



EG-Baumusterbescheinigung

Nr. M6A 041745 0013 Rev. 01

Zertifikatsinhaber:

B&R
Industrial Automation GmbH
B&R Strasse 1
5142 Eggelsberg
ÖSTERREICH

Produkt:

**Sicherheitsgerichtete programmierbare
elektronische Systeme**

Modell(e):

B&R-Safety-System: mappSafety

Kenndaten:

Sicherheitskennzahlen:

bis zu SIL 3	IEC 61508-1:2010
	IEC 61508-2:2010
	IEC 61508-3:2010
	IEC 61511-1:2016/A1:2017
	IEC 62061:2021
	EN 61800-5-2:2017
bis zu Kat 4, PL e	ISO 13849-1:2023

Diese EG-Baumusterbescheinigung bestätigt die Übereinstimmung des bezeichneten Anhang IV-Produktes mit den einschlägigen Bestimmungen gemäß Artikel 12(3) b bzw. 12(4) a der Richtlinie des Rates 2006/42/EG für Maschinen. Prüfgrundlage ist ausschließlich das zur Prüfung vorgestellte Prüfmuster sowie dessen technische Dokumentation. Details siehe bitte: www.tuvsud.com/ps-zert

Prüfbericht Nr.:

BE94015C

Gültig bis: 2029-02-27

Datum, 2024-02-29

(Matthias Ramold)

Seite 1 von 1

TÜV SÜD Product Service GmbH ist benannte Stelle gemäß der Richtlinie des Rates Nr. 2006/42/EG für Maschinen, notifiziert durch Veröffentlichung im Amtsblatt der EG mit der Kennnummer 0123.

TÜV SÜD Product Service GmbH • Zertifizierstelle • Ridlerstraße 65 • 80339 München • Deutschland



EC-Type Examination Certificate

No. M6A 041745 0013 Rev. 01

Holder of Certificate: **B&R**
Industrial Automation GmbH
B&R Strasse 1
5142 Eggelsberg
AUSTRIA

Product: **Safety Related Programmable Electronic System**

Model(s): **B&R-Safety-System: mappSafety**

Parameters: Safety parameters:
up to SIL 3 IEC 61508-1:2010
IEC 61508-2:2010
IEC 61508-3:2010
IEC 61511-1:2016/A1:2017
IEC 62061:2021
EN 61800-5-2:2017
up to Cat 4, PL e ISO 13849-1:2023

This EC Type Examination Certificate is issued according to Article 12(3) b or 12(4) a of Council Directive 2006/42/EC relating to machinery. It confirms that the listed Annex-IV equipment complies with the principal protection requirements of the directive. It refers only to the sample submitted to TÜV SÜD Product Service GmbH for testing and certification. For details see: www.tuvsud.com/ps-cert

Test report no.: **BE94015C**

Valid until: 2029-02-27

Date, 2024-02-29

(Matthias Ramold)



Choose certainty.
Add value.

Report
on the
Certificate
M6A 041745 0013 Rev. 01
Safety Related Programmable
Electronic System
B&R-Safety-System: mappSafety

Manufacturer:

B&R Industrial Automation GmbH
B&R Strasse 1
A-5142 Eggelsberg

Report No.: BE94015 C
Revision 1.1 dated 2024-02-28

Testing Body:

TÜV SÜD Rail GmbH
Barthstraße 16
D-80339 München

Certification Body:

TÜV Süd Product Service GmbH
Ridlerstraße 65
D-80339 München



Revision Log

Revision	Name	Date	Changes/History
1.0	K. Leupold	2019-06-04	Initial
1.1	K. Leupold	2024-02-28	New certificate



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1 Purpose and Scope

TÜV SÜD Rail GmbH has been contracted by B&R Industrial Automation GmbH to certify the B&R-Safety-System: mappSafety.

The report on the certificate is a set of the user-related results of all steps made during verification and validation of the B&R-Safety-System: mappSafety. It is based on the standards and guidelines listed in chapter 3 and documented in the documents listed in chapter 3.2.

2 System Components

The different modules of the B&R safety system mappSafety covered by this certificate are listed in the Annex A1 to this report.

