KUKA

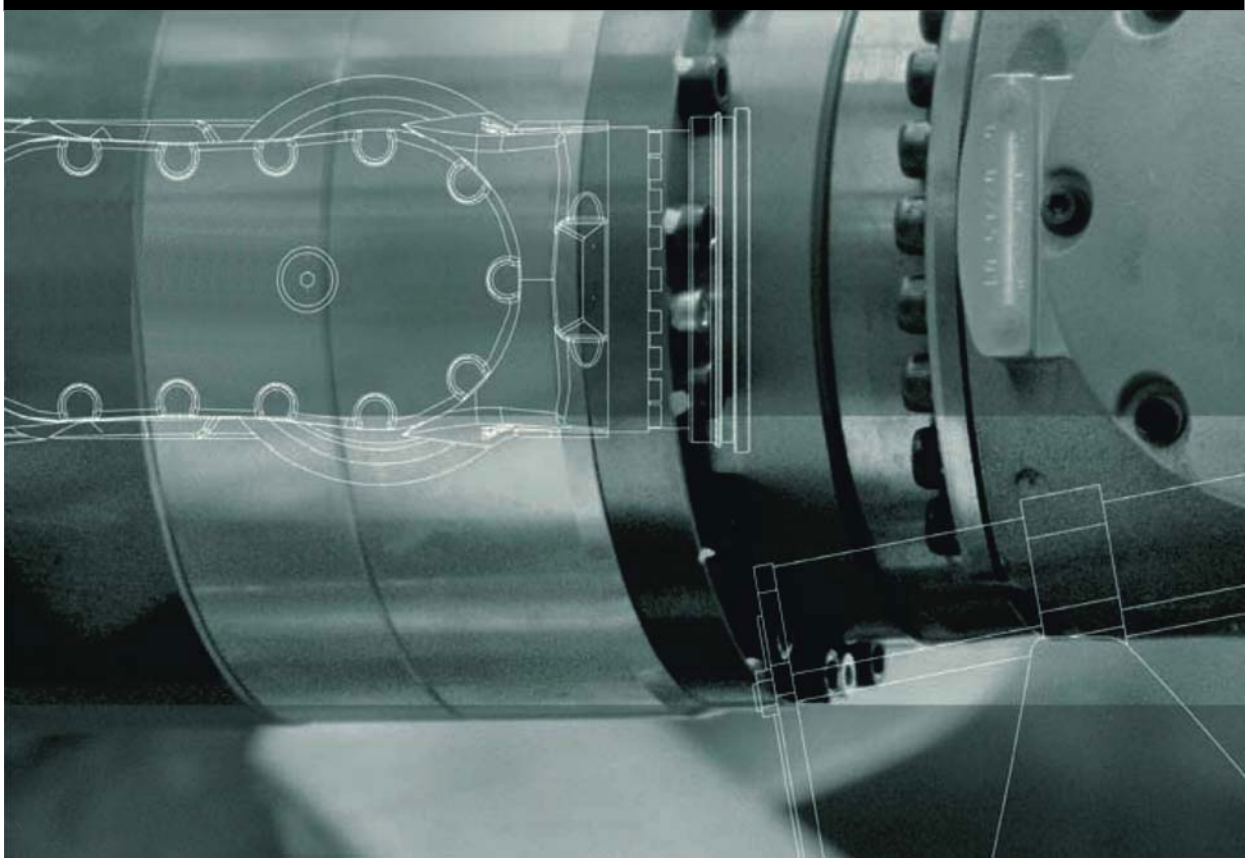
Controller Option

KUKA Roboter GmbH

Technology Cabinet

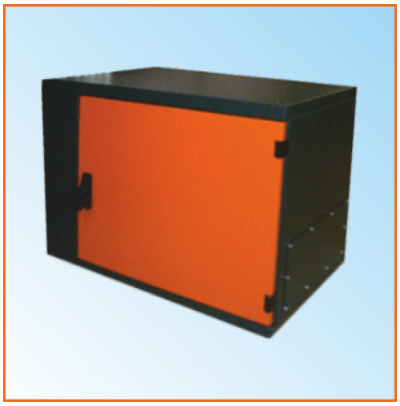
For KR C4 extended; KR C4 extended CK

Assembly and Operating Instructions



Issued: 19.02.2013

Version: MA KR C4 extended technology cabinet V1 en (PDF)



KUKA Roboter GmbH
Zugspitzstraße 140
D-86165 Augsburg
Germany

Other functions not described in this documentation may be operable in the controller. The user has no claims to these functions, however, in the case of a replacement or service work.

