safety of persons involved in or affected by a task must comply with the national legislation.

All persons working on, with or in the vicinity of an electrical system must be informed of the relevant safety requirements, safety guidelines and internal instructions (source: EN 50110-1).

Taking the relevant national regulations into account, ATEX products may be commissioned only by a skilled electrician competent in the field of explosion protection.

In terms of this application documentation, qualified persons are those persons who are familiar with the installation, mounting, commissioning and operation of the components of the electric drive and control system, as well as with the hazards this implies, and who possess the qualifications their work requires. To comply with these qualifications, it is necessary, among other things,

- 1) to be trained, instructed or authorized to switch electric circuits and devices safely on and off, to ground them and to mark them
- 2) to be trained or instructed to maintain and use adequate safety equipment
- 3) to attend a course of instruction in first aid

Warning symbols

In order to point to specific risks that may occur during the operation of the products, the following warning symbols and signal words are used in these Operating Instructions. The signal words describe the hazard classification. The hazard classification identifies the risk that exists if the safety information is not observed. In addition to the safety instructions specified here, please also observe the general safety instructions in the Project Planning Manual.

DANGER

Death or serious injury **will** occur.

WARNING

Death or serious injury **could** occur.

CAUTION

Minor or moderate injury could occur.

NOTICE

Property damage could occur.

1.3 Intended use

The products described here are components for Equipment Group II Category 3D, ATEX Directive 2014/34/EU, and are only allowed to be used in zone 22 or NE (negligible extent).

1.4 Application conditions, ATEX Equipment Group II, Category 3D

DANGER

Explosion hazard and danger to life or substantial property damage!

All **components and accessories** used must comply with the requirements of explosion protection in accordance with the Directive 2014/34/EU.

The **application conditions** mentioned in this documentation must be taken into consideration for project planning and complied with in any event during operation.

Defective ATEX products must be repaired in the manufacturer's factory or by the authorized Bosch Rexroth Service.

Specific conditions with test number

The explosion protection marking specified in the declaration of conformity and on the type plate is marked with an "X" at the end. This marking refers to specific conditions which have to be observed with regard to the safety and medical requirements specified in the underlying standards. Please observe the following specific conditions for safe operation of the products in the installation:

- The allowed ambient temperature range is 0 ... 40 °C.
- Strain relief for cables available after approx. 30 cm from the connection point
- HAS10.1-001 accessory (fixing clip for hybrid cable connectors) fitted to product
- It is not allowed to exceed the specified tensile stress values of the cables connected using connectors. The maximum allowed values are determined as per the following relation.

$$F_{Tmax}[N] = d_{Cable}[mm] \times 5$$

F_{Tmax} : Cable connection tensile stress (maximum value)

d_{Cable} : Cable outer jacket diameter (maximum value)

The following values apply to ready-made Rexroth cables for the **maximum tensile stress F_{Tmax}** of the cable connection:

Cable	Cable core cross section [mm ²]	d_{Cable} [mm]	F_{Tmax} [N]
RKH0xxx (bulk cable without connector: REH0800)	2.5	16.2 ±0.5	84
RKH0xxx (bulk cable without connector: REH0803)	2.5	11.4 ±0.3	59
RKB0xxx (bulk cable without connector: REB0400)	0.34	6.7 ±0.2	35

⚠ WARNING**Explosion hazard by excessive tensile forces at cable connection!**

Observe the specified maximum tensile stress.

Install a strain relief for the cable after approx. 30 cm from the connection point.

Ambient temperature

The maximum operating temperature is 155 °C on the housing at an ambient temperature of 0 ... 40 °C. The ignition temperatures of materials that come into contact with the products have to be much higher than $T = 155\text{ °C}$.

Connectors

Disconnecting or connecting connectors under load can cause ignition sparks.

⚠ WARNING**Personal injury or property damage by disconnecting or connecting energized connectors!**

- Disconnect or connect connectors only when they are dry and de-energized.
- During operation of the system, all connectors must be securely tightened/locked. Hybrid cable connectors at the product must be secured using the HAS10.1-001 accessory (fixing clip for hybrid cable connectors).

