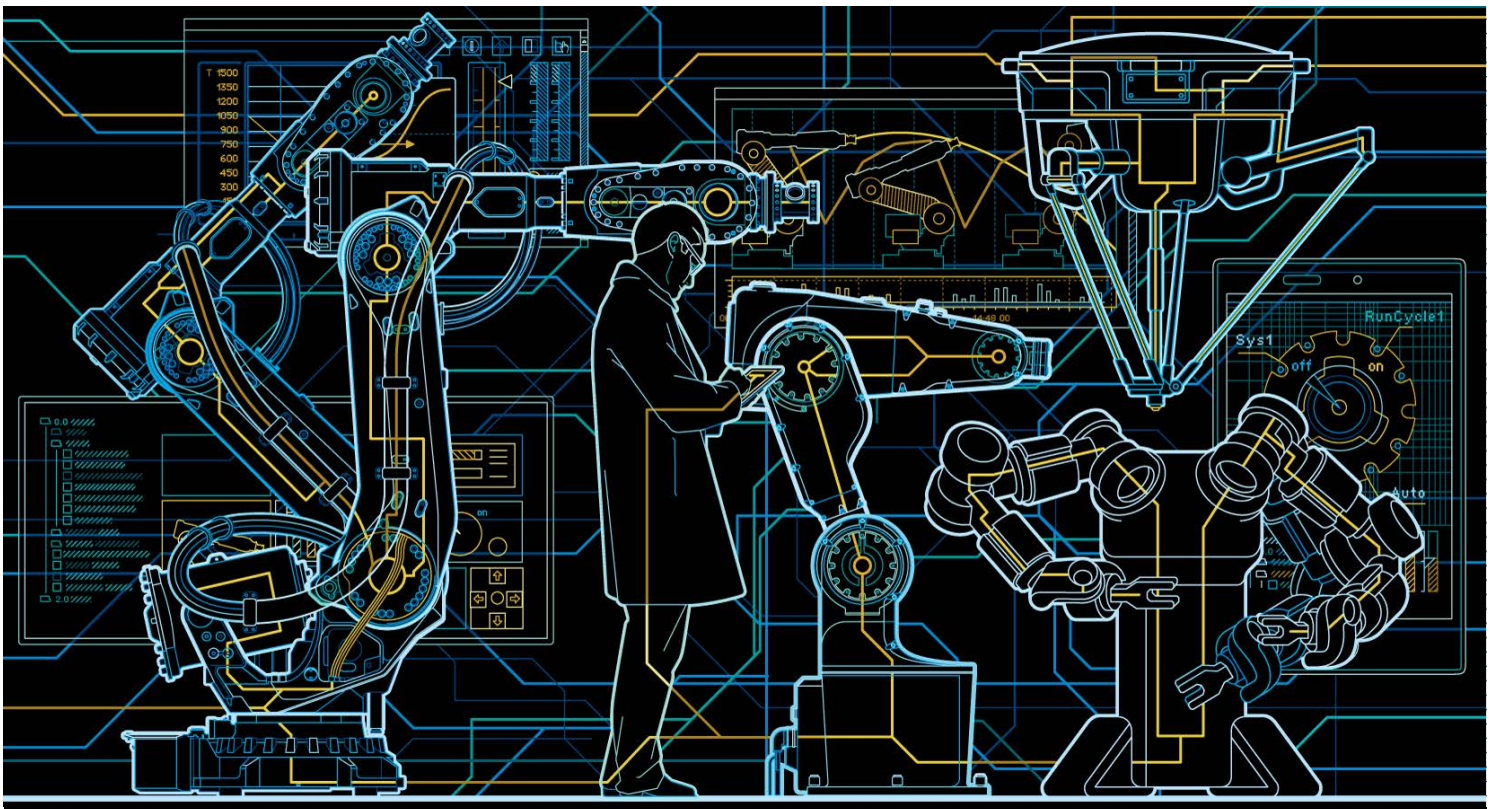

Application manual
Signal description for arc welding products

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Application manual
Signal description for arc welding products

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Overview of this manual

About this manual

This manual explains the signals used for arc welding products from ABB Robotics.

Usage

This manual can be used either as a reference to find out if an option is the right choice for solving a problem, or as a description of the signals.

Who should read this manual?

This manual is intended for:

- installation personnel
- robot programmers

Prerequisites

The reader should...

- be familiar with industrial robots and their terminology
- be familiar with the RAPID programming language
- be familiar with system parameters and how to configure them.

Reference documents

References	Document ID
Technical reference manual - RAPID overview	*3HAC050947-001*
Technical reference manual - RAPID Instructions, Functions and Data types	*3HAC050917-001*
Technical reference manual - System parameters	*3HAC050948-001*

Revisions

Revision	Description
-	Released with RobotWare 6.03.

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Product documentation, IRC5

Categories for user documentation from ABB Robotics

The user documentation from ABB Robotics is divided into a number of categories. This listing is based on the type of information in the documents, regardless of whether the products are standard or optional.

All documents listed can be ordered from ABB on a DVD. The documents listed are valid for IRC5 robot systems.

Product manuals

Manipulators, controllers, DressPack/SpotPack, and most other hardware is delivered with a **Product manual** that generally contains:

- Safety information.
- Installation and commissioning (descriptions of mechanical installation or electrical connections).
- Maintenance (descriptions of all required preventive maintenance procedures including intervals and expected life time of parts).
- Repair (descriptions of all recommended repair procedures including spare parts).
- Calibration.
- Decommissioning.
- Reference information (safety standards, unit conversions, screw joints, lists of tools).
- Spare parts list with exploded views (or references to separate spare parts lists).
- Circuit diagrams (or references to circuit diagrams).

Technical reference manuals

The technical reference manuals describe reference information for robotics products.

- *Technical reference manual - Lubrication in gearboxes*: Description of types and volumes of lubrication for the manipulator gearboxes.
- *Technical reference manual - RAPID overview*: An overview of the RAPID programming language.
- *Technical reference manual - RAPID Instructions, Functions and Data types*: Description and syntax for all RAPID instructions, functions, and data types.
- *Technical reference manual - RAPID kernel*: A formal description of the RAPID programming language.
- *Technical reference manual - System parameters*: Description of system parameters and configuration workflows.

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Application manuals

Specific applications (for example software or hardware options) are described in **Application manuals**. An application manual can describe one or several applications.