We have checked the content of this documentation for conformity with the hardware and software described. Nevertheless, discrepancies cannot be precluded, for which reason we are not able to guarantee total conformity. The information in this documentation is checked on a regular basis, however, and necessary corrections will be incorporated in the subsequent edition.

Subject to technical alterations without an effect on the function.

Translation of the original documentation

KIM-PS5-DOC

Publication:	Pub MA KR C4 extended Technologieschrank (PDF) en
Bookstructure:	MA KR C4 extended Technologieschrank V1.1
Version:	MA KR C4 extended technology cabinet V1 en (PDF)

Contents

1 Introduction

1.1 Representation of warnings and notes

Safety

These warnings are relevant to safety and **must** be observed.

DANGER	These warnings mean that it is certain or highly probable that death or severe injuries **will** occur, if no precautions are taken.
WARNING	These warnings mean that death or severe injuries **may** occur, if no precautions are taken.
CAUTION	These warnings mean that minor injuries **may** occur, if no precautions are taken.
NOTICE	These warnings mean that damage to property **may** occur, if no precautions are taken.
	These warnings contain references to safety-relevant information or general safety measures. These warnings do not refer to individual hazards or individual precautionary measures.

This warning draws attention to procedures which serve to prevent or remedy emergencies or malfunctions:

SAFETY INSTRUCTIONS	Procedures marked with this warning **must** be followed exactly.

Notes

These hints serve to make your work easier or contain references to further information.

	Tip to make your work easier or reference to further information.

2 Purpose

2.1 Target group

This documentation is aimed at users with the following knowledge and skills:

- Advanced knowledge of electrical and electronic systems

For optimal use of our products, we recommend that our customers take part in a course of training at KUKA College. Information about the training program can be found at www.kuka.com or can be obtained directly from our subsidiaries.

2.2 Intended use

Use

The technology cabinet is a top-mounted cabinet for the KR C4 extended and KR C4 extended CK robot controller.

Misuse

Any use or application deviating from the intended use is deemed to be impermissible misuse. This includes e.g.:

- Operation outside the permissible operating parameters
- Use in potentially explosive environments
- Underground operation

3 Product description

3.1 Overview of technology cabinet

Description

The technology cabinet is fastened on top of the KR C4 extended robot controller. On the inside of the rear panel of the technology cabinet is a removable mounting plate that can be used freely. On the outer right-hand panel is a mounting plate for installation of the connectors.

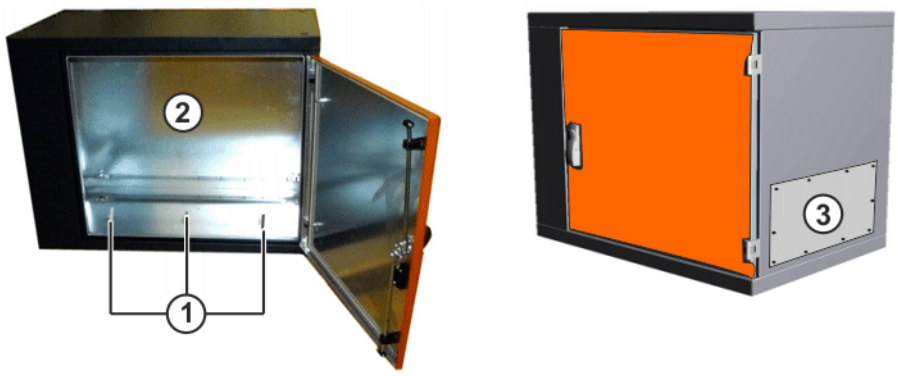


Fig. 3-1: Overview

1 Bolts for PE rail
2 Mounting plate for installed equipment
3 Mounting plate for connectors

4 Technical data

Basic data

Cabinet type	Technology cabinet
Weight	approx. 40 kg
Protection rating	IP 54
Color	Configurable

Environmental conditions

The environmental conditions, such as the ambient temperature, altitude and humidity class, depend on the installed devices and are thus the sole responsibility of the user.