Grounding

The products have to be grounded using the hybrid cable and using a separate bonding conductor with a cross section of at least **4 mm²**.

⚠ WARNING**Personal injury or property damage by missing or faulty equipment grounding connections!**

If the connection of the equipment grounding conductor in the hybrid cable and the separate bonding conductor at the housing have not been connected or are interrupted due to corrosion or other defects during their service life, the discharge current flows as leakage current over conducting housing parts.

- Connect the hybrid cable to the product and use the HAS10.1-001 accessory (fixing clip for hybrid cable connectors).
- Connect a separate bonding conductor with a cross section of at least **4 mm²** to the product.
- Before commissioning, check all equipment grounding connections for tight fit.

Corrosion

Prevent corrosion of the housing caused by aggressive substances (such as certain coolants, lubricants, cutting oils or salt mist).

Emergency stop

When the **emergency stop device** is activated, the DC bus is automatically discharged via a resistor.

Other environmental influences

Observe the application notes in the Project Planning Manual "DOK-INDRV*-KCU02+KSM02-PR□□-□□-P" regarding risks due to outer influences, such as:

- Operation only within the specified ambient conditions
- Maximum vibration and impact loads
- Protection of equipment grounding connections against dirt, corrosion, humidity and/or aggressive substances, etc.

1.5 Holding brake

Observe the safety requirements for system design.

WARNING

Serious bodily injury due to dangerous movements caused by dropping or sinking axes!

Secure vertical axes against dropping or sinking after switching off by e.g.:

- Mechanical locking of the vertical axis
- External brake, arrestor, clamping device.
- Axis weight compensation



The standard holding brakes controlled by the drive controller are **not** sufficient to guarantee personal safety!

Personal safety must be achieved using higher-ranking, fail-safe measures, such as danger zones blocked off by safety fences or safety guards.

In **normal operation**, it is only allowed to use the optional holding brake in standstill and when performing the drive-integrated brake test. In these cases, there are low temperatures of $T < 100\text{ °C}$, and no sparks are generated because critical dragging of the brake linings does not occur.

It is not allowed to use the holding brake to stop the turning motor during normal operation! The holding brake cannot be used for safety-relevant purposes either.

Malfunction Only in the event of a **malfunction**, i.e. in the case of a fault in the system, may the brake be activated when the motor is turning to prevent dangerous dropping of vertical axes, for example. In this case, sparks in the brake and increased temperatures within the motor may occur. After the fault has occurred, the operator must remove it immediately.

1.6 Residual risks

Overloading In the case of an electrical or mechanical defect, high temperatures may occur that result in explosion hazards.

Operation in an explosive dust atmosphere leads to a dust layer on the product during the exposure time, and does no longer ensure sufficient cooling of the product (see [chapter 1.15.1 "Maintenance" on page 17](#)).

Grounding and leakage currents Variable-speed drive systems cause unavoidable leakage currents. If the connection of the equipment grounding conductor in the cable and the bonding conductor at the housing have not been connected as required or are interrupted due to corrosion or other defects during their service life, the discharge current flows as leakage current over conducting housing parts. This is associated with the risk of sparking at transition points and with explosion hazard if explosive materials are present.

Material aging The exposure and penetration times of explosive materials depend on the application. It depends on the aging of the seals, on the mechanical attachment of the product, the properties of the explosive materials and the average temperature occurring during the operating time as a result of the load cycles.

Impermeability Seals (e.g., shaft sealing rings) are aging and if necessary have to be replaced on the occasion of a maintenance interval.

1.7 Marking

1.7.1 CE marking according to ATEX

The type plate contains:

- Details of the product classification in accordance with ATEX Directive 2014/34/EU
- Technical data of the product



Before installing the product, make sure that this product carries the required labels and has a sufficiently high degree of protection for your application.