An application manual generally contains information about:

- The purpose of the application (what it does and when it is useful).
- What is included (for example cables, I/O boards, RAPID instructions, system parameters, DVD with PC software).
- How to install included or required hardware.
- How to use the application.
- Examples of how to use the application.

Operating manuals

The operating manuals describe hands-on handling of the products. The manuals are aimed at those having first-hand operational contact with the product, that is production cell operators, programmers, and trouble shooters.

The group of manuals includes (among others):

- *Operating manual - Emergency safety information*
- *Operating manual - General safety information*
- *Operating manual - Getting started, IRC5 and RobotStudio*
- *Operating manual - Introduction to RAPID*
- *Operating manual - IRC5 with FlexPendant*
- *Operating manual - RobotStudio*
- *Operating manual - Trouble shooting IRC5*, for the controller and manipulator.

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Safety

Safety of personnel

When working inside the robot controller it is necessary to be aware of voltage-related risks.

A danger of high voltage is associated with the following parts:

- Devices inside the controller, for example I/O devices, can be supplied with power from an external source.
- The mains supply/mains switch.
- The power unit.
- The power supply unit for the computer system (230 VAC).
- The rectifier unit (400-480 VAC and 700 VDC). Capacitors!
- The drive unit (700 VDC).
- The service outlets (115/230 VAC).
- The power supply unit for tools, or special power supply units for the machining process.
- The external voltage connected to the controller remains live even when the robot is disconnected from the mains.
- Additional connections.

Therefore, it is important that all safety regulations are followed when doing mechanical and electrical installation work.

Safety regulations

Before beginning mechanical and/or electrical installations, ensure you are familiar with the safety regulations described in *Operating manual - General safety information*[1].

[1] This manual contains all safety instructions from the product manuals for the manipulators and the controllers.

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1 General I/O description

General

This description covers all signals in a standard arc welding system based on the standard process interface delivered by ABB Robotics.

By using the arc welding system configuration add-in, the I/O configuration for the selected process equipment and options will be installed.

Composition

There are four standard I/O places inside the cabinet.

The system interface is equipped with the following I/O devices as standard:

- Simulated I/O device
- Process interface device
- Digital I/O device
- Software I/O device

Unused I/O device places can be equipped with other I/O devices, as described in the product specification.

Usage

The number of I/O signals to be used is determined by the welding cell configuration:

- Welding equipment
- Positioners
- Operator panel
- Cleaning equipment
- Search sensor
- Other options

To minimize the number of I/O devices and signals, a simulated I/O device is used for some system signals and operator ready signals. The operator ready function is handled using I/O cross connections with logical conditions.

System configuration

The complete I/O configuration for a specific system setup is obtained during the boot sequence. After start-up, we recommend creating a backup of the system to save the system configuration.

Related information

Physical connections of I/O signals are shown in the electrical drawing for the signal interface (inside the controller cabinet).

I/O devices, CAN-bus connection, and address keying are described in the product manual for the robot controller.

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Continued

Electrical data is described in the product specification for the robot.

Note

Signals without names in the following tables are not configured.

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2 Signal configuration

2.1 Signal configuration, B_AW_PROC_40

Introduction

This chapter describes the standard process configuration delivered by ABB Robotics. Process Interface DeviceNet for ESAB Aristo™ Mig and W8.

Board configuration

Address	Name	Board type	Bus
40	B_AW_PROC_40	ESAB_W8	CAN DeviceNet
	B_SIM_AW	Simulated digital I/O	Virtual

Digital outputs

Name	Description
doWeld	Activate power source
doQuickStop	Quick stop of power source
doEmStop	Emergency stop of power source
doFeed	Activate wire feeder
doGas	Activate gas valve
doAir	Activate air cleaning of torch
doFeedBwd	Activate wire feeder reverse
doTouchSenseActive	Activate tactile search mode

Digital inputs

Device Map	Name	Description
48	*diArcEst*	Arc established
49	*diWeldEst*	Weld established
50	*diTouchSenseContact*	Search contact established
52	*diWF1Selected*	Wire feed unit 1 selected
53	*diWF2Selected*	Wire feed unit 2 selected
54	*diWF3Selected*	Wire feed unit 3 selected
55	*diWF4Selected*	Wire feed unit 4 selected
56	*diError1*	Error code
57	*diError2*	Error code
58	*diError3*	Error code
59	*diError4*	Error code
60	*diError5*	Error code
61	*diError6*	Error code
62	*diError7*	Error code

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Device Map	Name	Description
63	*diError8*	Error code
64	*diWduError*	Error in weld data unit
65	*diPsError*	Error in power source
66	*diWfError*	Error in wire feed unit
69	*diCollisionDetect*	Torch collision detected

Group outputs

Device Map	Name	Description
8-11	*goWireFeeder*	Activate wire feed unit
16-31	*goSchedule*	Activate schedule number in power source

Analog inputs

Device Map	Name	Description
1	*aiVoltage*	Measured voltage
2	*aiCurrent*	Measured current
3	*aiPower*	Measured power

Simulated I/O signals

Simulated outputs

Device Map	Name	Description
10	*soFeed*	Activate manual wire feed

Simulated inputs

Device Map	Name	Description
20	*siWire*	Wire ok
30	*siWater*	Water ok
40	*siGas*	Gas ok

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2.2 Process interface ESAB, robot 2, B_AW_PROC_41

I/O board configuration, robot 2

This chapter describes the standard process configuration delivered by ABB Robotics. Process Interface DeviceNet for ESAB Aristo™ Mig and W8.