Vibration resistance

Type of loading	During transportation	During continuous operation
r.m.s. acceleration (sustained oscillation)	0.37 g	0.1 g
Frequency range (sustained oscillation)	4...120 Hz	
Acceleration (shock in X/Y/Z direction)	10 g	2.5 g
Waveform/duration (shock in X/Y/Z direction)	Half-sine/11 ms	

4.1 Dimensions

Technology cabinet

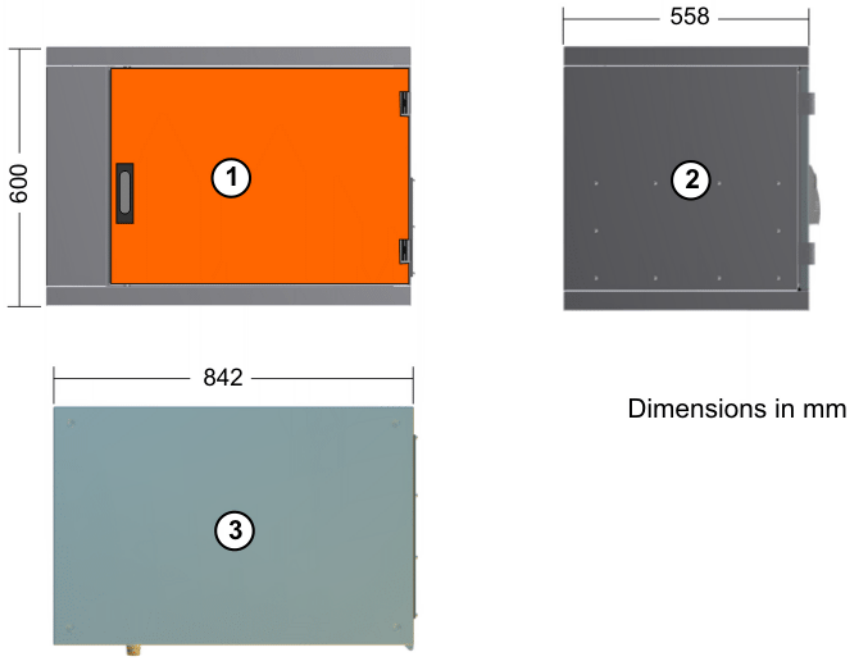


Fig. 4-1: Dimensions of technology cabinet

1 Front view
2 Side view
3 Top view

Mounting plates

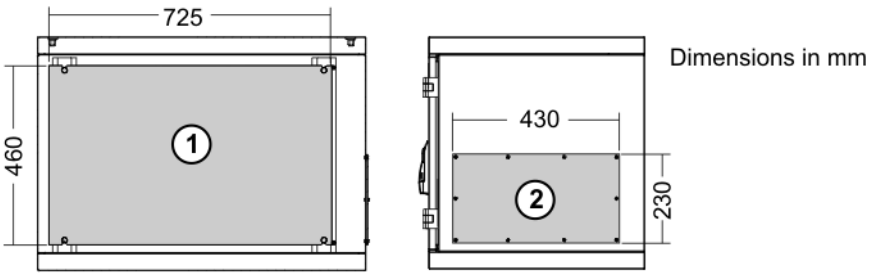


Fig. 4-2: Dimensions of mounting plate

1 Mounting plate on rear panel
2 Mounting plate for connectors

Technology cabinet with KR C4 extended

Fig. 4-3: Fastening on the KR C4 extended robot controller

1 Technology cabinet
2 KR C4 extended robot controller

4.2 Dimensions of boreholes for technology cabinet

The diagram (>>> Fig. 4-4) shows the dimensions of the boreholes on the KR C4 for fastening the technology cabinet.