3 Certification

3.1 Certification Process

The certification of the drive system was done according to the regulations and standards listed in clause 3.3 of this document. This certifies the successful completion of the following test segments:

- I. Functional Safety including
 - Functional safety management (FSM) and safety lifecycle
 - Applied safety development process
 - Analysis of the product structure / architecture (Block-Diagram-FMEA)
 - Analysis of the hardware (FMEDA on component or block level, quantitative analysis)
 - Analysis of the software
 - Verification and validation procedures/activities
 - Fault simulations and software tests
 - Approval of fault avoidance measures
 - Functional tests
- II. Electrical Safety
- III. Susceptibility to environmental errors including
 - Climate and temperature
 - IP degree of protection
 - Mechanical effects
- IV. Electromagnetic compatibility (EMC)
 - Immunity



- V. Safety information in the product documentation (safety manual, user manual, installation and operating instructions).

3.2 Certification Documentation

- Annex A1 (BE94015C_A1) of this certification report
- EC-Type Examination M6A 041745 0010: SafeLOGIC, SafeIO
- EC-Type Examination M6A 041745 0009: ACOPOS P3 SafeMOTION EnDat 2.2
- EC-Type Examination M6A 041745 0008: ACOPOSmotor SafeMOTION EnDat 2.2
- EC-Type Examination M6A 041745 0019 : ACOPOSmulti SafeMOTION EnDat 2.2
- EC-Type Examination M6A 041745 0015 : SafeLOGIC for Mobile Automation
- EC-Type Examination 01/205/5358.01/15 (TÜV Rheinland): ACOPOSmulti SafeMOTION SinCos



3.3 Standards and Guidelines

3.3.1 European directives

The testing was performed using the following directive:

2006/42/EC	DIRECTIVE 2006/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast)
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3.3.2 Product standard

The testing was performed using the following product standard:

EN 61800-5-2:2017	Adjustable speed electrical power drive systems – Part 5.2: Safety requirements -Functional
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3.3.3 Functional Safety

The testing for functional safety is to be performed using the following standards and guidelines:

IEC 61508-1:2010	Functional Safety of electrical/electronic/programmable electronic safety-related systems Part 1: General requirements
IEC 61508-2:2010	Functional Safety of electrical/electronic/programmable electronic safety-related systems Part 2: Requirements for electrical/electronic/programmable electronic safety-related systems
IEC 61508-3:2010	Functional Safety of electrical/electronic/programmable electronic safety-related systems Part 3: Software requirements
IEC 62061:2021	Safety of machinery – Functional safety of safety-related electrical, electronic and programmable electronic control systems
ISO 13849-1:2023	Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design
IEC 61511-1:2016 + AMD1:2017	Functional safety - Safety instrumented systems for the process industry sector – Part 1: Framework, definitions, system, hardware and application programming requirements



4 Testing Results

4.1 Functional Safety

The tests performed and quality assurance measures implemented by the manufacturer have shown that the B&R-Safety-System: mappSafety complies with the testing criteria specified in clause 3.3. The result of the assessment is documented in the technical reports listed in chapter 3.2.

5 General conditions and restrictions

5.1 Safety manual

Conditions of use, prescription of acceptance tests and proof tests are given in the following safety manuals:

- “Sicherheitstechnik mappSafety“

The information, recommendations, specifications and safety instructions given in the belonging manuals shall be read and understood.

6 Certificate Number

This report specifies technical details and implementation conditions required for the application of the Safety Related Programmable Electronic System mappSAFETY by B&R Industrial Automation GmbH on the certificates:

M6A 041745 0013 Rev. 01

Munich, 2024-02-28

Digital
unterschrieben von
Matthias Ramold
Datum: 2024.02.29
11:25:31 +01'00'

M. Ramold
Technical Certifier



Rail

List for tracking of the version releases of components of the safety related automation system:
Liste zur Verfolgung der Versionsfreigaben der Komponenten des sicheren Automatisierungssystems:

B&R Safety System: mappSAFETY EC-Type Examination Certificate No. M6A 041745 0013 Rev. 01