Board configuration

Address	Name	Board type	Bus
41	B_AW_PROC_41	ESAB_W8	CAN DeviceNet
	B_SIM_AW	Simulated digital I/O	Virtual

Digital outputs

Device Map	Name	Description
0	*doWeld_2*	Activate power source
1	*doQuickStop_2*	Quick stop of power source
2	*doEmStop_2*	Emergency stop of power source
3	*doFeed_2*	Activate wire feeder
4	*doGas_2*	Activate gas valve
5	*doAir_2*	Activate air cleaning of torch
6	*doFeedBwd_2*	Activate wire feeder reverse
15	*doTouchSenseActive_2*	Activate tactile search mode

Digital inputs

Device Map	Name	Description
48	*diArcEst_2*	Arc established
49	*diWeldEst_2*	Weld established
50	*diTouchSenseContact_2*	Search contact established
52	*diWF1Selected_2*	Wire feed unit 1 selected
53	*diWF2Selected_2*	Wire feed unit 2 selected
54	*diWF3Selected_2*	Wire feed unit 3 selected
55	*diWF4Selected_2*	Wire feed unit 4 selected
56	*diError1_2*	Error code
57	*diError2_2*	Error code
58	*diError3_2*	Error code
59	*diError4_2*	Error code
60	*diError5_2*	Error code
61	*diError6_2*	Error code
62	*diError7_2*	Error code
63	*diError8_2*	Error code

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Device Map	Name	Description
64	*diWduError_2*	Error in weld data unit
65	*diPsError_2*	Error in power source
66	*diWfError_2*	Error in wire feed unit
69	*diCollisionDetect_2*	Torch collision detected

Group outputs

Device Map	Name	Description
8-11	*goWireFeeder_2*	Activate wire feed unit
16-31	*goSchedule_2*	Activate schedule number in power source

Analog inputs

Device Map	Name	Description
1	*aiVoltage_2*	Measured voltage
2	*aiCurrent_2*	Measured current
3	*aiPower _2*	Measured power

Simulated I/O signals

Simulated outputs

Device Map	Name	Description
11	*soFeed_2*	Activate manual wire feed

Simulated inputs

Device Map	Name	Description
21	*siWire_2*	Wire ok
31	*siWater_2*	Water ok
41	*siGas_2*	Gas ok

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2.3 Process interface ESAB Aristo™ Mig, external equipment, B_AW_OPT_14

Introduction

This chapter describes the standard process configuration delivered by ABB Robotics. Process Interface DeviceNet for ESAB Aristo™ Mig, external equipment, Torch Cleaner, Wire Cutter, and BullsEye.

Board configuration

Address	Name	Board type	Bus
41	B_AW_OPT_14	Digital I/O board	CAN DeviceNet

Digital outputs

Device Map	Connection	Name	Description
0	X1:1	*doMCLN_TCH*	Mechanical torch cleaning
1	X1:2	*doMLUB_TCH*	Torch lubrication
2	X1:3	*doWIRE_CUT*	Wire cutter
3	X1:4	*doMCLN_TCH_2*	Mechanical torch cleaning (robot 2)
4	X1:5	*doMLUB_TCH_2*	Torch lubrication (robot 2)
5	X1:6	*doWIRE_CUT_2*	Wire cutter (robot 2)

Digital inputs

Device Map	Connection	Name	Description
0	X3:1	*diMCLN_FIN*	Torch cleaning finished
1	X3:2	*sen1*	BullsEye sensor
2	X3:3	*diMCLN_FIN_2*	Torch cleaning finished (robot 2)
3	X3:4	*sen2*	BullsEye sensor (robot 2)

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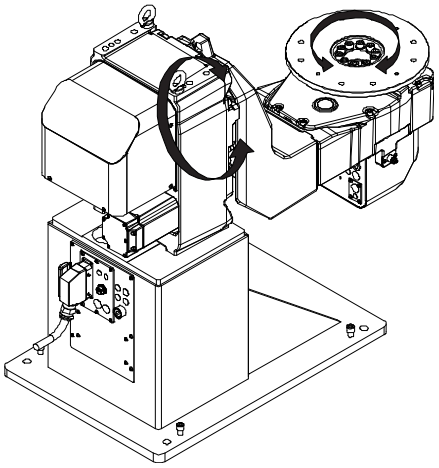
3 Positioner interface IRBP A

IRBP A



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I/O board configuration for positioner

Address	Name	Board type	Digital inputs	Digital outputs	Digital inputs	Analog outputs	Relay outputs
-	B_POS_SIM	Simulated digital I/O					
Internal bus	DRVIO_1 [i]	Digital I/O	7	12	-	-	-

[i] The number relates to the drive module where the I/O board is located, the example shows drive module 1.

Simulated outputs and inputs for B_POS_SIM

Simulated outputs

DeviceMap	Name	Description
0	*soACT_STN1*	Activate mechanical unit 1
1	*soACT_STN2*	Activate mechanical unit 2

Simulated inputs

DeviceMap	Name	Description
0	*siSTN1_ACT*	Mechanical unit 1 activated
1	*siSTN2_ACT*	Mechanical unit 2 activated

I/O signal configuration for DRVIO_1

Digital outputs TB4

Output	DeviceMap	Name	Description	Connected to unit
1	0	*doACT_K1*	Activate mechanical unit 1	Positioner

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Continued

Output	DeviceMap	Name	Description	Connected to unit
2	1	*doACT_K2*	Activate mechanical unit 2	Positioner
3	2	*doACT_K3*	Activate mechanical unit 3	Positioner
4	3	*doACT_K4*	Activate mechanical unit 4	Positioner
5	4			
6	5	*doACT_K11*	Activate release break 1	Positioner
7	6	*doACT_K12*	Activate release break 2	Positioner
8	7	*doACT_K13*	Activate release break 3	Positioner
9	8	*doACT_K14*	Activate release break 4	Positioner
10	9			
11	10			
12	11			
13		*0V Output*		
14		*24V Output 1-12*		

Digital inputs TB3

Input	DeviceMap	Name	Description	Connected to unit
1	0	*diK1_ACT*	Mechanical unit 1 activated	Positioner
2	1	*diK2_ACT*	Mechanical unit 2 activated	Positioner
3	2	*diK3_ACT*	Mechanical unit 3 activated	Positioner
4	3	*diK4_ACT*	Mechanical unit 4 activated	Positioner
5	4			
6	5			
7	6			
8		0 V input 1-7		

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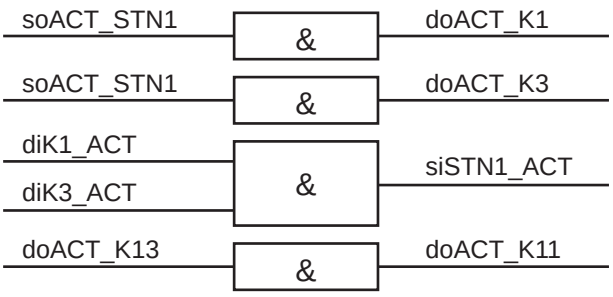
Configuration for cross-connections