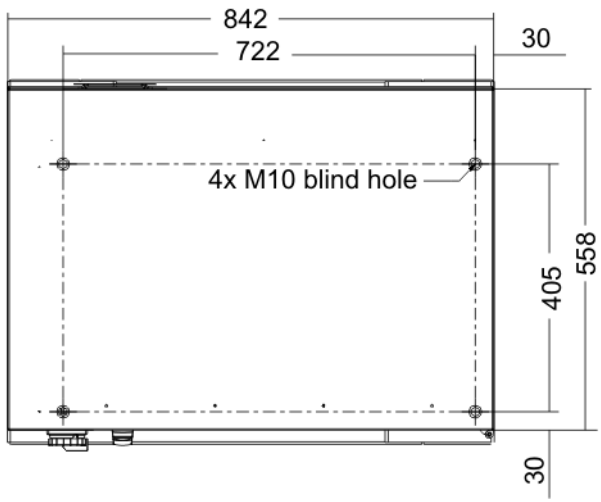


Fig. 4-4: Fastening the technology cabinet

1 View from above

The diagram (>>> Fig. 4-5) shows the dimensions of the boreholes on the adapter rails for fastening the technology cabinet.

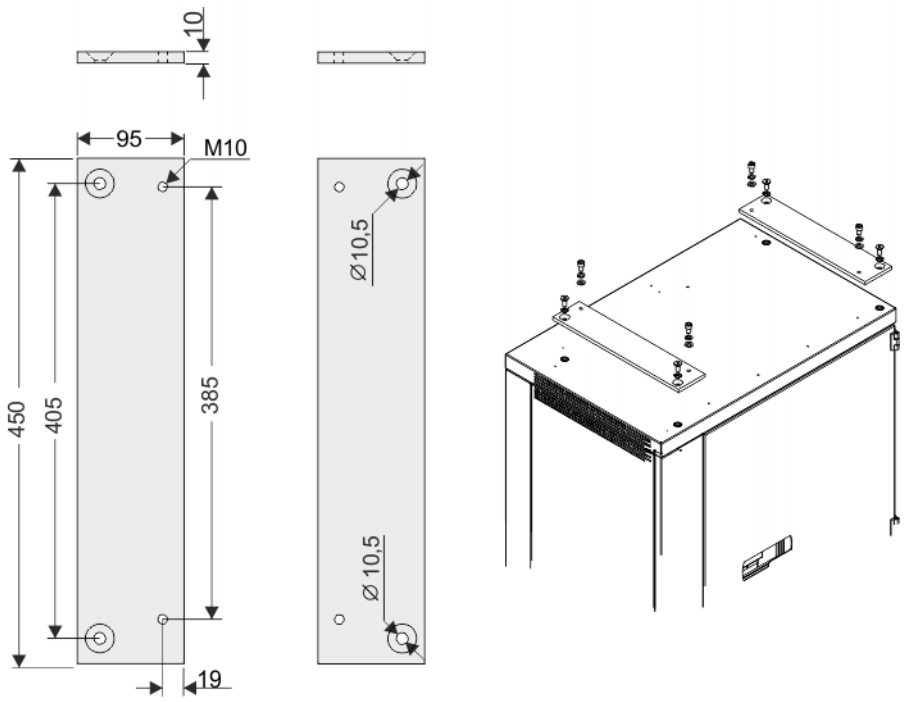


Fig. 4-5: Technology cabinet, fastening on mounting rails

4.3 Plates and labels

Depending on the technology cabinet configuration and use, corresponding plates and labels must be attached (Warning, Information, etc.).

5 Safety

This documentation contains safety instructions which refer specifically to the product described here. The fundamental safety information for the industrial robot can be found in the “Safety” chapter of the operating or assembly instructions for the robot controller.