Manufacturer / Hersteller

B&R Industrial Automation GmbH

**B&R Strasse 1
5142 Eggelsberg, Austria**

Testing body / Prüfstelle

TÜV SÜD Rail GmbH

**Barthstrasse 16
80339 München, Germany**

**Annex 1
of the
Report to the Certificate
M6A 041745 0013 Rev. 01
B&R Safety System: mappSAFETY**

**Report No.: BE94015C
Revision 1.30 of the annex, dated 2024-05-07**

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⁽²⁾ not relevant / nicht relevant

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List for tracking of the version releases of components of the safety related automation system:
Liste zur Verfolgung der Versionsfreigaben der Komponenten des sicheren Automatisierungssystems:

B&R Safety System: mappSAFETY EC-Type Examination Certificate No. M6A 041745 0013 Rev. 01

List of certified mappSAFETY versions:

Liste der zertifizierten mappSAFETY Versionen:

No. Nr.	Product group Produktgruppe	mappSAFETY Version									
ID 1	mapp Safety Technology Package	5.7.0	5.8.0 5.8.1	5.9.0 5.9.1	5.10.0 5.10.1	5.11.0 5.11.1	5.12.0 5.12.1 5.12.2	5.13.0	5.14.0 5.14.1	5.15.0	5.16.0
		5.17.0	5.18.0	5.19.0	5.20.0	5.21.0	5.22.0	5.23.0	5.24.0 5.24.1 5.24.2	6.0.0	
ID 2	SafeDESIGNER	5.7.0	5.8.0 5.8.1	5.9.0 5.9.1	5.10.0 5.10.1	5.11.0 5.11.1	5.12.0 5.12.1 5.12.2	5.13.0	5.14.0 5.14.1	5.15.0	5.16.0
		5.17.0	5.18.0	5.19.0	5.20.0	5.21.0	5.22.0	5.23.0	5.24.0 5.24.1 5.24.2	6.0.0	

List of certified AS-Hardwareupgrades / Firmware versions:

Liste der zertifizierten AS-Hardwareupgrades / Firmware Versionen:

No. Nr.	Product group Produktgruppe	Versionen								
ID 1	SafeLOGIC Generation 2	2.1.0.x FW: 570	2.2.0.x FW: 571	2.2.1.x FW: 571	2.3.0.x FW: 572	2.4.0.x FW: 573	2.4.1.x FW: 574	2.4.2.x FW: 575	2.5.0.x FW: 577	
		2.6.0.x FW: 578								