STN1



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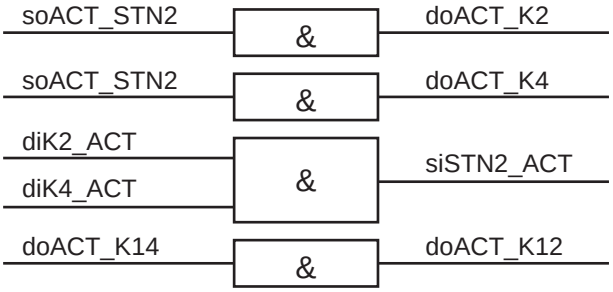
STN2



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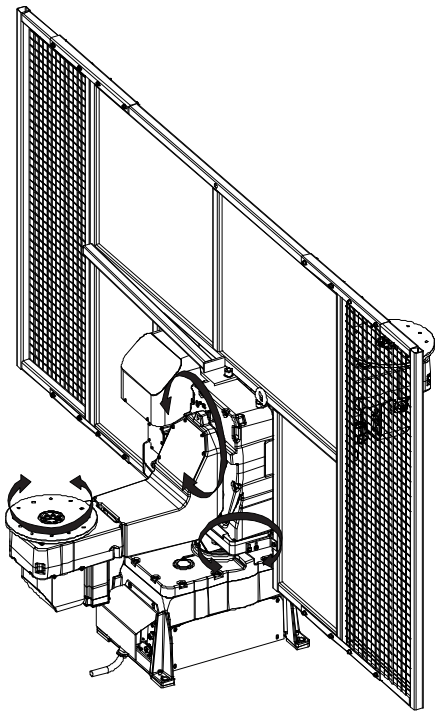
4 Positioner interface IRBP B/D

IRBP B/D



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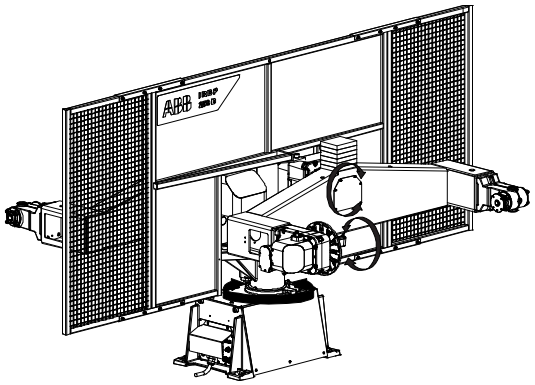
IRBP B



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IRBP D

I/O board configuration for positioner

Address	Name	Board type	Digital inputs	Digital outputs	Digital inputs	Analog outputs	Relay outputs
-	B_POS_SIM	Simulated digital I/O					
Internal bus	DRVIO_1 [i]	Digital I/O	7	12	-	-	-

[i] The number relates to the drive module where the I/O board is located, the example shows drive module 1.

Simulated outputs and inputs for B_POS_SIM

Simulated outputs

DeviceMap	Name	Description
0	*soACT_STN1*	Activate mechanical unit 1
1	*soACT_STN2*	Activate mechanical unit 2
2	*soACT_INTCH*	Activate mechanical unit 3

Simulated inputs

DeviceMap	Name	Description
0	*siSTN1_ACT*	Mechanical unit 1 activated

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Continued

DeviceMap	Name	Description
1	*siSTN2_ACT*	Mechanical unit 2 activated
2	*si_INTCH_ACT*	Mechanical unit 3 activated

I/O signals configuration for DRVIO_1

Digital outputs TB4

Output	DeviceMap	Name	Description	Connected to unit
1	0	*doACT_K1*	Activate mechanical unit 1	Positioner
2	1	*doACT_K2*	Activate mechanical unit 2	Positioner
3	2	*doACT_K3*	Activate mechanical unit 3	Positioner
4	3	*doACT_K4*	Activate mechanical unit 4	Positioner
5	4	*doACT_K5*	Activate mechanical unit 5	Positioner
6	5	*doACT_K11*	Activate release break 1	Positioner
7	6	*doACT_K12*	Activate release break 2	Positioner
8	7	*doACT_K13*	Activate release break 3	Positioner
9	8	*doACT_K14*	Activate release break 4	Positioner
10	9	*doACT_K15*	Activate release break 5	Positioner
11	10			
12	11			
13		*0V Output*		
14		*24V Output 1-12*		

Digital inputs TB3

Input	DeviceMap	Name	Description	Connected to unit
1	0	*diK1_ACT*	Mechanical unit 1 activated	Positioner
2	1	*diK2_ACT*	Mechanical unit 2 activated	Positioner
3	2	*diK3_ACT*	Mechanical unit 3 activated	Positioner
4	3	*diK4_ACT*	Mechanical unit 4 activated	Positioner
5	4	*diK5_ACT*	Mechanical unit 5 activated	Positioner

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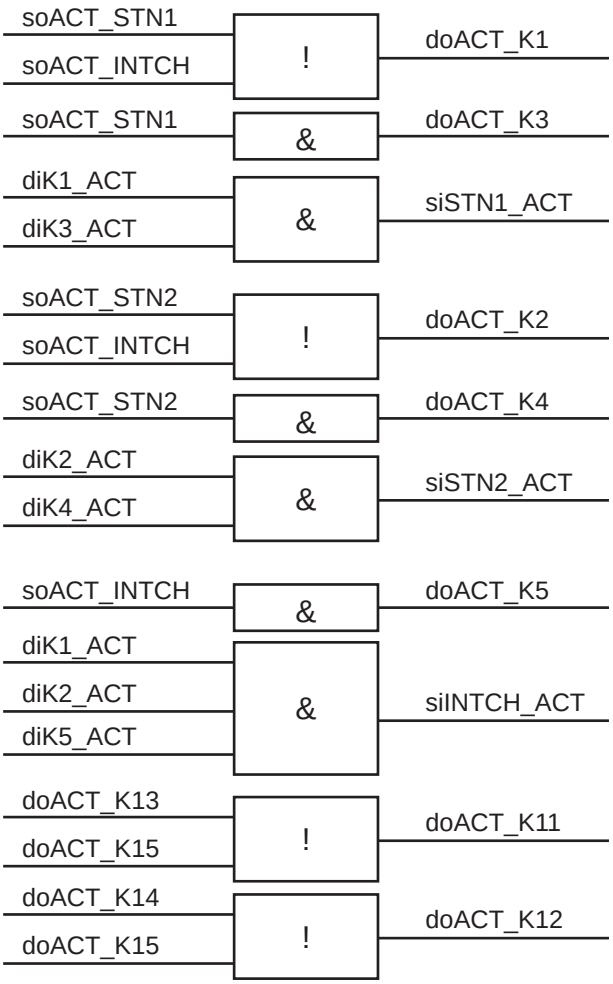
Input	DeviceMap	Name	Description	Connected to unit
6	5			
7	6			
8		0 V input 1-7		