Explosion protection marking and significance:

rexroth		IndraDrive Mi		7260	
		TYP: KSM02.1B-041C-42N-M1-HG0-ET-L3-D7-AN-FW			
MNR: R911335289		SN: 123456-12345	0A01	FD: 68405	Made in Germany
	Control Input U(N3) DC 30...42 V P(N3) 15.5 W		Power Input U(LN) DC 540...750 V P(LN) 495 W		Motor Output M(0 60K) 6.0 Nm n(max) 4300 min-1 U(max) AC 600 V (int.)
	Natural convection		Brake 10.0 Nm		
	SCCR: 42000 A, KCU supplied		m 14.0 kg		IP 65
	II 3D Ex to IIIC T155°C Dc LU 16 ATEX 0146 X		Bypass max. 25 A Type 4X Indoor use only T(amb) 0 °C ... +40 °C		T.C.L. 155 I.SY. ECM1
					
Bosch Rexroth Electric Drives and Controls GmbH, Bgm.-Dr.-Nebel-Straße 2, 97816 Lohr am Main					
2					

DG000726v01_nm.fm11

Marking for use in atmospheres with flammable ...

Dust	II 3D Ex tc IIIC T155°C Dc LU 16 ATEX 0146 X
Code	Significance
	Explosion protection symbol
II	Equipment group II, suitable for all potentially explosive atmospheres other than underground parts of mines liable to be endangered by firedamp.
3	Device category 3 means, equipment in this category is intended for use in areas in which explosive atmospheres caused by gases, vapors, fog, dust/air mixtures are not expected to occur or, if they do occur, are likely to do so only infrequently and for a short period only.
D	Explosive material: Dust
Ex	Standard for explosion protection has been applied.
tc	Protection by enclosure for EPL Dc
IIIC	Electric devices of group IIIC are intended for use in areas where an explosive dust atmosphere ("C": conductive dust) must be expected.
T155°C	Maximum surface temperature within and outside of the enclosure where explosive dust may occur.
Dc	Equipment protection level (EPL) classification Dc for advanced safety level for use in potentially flammable dust atmospheres where there is no ignition risk during normal operation and that have some additional safety measures which ensure no ignition risk exists in the event of foreseeable malfunctions.
LU	Notified body: Leumann & Uhlmann AG
16	Year of testing: 2016
ATEX	Directive of the European Union
0146	Test number
X	Marking: "Specific conditions"; see "Specific conditions with test number" on page 3

1.7.2 UL labeling for USA and Canada

UL labeling in accordance with UL 508C "Power Conversion Equipment" and CSA 22.2 No. 274-13 "Adjustable Speed Drives".

1.8 Connection cables

Thermal stability For the use of the products in potentially explosive atmospheres, use cables with a thermal stability of at least **80 °C (176 °F)**.

Rexroth provides suitable ready-made cables for the products. The cables are checked concerning their conformity with the ATEX directives and relevant DIN and EN standards. Use the following documentation to make your selection: DOK-CONNEC-CABLE-*INDRV-CA□□-□□-P.

1.9 Varnish

Housing varnish Black, RAL 9005

WARNING

Explosion hazard by inadmissibly modifying the surface properties.

It is not allowed to apply an additional varnish coat to products for potentially explosive atmospheres, since this has a negative effect on the surface properties (such as insulation resistance, electrostatic charge).

1.10 Attaching driving elements

Explosion protection Observe the information on attached driving elements.
Before attaching driving elements, check the suitability of the overall system in accordance with the ATEX Directive and comply with it during operation. The plant manufacturer or operator is responsible for selecting all the attached components.

WARNING

Explosion hazard and danger to life or substantial property damage!

The entire motor-machine combination must comply with the requirements for explosion protection in accordance with Directive 2014/34/EU.

For project planning and during operation, please observe the notes in the product documentation of the components used.

NOTICE

Property damage by penetrating gearbox oil!

Gearbox oil present at the output shaft is not allowed.

When attaching gearboxes, only use gearboxes with a closed (oil-tight) lubrication system. Gearbox oil should not be in permanent contact with the shaft sealing ring of the motors.