⚠ WARNING The “Safety” chapter in the operating instructions or assembly instructions of the robot controller must be observed. Death to persons, severe injuries or considerable damage to property may otherwise result.

6 Transportation

6.1 Transportation using lifting tackle

Preconditions

- The robot controller and technology cabinet must be switched off.
- No cables may be connected to the robot controller or technology cabinet.
- The door of the robot controller must be closed.
- The door of the technology cabinet must be closed.
- The robot controller and technology cabinet must be upright.

Necessary equipment

- Lifting tackle with or without lifting frame

Procedure

1. Attach the lifting tackle with or without a lifting frame to all 4 transport eyebolts on the top-mounted cabinet.

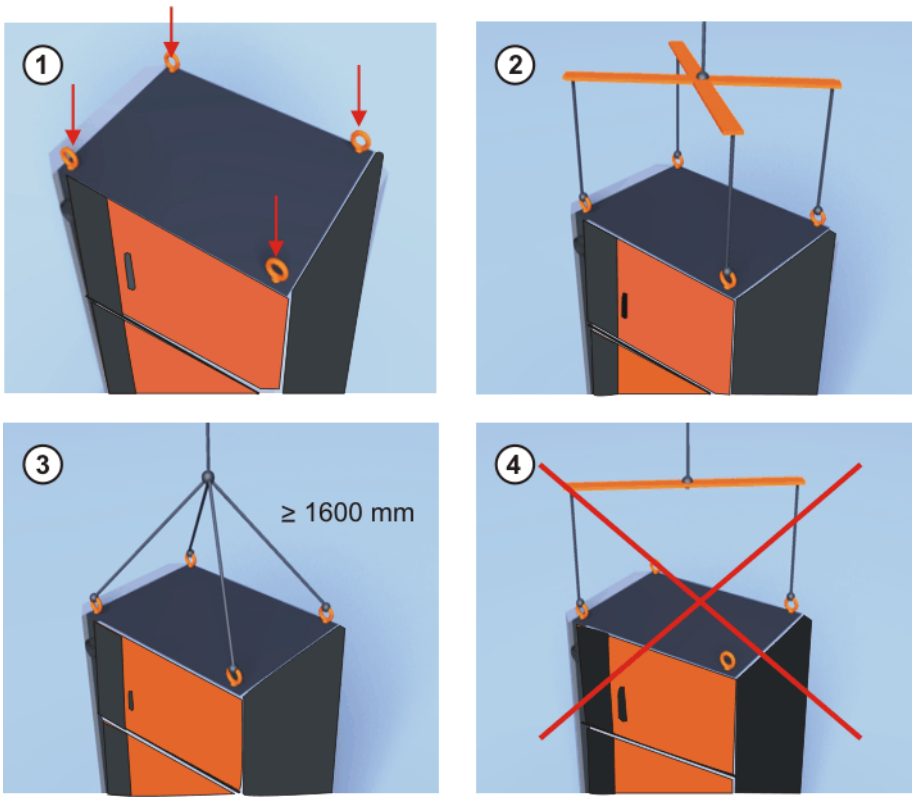


Fig. 6-1: Transportation using lifting tackle

1 Transport eyebolts on the technology cabinet
2 Correctly attached lifting tackle
3 Correctly attached lifting tackle
4 Incorrectly attached lifting tackle

2. Attach the lifting tackle to the crane.

⚠ WARNING If the suspended robot controller with technology cabinet is transported too quickly, it may swing and cause injury or damage. Transport the robot controller with technology cabinet slowly.

3. Slowly lift and transport the robot controller with technology cabinet.
4. Slowly lower the robot controller with technology cabinet at its destination.
5. Detach the lifting tackle from the technology cabinet.

6.2 Transportation by pallet truck

Preconditions

- The robot controller and technology cabinet must be switched off.
- No cables may be connected to the robot controller or technology cabinet.
- The door of the robot controller must be closed.
- The door of the technology cabinet must be closed.
- The robot controller must be upright.
- The anti-toppling bracket must be fastened to the robot controller.