Configuration for cross-connections



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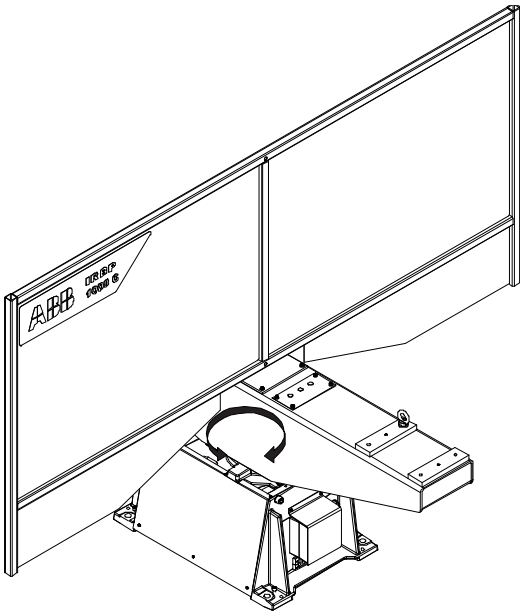
5 Positioner interface IRBP C

IRBP C



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I/O board configuration for positioner

Address	Name	Board type	Digital inputs	Digital outputs	Digital inputs	Analog outputs	Relay outputs
-	B_POS_SIM	Simulated digital I/O					
Internal bus	DRVIO_1 [i]	Digital I/O	7	12	-	-	-

[i] The number relates to the drive module where the I/O board is located, the example shows drive module 1.

Simulated outputs and inputs for B_POS_SIM

Simulated outputs

DeviceMap	Name	Description
0	*soACT_STN1*	Activate mechanical unit 1

Simulated inputs

DeviceMap	Name	Description
0	*siSTN1_ACT*	Mechanical unit 1 activated

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Continued

I/O signal configuration for DRVIO_1

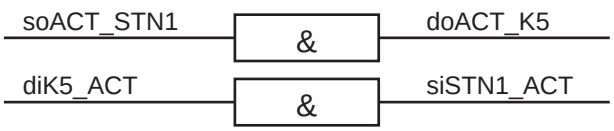
Digital outputs TB4

Output	DeviceMap	Name	Description	Connected to unit
1	0			
2	1			
3	2			
4	3			
5	4	*doACT_K5*	Activate mechanical unit 1	Positioner
6	5			
7	6			
8	7			
9	8			
10	9	*doACT_K15*	Activate release break 1	Positioner
11	10			
12	11			
13		*0V Output*		
14		*24V Output 1-12*		

Digital inputs TB3

Input	DeviceMap	Name	Description	Connected to unit
1	0			
2	1			
3	2			
4	3			
5	4	*diK5_ACT*	Mechanical unit 1 activated	Positioner
6	5	*diLS_1_INPOS*	Limit switch station 1	Station interchange unit
7	6	*diLS_2_INPOS*	Limit switch station 2	Station interchange unit
8		0 V input 1-7		

Configuration for cross-connections



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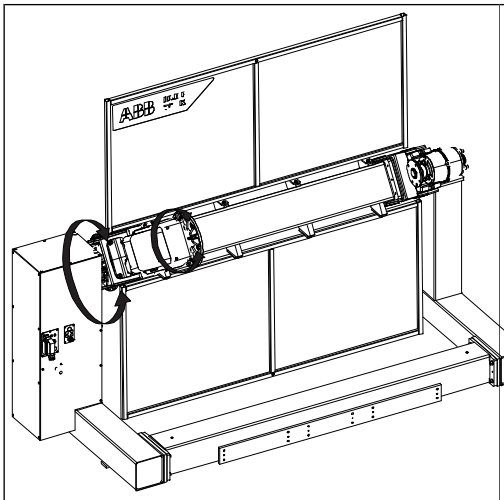
6 Positioner interface IRBP K/R

IRBP K/R



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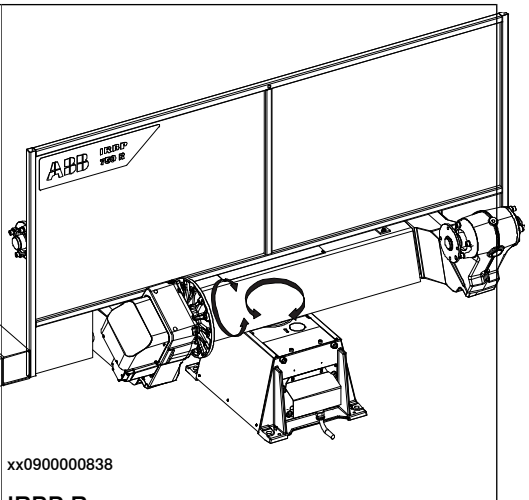
IRBP K



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IRBP R

I/O board configuration for positioner

Address	Name	Board type	Digital inputs	Digital outputs	Digital inputs	Analog outputs	Relay outputs
-	B_POS_SIM	Simulated digital I/O					
Internal bus	DRVIO_1 [i]	Digital I/O	7	12	-	-	-

[i] The number relates to the drive module where the I/O board is located, the example shows drive module 1.

Simulated outputs and inputs for B_POS_SIM

Simulated outputs

DeviceMap	Name	Description
0	*soACT_STN1*	Activate mechanical unit 1
1	*soACT_STN2*	Activate mechanical unit 2
2	*soACT_INTCH*	Activate mechanical unit 3

Simulated inputs

DeviceMap	Name	Description
0	*siSTN1_ACT*	Mechanical unit 1 activated
1	*siSTN2_ACT*	Mechanical unit 2 activated
2	*si_INTCH_ACT*	Mechanical unit 3 activated

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Continued

I/O signals configuration for DRVIO_1

Digital outputs TB4

Output	DeviceMap	Name	Description	Connected to unit
1	0	*doACT_K1*	Activate mechanical unit 1	Positioner
2	1	*doACT_K2*	Activate mechanical unit 2	Positioner
3	2			
4	3			
5	4	*doACT_K5*	Activate mechanical unit 3	Positioner
6	5	*doACT_K11*	Activate release break 1	Positioner
7	6	*doACT_K12*	Activate release break 2	Positioner
8	7			
9	8			
10	9	*doACT_K15*	Activate release break 3	Positioner
11	10			
12	11			
13		*0V Output*		
14		*24V Output 1-12*		