ID 2	SafeLOGIC - X Generation 1	2.1.0.x FW: 570	2.1.0.x FW: 591	2.4.1.x FW: 591	2.6.0.x FW: 593					
ID 3	SafeLOGIC - X Generation 2	2.1.0.x FW: 570	2.2.0.x FW: 580	2.4.0.x FW: 590	2.4.1.x FW: 590	2.4.2.x FW: 591	2.4.3.x FW: 592	2.6.0.x FW: 593		
ID 4	SCMar	FW: 570	FW: 591	FW: 592						
ID 5	Safe Analog Input Modules	2.1.0.x FW: 570	2.2.0.x FW: 571	2.3.0.x FW: 572	2.4.0.x FW: 573	2.5.0.x FW: 574				
ID 6	Safe Digital Input Modules ¹	2.1.0.x FW: 570	2.2.0.x FW: 571	2.3.0.x FW: 572	2.3.1.x FW: 573	2.4.0.x FW: 574	2.6.0.x FW: 580			
ID 7	Safe Digital Output Modules	2.1.0.x FW: 570	2.2.0.x FW: 571	2.2.1.x FW: 572	2.4.0.x FW: 573					
ID 8	Safe Combined Modules Generation 1	2.1.0.x FW: 570	2.2.0.x FW: 571	2.3.0.x FW: 573 ²	2.4.0.x FW: 574 ²	2.6.0.x FW: 580				
ID 9	Safe Combined Modules Generation 2	2.1.0.x FW: 570	2.2.0.x FW: 571	2.3.0.x FW: 572	2.3.1.x FW: 573	2.4.0.x FW: 574	2.6.0.x FW: 580			
ID 10	Safe Relais Modules	2.1.0.x FW: 570	2.2.0.x FW: 571	2.3.0.x FW: 572	2.4.0.x FW: 573 ³	2.4.1.x FW: 574	2.5.0.x FW: 575	2.6.0.x FW: 580		
ID 11	Safe Powersupply Modules	2.1.0.x FW: 570	2.2.0.x FW: 571	2.3.0.x FW: 572	2.3.1.x FW: 573	2.4.0.x FW: 574				
ID 12	Safe Counter Modules	2.1.0.x FW: 570	2.2.0.x FW: 572	2.3.0.x FW: 573	2.3.1.x FW: 574	2.4.0.x FW: 575	2.5.0.x FW: 576	2.5.0.x FW: 577		
ID 13	Safe reaction Technology Modules Generation 1	2.1.0.x FW: 570	2.2.0.x FW: 571	2.3.0.x FW: 573	2.4.0.x FW: 574	2.4.1.x FW: 575				
ID 14	ACOPOS P3 SafeMOTION	2.1.0.x FW: 570	2.2.0.x FW: 590	2.3.0.x FW: 600	2.4.0.x FW: 611					
ID 15	ACOPOSmulti SafeMOTION EnDat2.2	2.1.0.x FW: 570	2.2.0.x FW: 570	2.4.0.x FW: 611	2.5.0.x FW: 620	2.5.1.x FW: 621				
ID 16	ACOPOSmulti SafeMOTION SinCos	2.1.0.x FW: 570	2.2.0.x FW: 570	2.4.0.x FW: 611						