Overdetermined bearings When attaching driving elements, avoid overdetermined bearings since impermissibly high bearing forces may be caused by disadvantageous tolerance ratios.



If overdetermined bearings cannot be avoided, please contact Bosch Rexroth.

Couplings The machine design and the attached elements used have to be carefully adapted to the motor type so that the load limits of shaft and bearing are not exceeded.



When extremely stiff couplings are attached, the revolving radial force may cause an impermissibly high load on the shaft and bearing.

Bevel gear pinions or helical driving pinions

Due to thermal expansion, the DE side of the drive shaft can be displaced by up to 0.6 mm in relation to the motor housing. If helical driving pinions or bevel gear pinions directly attached to the output shaft are used, this change in position will lead to

- a shift in the position of the axis, if the driving pinions are not axially fixed on the machine side.
- a thermally dependent component of the axial force, if the driving pinions are axially fixed on the machine side. This causes the risk of exceeding the maximum allowed axial force or of the backlash within the gears increasing to an inadmissible degree.
- damage to the NDE bearing by exceeding the maximum allowed axial force.



It is recommended to use drive elements that have their own bearings and are connected to the motor shaft via axially compensating couplings.

1.11 Mechanical attachment

Preparation Before installing the product, check whether the required data on the type plate of the product comply with the locally allowed conditions of use in potentially explosive atmospheres:

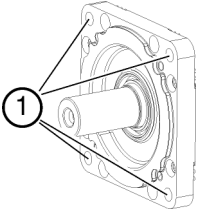
- Device group and device category
- Explosion subgroup
- Maximum allowed surface temperature
- ...

Check the components for visible damage. Damaged components may not be mounted.

Before installing the components, make sure that the ambient conditions on site, such as ambient temperature, humidity, vibration and shock stresses, do not exceed the data specified in the Project Planning Manual "DOK-INDRV*-KCU02+KSM02-PR□□-□□-P".

Attachment The products are designed for flange assembly (B05 design). For details on the mounting holes please see Project Planning Manual "DOK-INDRV*-KCU02+KSM02-PR□□-□□-P". The following general assignment applies for fastening:

Recommended screws for flange fastening

	B05 (flange assembly)		
	Mounting hole Ø [mm]	Screw Type ¹⁾	Tightening torque T _T [Nm]
			
KSM02.1B-041C	6.6	M6 × 20	10.4

- ① Mounting hole
 T_T [Nm] Tightening torque in newton meters
 1) Minimum screw length for screwing into steel. Minimum strength: 8.8



The screw connections for flange assembly have to be able to withstand both the force due to weight of the product and the forces acting during operation.

Preparation Make the following preparations for assembly:

1. Procure tools, auxiliary materials, measuring and test equipment.
2. Check all components for visible damage. Damaged components may not be mounted.
3. Ensure that dimensions and tolerances on the installation side are suitable for attachment (for details, see Project Planning Manual "DOK-INDRV*-KCU02+KSM02-PR□□-□□-P").
4. Check all components, mounting surfaces and threads to verify that they are clean.
5. Make sure that the assembly can be carried out in a dry and dust-free environment.
6. Ensure that the holder for the flange is without burrs.

7. Remove the protective sleeve from the shaft and keep the sleeve for further use.
- If the optional holding brake is used** Check, whether the holding brake attains the holding torque specified on the type plate.
- If the holding torque specified for the holding brake is not attained, the holding brake has to be resurfaced before assembly.
- Assembly** Observe the following aspects:
1. Avoid clamping or jamming the motor-side centering collar.
 2. Avoid damage to the insertion fitting on the system side.
 3. Check the stability and precision of the connection before you proceed.
- After proper mechanical assembly, proceed with the electrical connections.

1.12 Holding brake – Commissioning and maintenance instructions

WARNING

Danger to life or substantial property damage, ignition and explosion hazard due to inappropriate use!

Any commissioning and maintenance work may only be carried out in **non-explosive** environments. The environment must be free from explosive gas or dust.