Digital inputs TB3

Input	DeviceMap	Name	Description	Connected to unit
1	0	*diK1_ACT*	Mechanical unit 1 activated	Positioner
2	1	*diK2_ACT*	Mechanical unit 2 activated	Positioner
3	2			
4	3			
5	4	*diK5_ACT*	Mechanical unit 3 activated	Positioner
6	5	*diLS_1_INPOS*	Limit switch station 1	Station interchange unit
7	6	*diLS_2_INPOS*	Limit switch station 2	Station interchange unit
8		0 V input 1-7		

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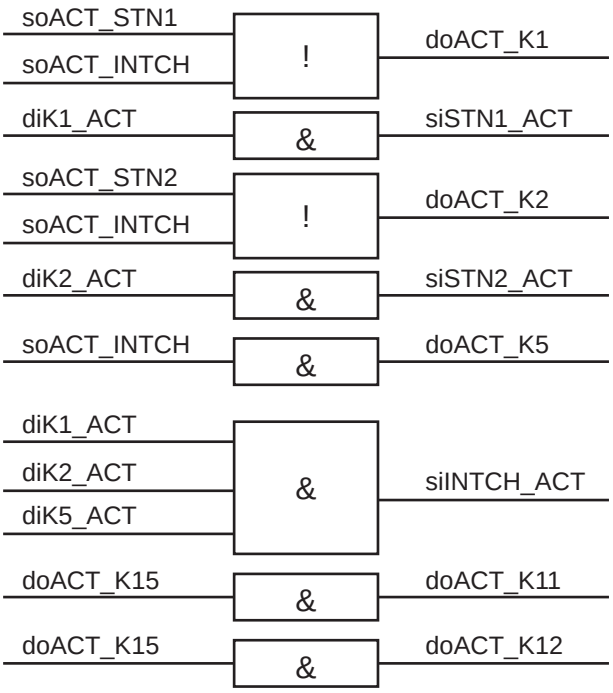
Configuration for cross-connections

K/R 3DU (3 axes)



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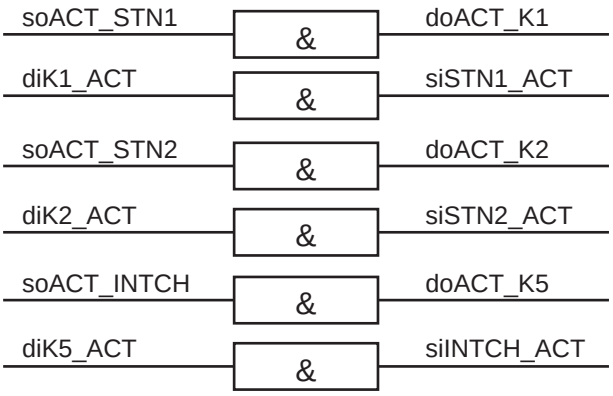
K/R 1DU (1 axis)



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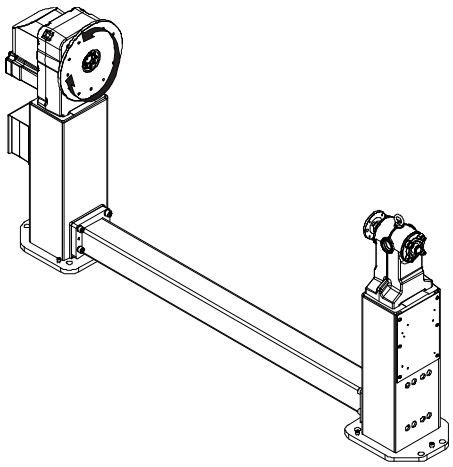
7 Positioner interface IRBP L

IRBP L



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I/O board configuration for positioner

Address	Name	Board type	Digital inputs	Digital outputs	Digital inputs	Analog outputs	Relay outputs
-	B_POS_SIM	Simulated digital I/O					
Internal bus	DRVIO_1 [i]	Digital I/O	7	12	-	-	-

[i] The number relates to the drive module where the I/O board is located, the example shows drive module 1.

Simulated outputs and inputs for B_POS_SIM

Simulated outputs

DeviceMap	Name	Description
0	*soACT_STN1*	Activate mechanical unit 1
1	*soACT_STN2*	Activate mechanical unit 2

Simulated inputs

DeviceMap	Name	Description
0	*siSTN1_ACT*	Mechanical unit 1 activated
1	*siSTN2_ACT*	Mechanical unit 2 activated

I/O signal configuration for DRVIO_1

Digital outputs TB4

Output	DeviceMap	Name	Description	Connected to unit
1	0	*doACT_K1*	Activate mechanical unit 1	Positioner

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Continued

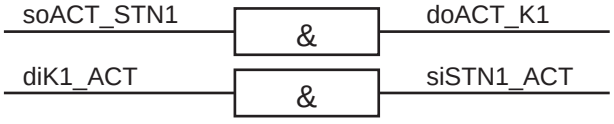
Output	DeviceMap	Name	Description	Connected to unit
2	1	*doACT_K2*	Activate mechanical unit 2	Positioner
3	2			
4	3			
5	4			
6	5	*doACT_K11*	Activate release break 1	Positioner
7	6	*doACT_K12*	Activate release break 2	Positioner
8	7			
9	8			
10	9			
11	10			
12	11			
13		*0V Output*		
14		*24V Output 1-12*		

Digital inputs TB3

Input	DeviceMap	Name	Description	Connected to unit
1	0	*diK1_ACT*	Mechanical unit 1 activated	Positioner
2	1	*diK2_ACT*	Mechanical unit 2 activated	Positioner
3	2			
4	3			
5	4			
6	5			
7	6			
8		0 V input 1-7		

Configuration for cross-connections

STN1



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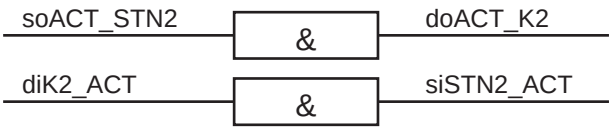
STN2



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8 Operator interface IRBP

I/O board configuration

Address	Name	Board type	Digital inputs	Digital outputs	Digital inputs	Analog outputs
-	B_OP_SIM	Simulated digital I/O				
21	B_OP_21	Digital I/O	12	7	-	-
22	B_OP_22	Digital I/O	12	7	-	-