¹ For 9AX2X.01-000, 9APLK.01-000 and B05000* only FW570 implemented.

² Only created for X20(c)SC2212.

³ Only created for X90RO440.04-S1.

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List for tracking of the version releases of components of the safety related automation system:
Liste zur Verfolgung der Versionsfreigaben der Komponenten des sicheren Automatisierungssystems:

B&R Safety System: mappSAFETY EC-Type Examination Certificate No. M6A 041745 0013 Rev. 01

Rail

ID 17	ACOPOSmotor SafeMOTION	2.1.0.x FW: 570	2.2.0.x FW: 570	2.4.0.x FW: 611					
ID 18	SafeLOGIC for Mobile Automation	2.1.0.x FW: 572	2.2.0.x FW: 573	2.3.0.x FW: 574	2.4.0.x FW: 575	2.5.0.x FW: 576	2.5.1.x FW: 576	2.5.2.x FW: 578	2.5.3.x FW: 579
		2.6.0.0 FW: 590 ⁴							
ID 20	ACOPOSmulti SafeMOTION EnDat2.2 Gen2	2.4.0.x FW: 611							

Explanation of product groups:

Erklärung der Produktgruppen

Product name / Product group Produktbezeichnung / Produktgruppe	Consists of: Besteht aus:
mapp Safety Technology Package	- MpSfDomMgr SafeDOMAINmanager Library - SfDomDrv SafeDOMAINdriver Library - SfDomain SafeDOMAIN Library - Sicherheitstechnik-GER Documentation of mapp Safety
SafeDESIGNER ⁵	- SafeDESIGNER SafeDESIGNER Engineering Tool - PLCopen_SF SafeDESIGNER PLCopen Library - Table_SF SafeDESIGNER Table Library - RoboticCtrl_SF_4 SafeDESIGNER Robotic Library - Utilities_SF SafeDESIGNER Utilities Library - openSAFETY_BuR_Motion_SF openSAFETY Motion Profile Support - ProfiSafe_SF SafeDESIGNER PROFIsafe Library - Math_Utilities_SF SafeDESIGNER Mathematics Library - LightCurtain_SF SafeDESIGNER Lightcurtain Library - DATA_to_SafeDATA_SF SafeDESIGNER DATAtoSafeDATA Library - PLCopen_Press_SF SafeDESIGNER Press Library - CANopen_Safety_SF SafeDESIGNER CANopen Safety Library
SafeLOGIC Generation 2	- X20SL8100 SafeLOGIC Basic - X20SL8101 SafeLOGIC Basic with local X2X - X20SL8110 SafeLOGIC Basic with IF - Slot - X20cSL8100 coated SafeLOGIC Basic - X20cSL8101 coated SafeLOGIC Basic with local X2X Certified hardware revisions: see EC-Type examination: M6A 041745 0010
SafeLOGIC for Mobile Automation	- X90SL104.48-S1 mobile SafeLOGIC with 24 Channel SI, 24 channel SO - X90SL104.60-S1 mobile SafeLOGIC with 18 Channel SI, 30 channel SO Certified hardware revisions: see EC-Type examination: M6A 041745 0015
SafeLOGIC - X Generation 1	- X20SLX210 SafeLOGIC with Safe Digital Input, 2 channel - X20SLX410 SafeLOGIC with Safe Digital Input, 4 channel - X20SLX910 SafeLOGIC with Safe Digital Input, 20 channel - X20cSLX410 coated SafeLOGIC with Safe Digital Input, 4 channel - X20cSLX910 coated SafeLOGIC with Safe Digital Input, 20 channel Certified hardware revisions: see EC-Type examination: M6A 041745 0010
SafeLOGIC - X Generation 2	- X20SLX811 SafeLOGIC with Safe Digital Input, 8 channel - X20SLX806 SafeLOGIC with 8 channel SI, 6 channel SO - X20SLX842 SafeLOGIC with 8 channel SI, 6 channel SO - X20SLX402 SafeLOGIC with 4 channel SI, 2 channel SO - X20cSLX402 coated SafeLOGIC with 4 channel SI, 2 channel SO Certified hardware revisions: see EC-Type examination: M6A 041745 0010
SCMar	openSAFETY Configuration Manager for SafeLOGIC - X devices
Safe Analog Input Modules	- X20SA4430 Safe Analog Input, 2x2 channel - X20ST4492 Safe Temperature Input, 2x2 channel - X20cSA4430 coated Safe Analog Input, 2x2 channel Certified hardware revisions: see EC-Type examination: M6A 041745 0010
Safe Digital Input Modules	- X20SI2100 Safe Digital Input, 2 channel - X20SI4100 Safe Digital Input, 4 channel - X20SI9100 Safe Digital Input, 20 channel 9AX2X.01-000 Safe Digital Input, 8 channel SI 9APLK.01-000 Safe Digital Input, 8 channel SI - B050006543xx-yy Safe Digital Input, 8 channel SI

⁴ Only created for X90SL104.60-S1.

⁵ System requirements of safety related libraries are documented in the dedicated user manuals.

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B&R Safety System: mappSAFETY EC-Type Examination Certificate No. M6A 041745 0013 Rev. 01