Procedure

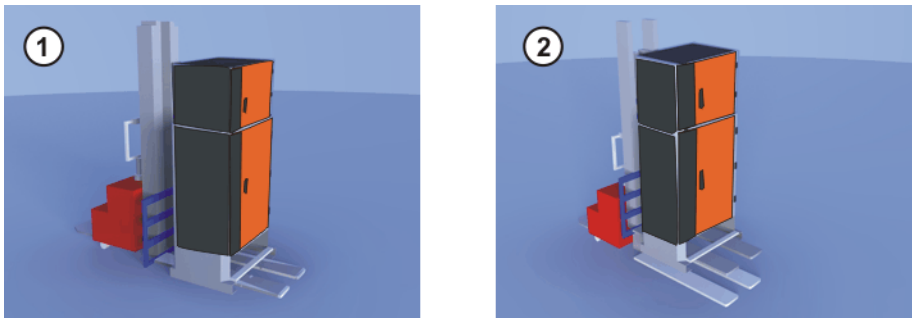


Fig. 6-2: Transportation by pallet truck

1 Robot controller with anti-toppling bracket and technology cabinet
2 Raised robot controller with technology cabinet

6.3 Transportation by fork lift truck

Preconditions

- The robot controller and technology cabinet must be switched off.
- No cables may be connected to the robot controller or technology cabinet.
- The door of the robot controller must be closed.
- The door of the technology cabinet must be closed.
- The robot controller and technology cabinet must be upright.
- The anti-toppling bracket must be fastened to the robot controller.

Procedure

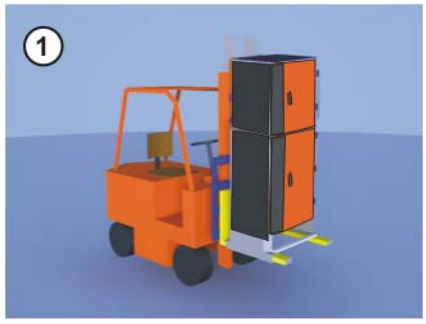


Fig. 6-3: Transportation by fork lift truck

1 Robot controller with fork slots

7 Start-up and recommissioning

7.1 Fastening on the robot controller

The technology cabinet is firmly screwed to the threaded holes of the transport eyebolts on the robot controller.

8 Maintenance

The technology cabinet is maintenance-free.

8.1 Cleaning the technology cabinet

Preconditions

- The robot controller must be switched off and secured to prevent unauthorized persons from switching it on again.
- Power supply lead disconnected.
- Observe the ESD guidelines.

Work regulations

- The manufacturer's instructions must be observed when using cleaning agents for cleaning work.
- It must be ensured that no cleaning agents enter electrical components.
- Do not use compressed air during cleaning work.
- Do not spray with water.

Procedure

1. Loosen and vacuum up any dust deposits.
2. Clean the technology cabinet with a cloth soaked with a mild cleaning agent.
3. Clean cables, plastic parts and hoses with a solvent-free cleaning agent.
4. Replace damaged, illegible or missing identifications, labels and plates.

9 Decommissioning, storage and disposal

The technology cabinet must be decommissioned, stored and disposed of in accordance with the applicable national laws, regulations and standards.

10 KUKA Service

10.1 Requesting support

Introduction

The KUKA Roboter GmbH documentation offers information on operation and provides assistance with troubleshooting. For further assistance, please contact your local KUKA subsidiary.

Information

The following information is required for processing a support request:

- Model and serial number of the robot
- Model and serial number of the controller
- Model and serial number of the linear unit (if applicable)
- Model and serial number of the energy supply system (if applicable)
- Version of the KUKA System Software
- Optional software or modifications
- Archive of the software

  For KUKA System Software V8: instead of a conventional archive, generate the special data package for fault analysis (via **KrcDiag**).
- Application used
- Any external axes used
- Description of the problem, duration and frequency of the fault

10.2 KUKA Customer Support

Availability

KUKA Customer Support is available in many countries. Please do not hesitate to contact us if you have any questions.