System functions

Inputs

Signal name	Action
diPROG_START	Start
diPROG_STOP	Stop

Outputs

Signal name	Action
doCYCLE	CycleOn
doMON	MotorOn
doAUTO	AutoOn

I/O signal configuration for B_OP_SIM

Digital outputs

DeviceMap	Name	Description
10	*doCYCLE*	CycleOn
11	*doAUTO*	AutoOn
12	*doMON*	MotorOn

I/O signal configuration for B_OP_21, B_OP_22

Digital outputs

Output	DeviceMap	Name	Description
1	0	*doPROC1*	Operator ready activated on station 1
2	1	*doPROC2*	Operator ready activated on station 2
3	2	*doPERM_ENTR1*	Permit operator ready on station 1
4	3	*doPERM_ENTR1*	Permit operator ready on station 2

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Digital inputs

Output	DeviceMap	Name	Description
1	0	*diPROC1*	Operator ready OK on station 1
2	1	*diPROC2*	Operator ready OK on station 2
3	2	*diPROG_START*	Program start
4	3	*diPROG_STOP*	Program stop

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9 Safety interface SIB V for positioner B/C/D/K/R

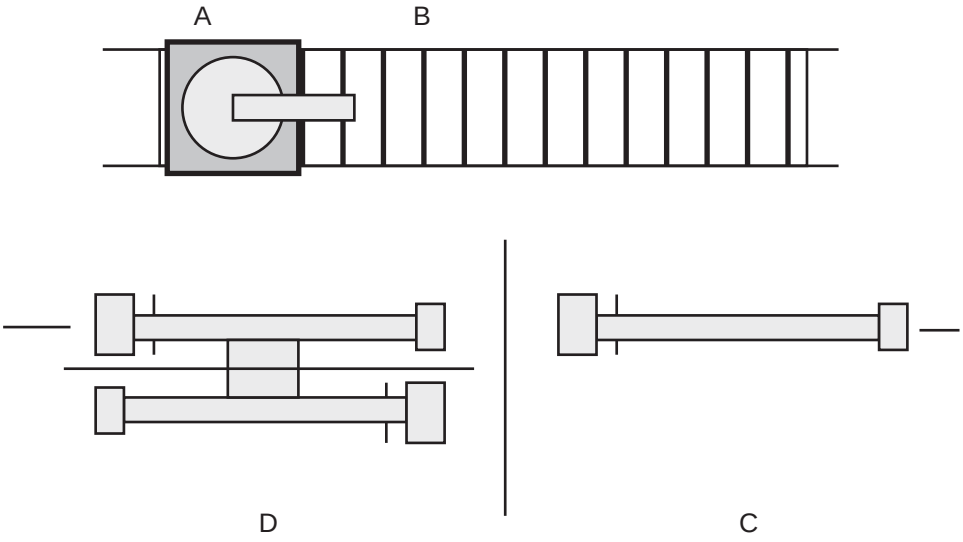
I/O board configuration SIB V

Address	Name	Board type	Digital inputs	Digital outputs
8	*SIB_V_B1*	Safety Interface Board Type 1	56	-
9 [i]	*SIB_V_B1*	Safety Interface Board Type 1	56	-
8	*SIB_V_B2*	Safety Interface Board Type 2	56	-
9i	SIB_V_B2	Safety Interface Board Type 2	56	-
8	SIB_V_B3	Safety Interface Board Type 3	56	-
9i	SIB_V_B3	Safety Interface Board Type 3	56	-

i Used as board number 2 in multi-station applications or combinations between different types of positioners. For example, robot welding station with one positioner type IRBP 250K and one positioner type IRBP 250L.

Example

Robot welding station with one positioner IRBP 250K and one positioner IRBP 250L.



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A	Robot
B	Travel track
C	IRBP 250L
D	IRBP 250K

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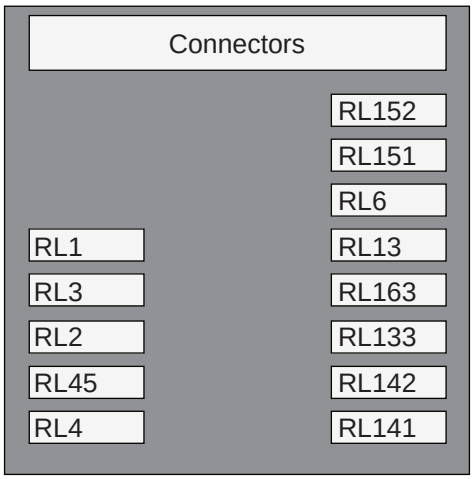
I/O signal configuration SIB_V_B1

Unit for safety supervision SIB_V_B1.



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Digital inputs

DeviceMap	Connection	Name	Description	Connected to unit
0	TB1:8	*diASTOP_CHA*	Run chain AS1-	Panel board/safety switch service door
1	TB1:4	*diASTOP_CHB*	Run chain AS2+	Panel board/safety switch service door
2	TB31:9, TB31:17	*diRL1*	Channel 1 active	Entrance protection area 1
3	TB31:8, TB31:18	*diRL2*	Channel 2 active	Entrance protection area 1
4	TB1:16	*diRL3*	Reset/control of function safety circuits	Entrance protection area 1
5	TB4:4	*diRL4*	Activate entrance protection area 1	Op-panel
6	TB2:9	*diRL13*	Indication station 1 at robot	Station interchange
7	TB2:10	*diRL133*	Indication station 1 at robot (inverted signal)	Station interchange
9	TB2:11	*diRL141*	Indication station 2 at robot	Station interchange
10	TB2:12	*diRL143*	Indication station 2 at robot (inverted signal)	Station interchange

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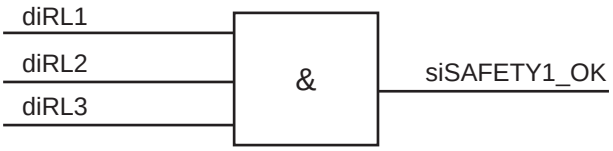
DeviceMap	Connection	Name	Description	Connected to unit
16	TB1:1	*diGSTOP_CHA*	Run chain GS2+	Panel board
17	TB1:5	*diGSTOP_CHB*	Run chain GS1-	Panel board
24	TB111:10, TB31:2	*diRL201*	Channel 1 active	Safety switch service door
25	TB111:8, TB31:4	*diRL202*	Channel 2 active	Safety switch service door
26	TB111:11, TB31:5	*diRL203*	Reset/control of function safety circuits	Safety switch service door
27	TB111:13, TB31:6	*diRL204*	Activate safety circuits service door	Push-button service door

Cross-connections

Cross-connections for unit for safety supervision SIB_V_typ 1.