Rail

	• B050006677xx-yy • X67SI8103 • X20cSI4100 • X20cSI9100	Safe Digital Input, 8 channel SI Safe Digital Input, 8 channel SI coated Safe Digital Input, 4 channel coated Safe Digital Input, 20 channel Certified hardware revisions: see EC-Type examination: M6A 041745 0010
Safe Digital Output Modules	• X20SO2110 • X20SO2120 • X20SO4110 • X20SO4120 • X20SO6300 • X20cSO4110 • X20cSO4120 • X20cSO6300	Safe Digital Output, 2 channel, 0.5 A Safe Digital Output, 2 channel, 2 A Safe Digital Output, 4 channel, 0.5 A Safe Digital Output, 4 channel, 2 A Safe Digital Output, 6 channel, 0.2 A coated Safe Digital Output, 4 channel, 0.5 A coated Safe Digital Output, 4 channel, 2 A coated Safe Digital Output, 6 channel, 0.2 A Certified hardware revisions: see EC-Type examination: M6A 041745 0010
Safe Combined Modules Generation 1	• X20SC2212 • X67SC4122.L12 • X20cSC2212	Safe Digital Mixed, 6 channel SI, 2 channel SO, 0.5 A Safe Digital Mixed, 8 channel SI, 4 channel SO 2 A coated Safe Digital Mixed, 6 channel SI, 2 channel SO, 0.5 A Certified hardware revisions: see EC-Type examination: M6A 041745 0010
Safe Combined Modules Generation 2	• X20SC0806 • X20SC0842 • X20SC0402 • X20SI8110 • X20SI4110	Safe Digital Mixed with 8 channel SI, 6 channel SO Safe Digital Mixed with 8 channel SI, 6 channel SO Safe Digital Mixed with 4 channel SI, 2 channel SO Safe Digital Mixed with 8 channel SI Safe Digital Mixed with 4 channel SI Certified hardware revisions: see EC-Type examination: M6A 041745 0010
Safe Relais Modules	• X20SC2432 • X20SO2530 • X20SO6530 • X20cSO6530 • X20cSC2432 • X20cSO2530 • X90RO440.04-S1	Safe Digital Mixed, 2 channel SI, 2 channel relay 6 A Safe Digital Output, 2 channel relay SO, 240 V Safe Digital Output, 6 channel relay SO, 240 V coated Safe Digital Output, 6 channel relay SO, 240 V coated Safe Digital Mixed, 2 channel SI, 2 channel relay 6 A coated Safe Digital Output, 2 channel relay SO, 240 V mobile Safe Digital Output, 4 channel relay SO, 9-48 V Certified hardware revisions: see EC-Type examination: M6A 041745 0010
Safe Powersupply Modules	• X20SP1130	Safe Digital Output, 1 channel, 10 A, Power Supply
Safe Counter Modules	• X20SD1207 • X20cSD1207	safe digital counter module, 1 failsafe counter channel, 7 kHz, 24 VDC coated safe digital counter module, 1 failsafe counter channel, 7 kHz, 24 VDC Certified hardware revisions: see EC-Type examination: M6A 041745 0010
Safe reaction Technology Modules Generation 1	• X20SRT806 • X20SRT842 • X20SRT402	ReAction for Safety with 8 channel SI, 6 channel SO ReAction for Safety with 8 channel SI, 6 channel SO ReAction for Safety with 4 channel SI, 2 channel SO Certified hardware revisions: see EC-Type examination: M6A 041745 0010
ACOPOS P3 SafeMOTION	• 8ESMC59314 • 8ESMC59315 • 8ESMC59316	ACOPOS P3 SafeMOTION EnDat2.2 - 1 Axis servo drive ACOPOS P3 SafeMOTION EnDat2.2 - 2 Axis servo drive ACOPOS P3 SafeMOTION EnDat2.2 - 3 Axis servo drive Certified hardware revisions: see EC-Type examination: M6A 041745 0009
ACOPOSmulti SafeMOTION EnDat 2.2	• 8BVS2SAFE1-1	ACOPOSmulti SafeMOTION EnDat2.2 Certified hardware revisions: see EC-Type examination: M6A 041745 0018
ACOPOSmulti SafeMOTION SinCos	• 8BVS2_21ENC1-1	ACOPOSmulti SafeMOTION SinCos Certified hardware revisions: see EC-Type examination: 01/205/5358.02/20 (TÜV Rheinland)
ACOPOSmotor SafeMOTION	• 8DSMC59534	ACOPOSmotor SafeMOTION EnDat2.2 Certified hardware revisions: see EC-Type examination: M6A 041745 0008
ACOPOSmulti SafeMOTION EnDat 2.2 Gen2	• 8BSMC9173	ACOPOSmulti SafeMOTION EnDat2.2 Gen2 Certified hardware revisions: see EC-Type examination: M6A 041745 0019

	Release by Test Body: Freigabe Prüfstelle:	Release by Certification Body: Freigabe Zertifizierstelle:	Release by Manufacturer: Freigabe Hersteller:
Date: Datum:	Klaus Digital unterschrieben von Klaus Leupold Datum: 2024.05.07 13:13:27 +02'00'	 Digital unterschrieben von Matthias Ramold Datum: 2024.05.08 15:03:25 +02'00'	Manfred Kuecher Digital unterschrieben von Manfred Kuecher Datum: 2024.05.13 14:50:32 +02'00'
Signature: Unterschrift:	Leupold		

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