Argentina

Ruben Costantini S.A. (Agency)
Luis Angel Huergo 13 20
Parque Industrial
2400 San Francisco (CBA)
Argentina
Tel. +54 3564 421033
Fax +54 3564 428877
ventas@costantini-sa.com

Australia

Headland Machinery Pty. Ltd.
Victoria (Head Office & Showroom)
95 Highbury Road
Burwood
Victoria 31 25
Australia
Tel. +61 3 9244-3500
Fax +61 3 9244-3501
vic@headland.com.au
www.headland.com.au

Belgium

KUKA Automatisering + Robots N.V.
Centrum Zuid 1031
3530 Houthalen
Belgium
Tel. +32 11 516160
Fax +32 11 526794
info@kuka.be
www.kuka.be

Brazil

KUKA Roboter do Brasil Ltda.
Travessa Claudio Armando, nº 171
Bloco 5 - Galpões 51/52
Bairro Assunção
CEP 09861-7630 São Bernardo do Campo - SP
Brazil
Tel. +55 11 4942-8299
Fax +55 11 2201-7883
info@kuka-roboter.com.br
www.kuka-roboter.com.br

Chile

Robotec S.A. (Agency)
Santiago de Chile
Chile
Tel. +56 2 331-5951
Fax +56 2 331-5952
robotec@robotec.cl
www.robotec.cl

China

KUKA Robotics China Co.,Ltd.
Songjiang Industrial Zone
No. 388 Minshen Road
201612 Shanghai
China
Tel. +86 21 6787-1888
Fax +86 21 6787-1803
www.kuka-robotics.cn

Germany

KUKA Roboter GmbH
Zugspitzstr. 140
86165 Augsburg
Germany
Tel. +49 821 797-4000
Fax +49 821 797-1616
info@kuka-roboter.de
www.kuka-roboter.de

France

KUKA Automatisme + Robotique SAS
Techvallée
6, Avenue du Parc
91140 Villebon S/Yvette
France
Tel. +33 1 6931660-0
Fax +33 1 6931660-1
commercial@kuka.fr
www.kuka.fr

India

KUKA Robotics India Pvt. Ltd.
Office Number-7, German Centre,
Level 12, Building No. - 9B
DLF Cyber City Phase III
122 002 Gurgaon
Haryana
India
Tel. +91 124 4635774
Fax +91 124 4635773
info@kuka.in
www.kuka.in

Italy

KUKA Roboter Italia S.p.A.
Via Pavia 9/a - int.6
10098 Rivoli (TO)
Italy
Tel. +39 011 959-5013
Fax +39 011 959-5141
kuka@kuka.it
www.kuka.it

Japan

KUKA Robotics Japan K.K.
YBP Technical Center
134 Godo-cho, Hodogaya-ku
Yokohama, Kanagawa
240 0005
Japan
Tel. +81 45 744 7691
Fax +81 45 744 7696
info@kuka.co.jp

Canada

KUKA Robotics Canada Ltd.
6710 Maritz Drive - Unit 4
Mississauga
L5W 0A1
Ontario
Canada
Tel. +1 905 670-8600
Fax +1 905 670-8604
info@kukarobotics.com
www.kuka-robotics.com/canada

Korea

KUKA Robotics Korea Co. Ltd.
RIT Center 306, Gyeonggi Technopark
1271-11 Sa 3-dong, Sangnok-gu
Ansan City, Gyeonggi Do
426-901
Korea
Tel. +82 31 501-1451
Fax +82 31 501-1461
info@kukakorea.com

Malaysia

KUKA Robot Automation Sdn Bhd
South East Asia Regional Office
No. 24, Jalan TPP 1/10
Taman Industri Puchong
47100 Puchong
Selangor
Malaysia
Tel. +60 3 8061-0613 or -0614
Fax +60 3 8061-7386
info@kuka.com.my

Mexico

KUKA de México S. de R.L. de C.V.
Progreso #8
Col. Centro Industrial Puente de Vigas
Tlalnepantla de Baz
54020 Estado de México
Mexico
Tel. +52 55 5203-8407
Fax +52 55 5203-8148
info@kuka.com.mx
www.kuka-robotics.com/mexico