Before commissioning and maintenance work is carried out, the rooms have to be ventilated, if necessary.

In order to ensure proper functioning of the holding brake, the holding brake has to be checked before commissioning. The check and, if necessary, the resurfacing procedure can be carried out "mechanically by hand" or "automatically using the software function".

Checking and resurfacing holding brakes by hand

Measure the holding torque (M4) of the holding brake. If necessary, resurface the holding brake.

Measuring the holding torque (M4) of the holding brake

1. De-energize the motor and make sure it cannot be switched back on.
2. Measure the transferable holding torque (M4) of the holding brake with a torque wrench. For the holding torque (M4) refer to the technical data.

If the specified holding torque (M4) is attained, the motor is ready for assembly.

If the specified holding torque (M4) **is not attained**, the holding torque can be restored by the subsequent resurfacing procedure.

Resurfacing the holding brake

1. With the holding brake applied, turn the output shaft by hand, e.g. using a torque wrench, by about 5 revolutions.
2. Measure the holding torque (M4).

If the specified holding torque (M4) is attained, the motor is ready for assembly.

If the specified holding torque (M4) is not attained after multiple resurfacing procedures, the holding brake is not operational. Please contact the Rexroth Service.

Checking and resurfacing holding brakes using the software function

Checking the holding torque (M4) using the holding system check command P-0-0541, C2100

1. The drive controller checks the efficiency of the holding brake and its applied state by starting the "P-0-0541, C2100 Holding system check command" routine.

If the holding brake is all right, the drive is operational after the routine was run. If the braking torque is too low, the drive controller outputs the corresponding message.



The brake test can also be carried out cyclically within the scope of preventive maintenance.

Restoring the holding torque (M4) using the software function

The following options are available:

1. Carrying out the IndraDrive resurfacing routine "restoring the holding torque" (see "P-0-0544, C3900 Command Holding brake resurfacing"). It is possible to carry out this resurfacing routine multiple times.

Executing the command C3900 does not check whether the resurfacing of the holding brake was successful. It is recommended to execute the command C2100 (holding system check) again.

2. Resurfacing routine using higher-level control. This requires special control programs adjusted to the machine and system concepts. If necessary, please contact your sales partner and discuss the resurfacing routine parameters for your application.

For more detailed information on software functions refer to the Functional Description "Rexroth IndraDrive Firmware for Drive Controllers MPx-xx, DOK-INDRV*-MP*-xxVRS**-FKxx-EN-P."

1.13 Connection system

DANGER

Explosion hazard by improper handling during connection work!

- Make sure that the product is only connected in a non-explosive atmosphere and in its de-energized state.
- Before working on the system, always use a suitable measuring device (e.g., multimeter) to check whether parts are still under residual voltage (e.g., due to the residual energies of capacitors in filters and drive controllers etc.). Observe the discharge times.
- Check the connection of the equipment grounding conductor and of the bonding conductor.

To ensure safe operation, the products have to be grounded using the hybrid cable **and** using the bonding conductor (see [chapter 1.13.2 "Connecting the bonding conductor" on page 14](#)).

1.13.1 Electrical connection

⚠ WARNING

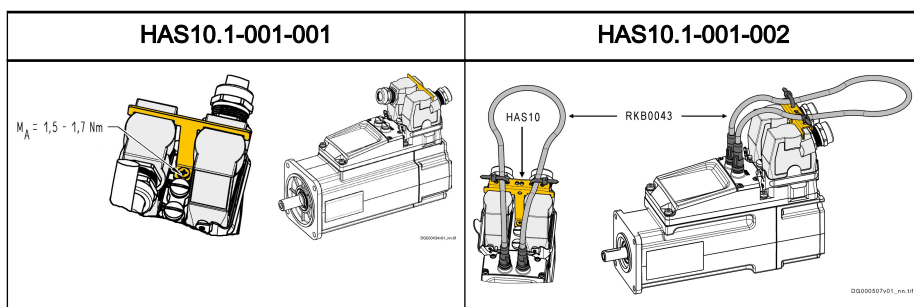
Personal injury or property damage by disconnecting or connecting energized connectors!

- Disconnect or connect connectors only when they are dry and de-energized.
- During operation of the system, all connectors must be securely connected.

Connecting the connectors

When connecting the hybrid cable connectors, proceed as follows:

1. Open the bracket at the connection point
2. Place the connector at the housing in the correct position
3. Plug in the connector
4. Close the bracket at the connection point
5. Assemble the HAS10.1-001 accessory (fixing clip for hybrid cable connectors):

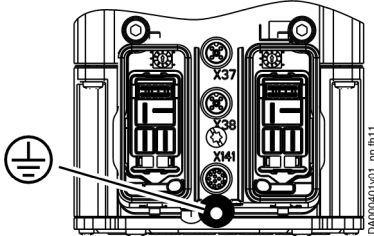


Only completely closed brackets ensure that the degree of protection IP 65 can be attained and activate the vibration protection.

The HAS10.1-001 accessory (fixing clip for hybrid cable connectors) increases the vibration resistance of the product and is mandatory for operating the product.

1.13.2 Connecting the bonding conductor

Connect the bonding conductor to the product:

View	Connection	Signal name	Function
		Equipment grounding conductor	Connection point of bonding conductor Is used to connect the product to a grounded part of the installation, e.g. the machine base
Thread M5 (for ring cable lug)	Unit	min.	max.
Tightening torque	Nm	2.6	3.1
Cable cross section stranded wire	mm ²	4	-
Cable cross section solid wire	mm ²	6	-

1.14 Commissioning

WARNING

Explosion hazard if acceptance test of the overall system has not been carried out!

Commissioning in potentially explosive atmospheres is prohibited until it has been ascertained that the overall system corresponds to the demands and certification conditions for explosion protection.

WARNING

**Personal injury or property damage by errors in the control of motors and moving parts!
Unclear operating states and product data!**

Do not carry out commissioning under the following circumstances:

- Connections, operating states or product data are unclear or faulty
- Safety devices and monitoring systems of the installation are damaged or not in operation

Never operate any damaged products.

Contact Rexroth for missing information or support during commissioning.

- | | |
|--------------------|---|
| Preparation | <ol style="list-style-type: none"> 1. Have the documentations (Operating Instructions, declaration of conformity, data sheets, ...) of all devices used ready at hand. 2. Check the devices for damage. 3. Check all mechanical and electrical connections (including the bonding conductor!). 4. Record all measures taken in the commissioning log. 5. Activate the safety devices and monitoring systems of the installation. |
| Procedure | When all requirements have been met, proceed as follows: |

1. Commission the drive system according to the instructions contained in the corresponding documentations. You can find the respective information in the functional descriptions of the drive controllers.
2. Write down all measures taken in the commissioning log.

The commissioning of drive controllers and control unit may require additional steps. The inspection of the functioning and performance of the systems is not object of these Operating Instructions; instead, it is carried out within the framework of the commissioning of the machine as a whole. Observe the machine manufacturer's specifications and instructions.



Before the system is commissioned, an acceptance test has to be carried out including an acceptance test protocol in which the notes and application conditions specified here are confirmed.

After repairs and disassembly in the course of the maintenance of safety-relevant parts, carry out the check in accordance with EN 60079-17, if the work carried out during the repairs or disassembly might affect the functioning of the ignition protection.

1.15 Disassembly / maintenance / repair

DANGER

Danger to life due to electrical voltage! Working in the vicinity of live parts is extremely dangerous.

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

Prior to commencing work:

1. Isolate (even auxiliary circuits)
2. Provide a safeguard to prevent reconnection
3. Make sure that the system is de-energized

Before starting to work, check with an appropriate measuring device whether parts of the system are still under residual voltage (e.g., caused by capacitors). Observe the discharge times of the capacitors.