Norway

KUKA Sveiseanlegg + Roboter
Sentrumsvegen 5
2867 Hov
Norway
Tel. +47 61 18 91 30
Fax +47 61 18 62 00
info@kuka.no

Austria

KUKA Roboter Austria GmbH
Vertriebsbüro Österreich
Regensburger Strasse 9/1
4020 Linz
Austria
Tel. +43 732 784752
Fax +43 732 793880
office@kuka-roboter.at
www.kuka-roboter.at

Poland

KUKA Roboter Austria GmbH
Spółka z ograniczoną odpowiedzialnością
Oddział w Polsce
Ul. Porcelanowa 10
40-246 Katowice
Poland
Tel. +48 327 30 32 13 or -14
Fax +48 327 30 32 26
ServicePL@kuka-roboter.de

Portugal

KUKA Sistemas de Automatización S.A.
Rua do Alto da Guerra n° 50
Armazém 04
2910 011 Setúbal
Portugal
Tel. +351 265 729780
Fax +351 265 729782
kuka@mail.telepac.pt

Russia

OOO KUKA Robotics Rus
Webnaja ul. 8A
107143 Moskau
Russia
Tel. +7 495 781-31-20
Fax +7 495 781-31-19
kuka-robotics.ru

Sweden

KUKA Svetsanläggningar + Robotar AB
A. Odhners gata 15
421 30 Västra Frölunda
Sweden
Tel. +46 31 7266-200
Fax +46 31 7266-201
info@kuka.se

Switzerland

KUKA Roboter Schweiz AG
Industriestr. 9
5432 Neuenhof
Switzerland
Tel. +41 44 74490-90
Fax +41 44 74490-91
info@kuka-roboter.ch
www.kuka-roboter.ch

Spain

KUKA Robots IBÉRICA, S.A.
Pol. Industrial
Torrent de la Pastera
Carrer del Bages s/n
08800 Vilanova i la Geltrú (Barcelona)
Spain
Tel. +34 93 8142-353
Fax +34 93 8142-950
Comercial@kuka-e.com
www.kuka-e.com

South Africa

Jendamark Automation LTD (Agency)
76a York Road
North End
6000 Port Elizabeth
South Africa
Tel. +27 41 391 4700
Fax +27 41 373 3869
www.jendamark.co.za

Taiwan

KUKA Robot Automation Taiwan Co., Ltd.
No. 249 Pujong Road
Jungli City, Taoyuan County 320
Taiwan, R. O. C.
Tel. +886 3 4331988
Fax +886 3 4331948
info@kuka.com.tw
www.kuka.com.tw

Thailand

KUKA Robot Automation (M)SdnBhd
Thailand Office
c/o Maccall System Co. Ltd.
49/9-10 Soi Kingkaew 30 Kingkaew Road
Tt. Rachatheva, A. Bangpli
Samutprakarn
10540 Thailand
Tel. +66 2 7502737
Fax +66 2 6612355
atika@ji-net.com
www.kuka-roboter.de

Czech Republic

KUKA Roboter Austria GmbH
Organisation Tschechien und Slowakei
Sezemická 2757/2
193 00 Praha
Horní Počernice
Czech Republic
Tel. +420 22 62 12 27 2
Fax +420 22 62 12 27 0
support@kuka.cz

Hungary

KUKA Robotics Hungaria Kft.
Fö út 140
2335 Taksony
Hungary
Tel. +36 24 501609
Fax +36 24 477031
info@kuka-robotics.hu

USA

KUKA Robotics Corporation
51870 Shelby Parkway
Shelby Township
48315-1787
Michigan
USA
Tel. +1 866 873-5852
Fax +1 866 329-5852
info@kukarobotics.com
www.kukarobotics.com

UK

KUKA Automation + Robotics
Hereward Rise
Halesowen
B62 8AN
UK
Tel. +44 121 585-0800
Fax +44 121 585-0900
sales@kuka.co.uk

Index