WARNING

Personal injury and property damage during assembly work! Crushing hazard for fingers and hands due to strong attractive forces of the magnets!

- Before starting to work, secure the machine against unpredictable movements and against unauthorized operation.
- Do not work at running or unsecured machines.
- Before disconnecting mechanical connections, secure the motor and supply lines to prevent them from falling down.
- Only work with safety gloves and use suitable mounting devices.

⚠ CAUTION

Hot surfaces with temperatures over 60 °C may cause burns!

Allow the products to cool down prior to commencing work. The thermal time constant specified in the technical data is a measure for the time required for cooling down. Cool-down times of up to 140 minutes may be required!

Wear safety gloves.

Do not work on hot surfaces.

In the case of malfunctions, maintenance work or disassembly of the products, proceed as follows:

1. Use the control commands to bring the drive to a controlled standstill.
2. Switch off the power voltage and control voltage of the drive controller.
3. Switch off the main switch of the machine.
4. Secure the machine against unpredictable movements and against unauthorized operation.
5. Wait for the cool-down times of the product and the discharge time of the electrical systems to elapse.
6. Disconnect all electrical connections.
7. Before dismounting the product and the supply lines, secure them against dropping or movements, before unfastening the mechanical connections.

1.15.1 Maintenance

Increase the availability with regular preventive maintenance measures. Observe the information in the machine manufacturer's maintenance schedule and the following details regarding maintenance measures and maintenance intervals for the product.

Measure	Interval
Check the mechanical and electrical connections	According to the specifications in the machine maintenance schedule, but at least every 1,000 operating hours
Check the machine for smooth running, vibrations and bearing noise	According to the specifications in the machine maintenance schedule, but at least every 1,000 operating hours
Remove dust, shavings and other dirt from the housing, cooling fins and connections.	Depending on the degree of soiling, but after one year in operation at the latest
Visual inspection of the shaft sealing ring at the output shaft: - Visible abrasion residues of the shaft sealing ring? - Visible grinding marks or notches at the output shaft near the contact point of shaft sealing ring and output shaft?	After 5,000 operating hours

1.15.2 Repair

Defective ATEX products must be repaired in the manufacturer's factory or by the authorized Bosch Rexroth Service.

The Bosch Rexroth Service carries out the following repairs, for example:

- Replacement of motor encoder
- Replacement of shaft sealing ring
- Replacement of seals
- Replacement of bearings

2 Environmental protection and disposal

In accordance with the valid national regulations, the products can be disposed of in the normal recycling process.

Recycling

Most of the products can be recycled due to their high content of metal. The products normally can be disposed of as entire units.

Basic components

Basically, the products consist of the following components:

- Steel, aluminum, copper, brass
- Plastics, insulation and composite materials
- Electronic components
- Permanent magnets

WARNING

Danger due to permanent magnets!

Health hazard for persons with heart pacemakers, hearing aids and metallic implants in the immediate vicinity of permanent magnets.

Crushing hazard for fingers and hands due to strong attractive forces of the magnets.

Risk of destruction of sensitive parts such as watches, credit cards, ...

Packaging

Our packaging materials do not contain any problematic materials and can be recycled without any problem. We use the following packaging materials: wood, cardboard and polystyrene.

Disposal by the manufacturer

Our products can be returned to us for disposal. Please make sure that the products are free from oil, grease or other foreign materials or foreign components.

Return the components in a suitable packaging (original packaging, if possible). Observe the Dangerous Goods Regulations (IATA) when transporting the rotor by air.

Deliver the products "free domicile" to the following address:

Bosch Rexroth AG
Electric Drives and Controls
Buergermeister-Dr.-Nebel-Strasse 2
97816 Lohr am Main, Germany

3 Service and support

Our worldwide service network provides an optimized and efficient support. Our experts offer you advice and assistance should you have any queries. You can contact us **24/7**.

Service Germany Our technology-oriented Competence Center in Lohr, Germany, is responsible for all your service-related queries for electric drive and controls.

Contact the **Service Hotline** and **Service Helpdesk** under:

Phone: **+49 9352 40 5060**
Fax: **+49 9352 18 4941**
E-mail: service.svc@boschrexroth.de
Internet: <http://www.boschrexroth.com>

Additional information on service, repair (e.g. delivery addresses) and training can be found on our internet sites.

Service worldwide Outside Germany, please contact your local service office first. For hotline numbers, refer to the sales office addresses on the internet.

Preparing information To be able to help you more quickly and efficiently, please have the following information ready:

- Detailed description of malfunction and circumstances
- Type plate specifications of the affected products, in particular type codes and serial numbers
- Your contact data (phone and fax number as well as your e-mail address)

4 Declaration of conformity



EU-Konformitätserklärung - Original

Dok.-Nr.: DCTC-30506-001

Datum: 2017-04-04

- ☐ 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: Dezentrale Servoantriebe (IndraDrive Mi)
 Baureihen: KSM02.1B-041C-...-AT-... KSM02.1B-041C-...-AN-... KSM02.1B-041C-...-AE-...
 Ab Herstelldatum: 2016-11-07

in Übereinstimmung mit der oben genannten EU-Richtlinie entwickelt, konstruiert und gefertigt wurden.

Angewandte harmonisierte Normen:

Norm	Titel	Ausgabe
EN 60079-0 (IEC 60079-0)	Explosionsgefährdete Bereiche – Teil 0: Geräte – Allgemeine Anforderungen	2012 + A11:2013 (2011, modifiziert + Cor.:2012 + Cor.: 2013)
EN 60079-31 (IEC 60079-31)	Explosionsgefährdete Bereiche – Teil 31: Geräte-Staubexplosionsschutz durch Gehäuse „t“	2014 (2013)

Die Produkte haben folgende Kennzeichnungen:

II 3D Ex tc III C T155°C Dc X

Weitere Erläuterungen:

Das Produkt ist ausschließlich zum Einbau in eine Maschine bestimmt.

Der bestimmungsgemäße Gebrauch des Produktes setzt die Einhaltung der Benutzungsbestimmungen und Anwendungsbedingungen, die in der Betriebsanleitung (DOP-INDRV*-KSM*EXGIIK3-IT01-xx-x) angegeben werden, durch den Nutzer voraus.

Lohr a. Main, den 2017-04-04
Ort Datum

ppa.
Joachim Hennig
Werkleitung LoP2

i.V.
Eberhard Schemm
Entwicklungsbereichsleiter Antriebe

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

Fig. 4-1: EU declaration of conformity, original, German

Declaration of conformity

**EU declaration of conformity - original**

Doc. No.: DCTC-30506-001

Date: 2017-04-04

- ☐ 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: Distributed servo drives (IndraDrive Mi)
 Series: KSM02.1B-041C-...-AT-... KSM02.1B-041C-...-AN-... KSM02.1B-041C-...-AE-...
 From the date of manufacture: 2016-11-07

were developed, designed and manufactured in compliance with the above-mentioned EU directive.

Harmonized Standards applied:

Standard	Title	Edition
EN 60079-0 (IEC 60079-0)	Explosive atmospheres – Part 0: Equipment – General requirements	2012 + A11:2013 (2011, modified + Cor.:2012 + Cor.: 2013)
EN 60079-31 (IEC 60079-31)	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"	2014 (2013)

The products have the following markings:

II 3D Ex tc IIIC T155°C Dc X

Further explanations:

The product is intended solely for installation in a machine.

For the product to be used as intended the user must comply with the provisions of use and conditions of application laid down in the instructions (DOP-INDRV*-KSM*EXGIIK3-IT01-xx-x).

Lohr a. Main ,
Place

2017-04-04
Date

ppa.
Joachim Hennig
Plant Manager LoP2

i.V.
Eberhard Schemm
Vice President Drives Solutions

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

Fig. 4-2: EU declaration of conformity, original, English

5 China RoHS 2

www.boschrexroth.com.cn/zh/cn/home_2/china_rohs2

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Notes

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