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10 Safety interface SIB V for positioner A/L/S

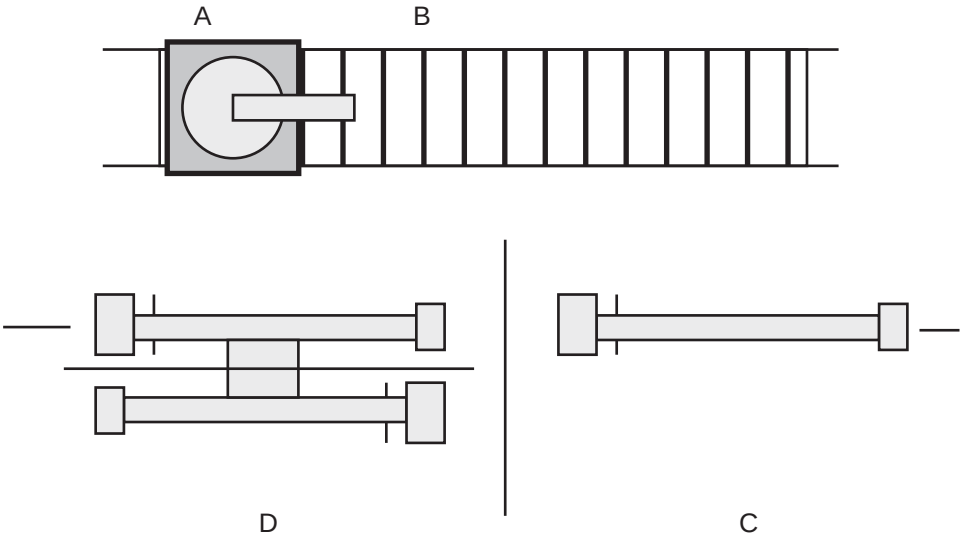
I/O board configuration SIB V

Address	Name	Board type	Digital inputs	Digital outputs
8	*SIB_V_B1*	Safety Interface Board Type 1	56	-
9 [i]	*SIB_V_B1*	Safety Interface Board Type 1	56	-
8	*SIB_V_B2*	Safety Interface Board Type 2	56	-
9i	SIB_V_B2	Safety Interface Board Type 2	56	-
8	SIB_V_B3	Safety Interface Board Type 3	56	-
9i	SIB_V_B3	Safety Interface Board Type 3	56	-

i Used as board number 2 in multi-station applications or combinations between different types of positioners. For example, robot welding station with one positioner type IRBP 250K and one positioner type IRBP 250L.

Example

Robot welding station with one positioner IRBP 250K and one positioner IRBP 250L.



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A	Robot
B	Travel track
C	IRBP 250L
D	IRBP 250K

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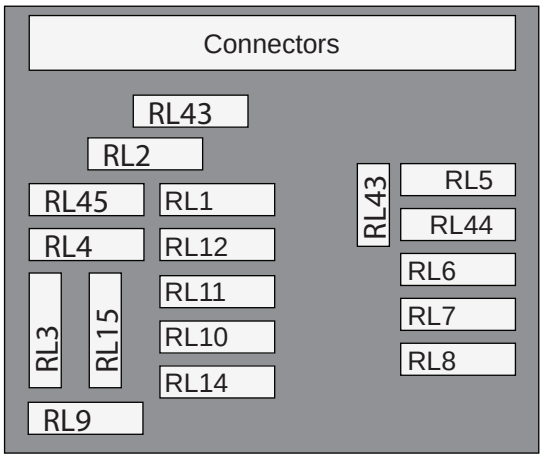
I/O signal configuration SIB_V_B3

Unit for safety supervision SIB_V_B3.



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Digital inputs

DeviceMap	Connection	Name	Description	Connected to unit
0	TB1:8	*diASTOP_CHA*	Run chain AS1-	Panel board/safety switch service door
1	TB1:4	*diASTOP_CHB*	Run chain AS2+	Panel board/safety switch service door
2	TB31:2, TB31:15	*diRL1*	Channel 1 active	Entrance protection area 1
3	TB31:1, TB31:16	*diRL2*	Channel 2 active	Entrance protection area 1
4	TB31:9	*diRL3*	Reset/control of function safety circuits	Entrance protection area 1
5	TB33:14	*diRL11*	Channel 1 active	Station indication switch robot in area 2
6	TB33:15	*diRL12*	Channel 2 active	Station indication switch robot in area 2
7		*diRL15*	Reset/control of function safety circuits	Safety relays robot in area 2
9	TB33:12	*diRL9*	Channel 1 active	Station indication switch robot in area 1
10	TB33:13	*diRL10*	Channel 2 active	Station indication switch robot in area 1

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DeviceMap	Connection	Name	Description	Connected to unit
11		*diRL14*	Reset/control of function safety circuits	Safety relays robot in area 1
12	TB4:4	*diRL4*	Activate entrance protection area 1	Op-panel
13	TB4:1	*diRL5*	Activate entrance protection area 2	Op-panel
14	TB32:9	*diRL6*	Reset/control of function safety circuits	Entrance protection area 2
16	TB32:1, TB32:16	*diRL7*	Channel 1 active	Entrance protection area 2
17	TB32:2, TB32:15	*diRL8*	Channel 2 active	Entrance protection area 2
18	TB2:4, TB34:5	*diGSTOP_CHA_1*	Run chain GS2+ area1	Panel board
19	TB1:1, TB34:3	*diGSTOP_CHA_2*	Run chain GS2+ area2	Panel board
20	TB2:8, TB34:11	*diGSTOP_CHB_1*	Run chain GS1- area 1	Panel board
21	TB1:5, TB34:9	*diGSTOP_CHB_2*	Run chain GS1- area 2	Panel board
24	TB111:10, TB33:2	*diRL201*	Channel 1 active	Safety switch service door
25	TB111:8, TB33:4	*diRL202*	Channel 2 active	Safety switch service door
26	TB111:11, TB33:5	*diRL203*	Reset/control of function safety circuits	Safety switch service door
27	TB111:13, TB33:6	*diRL204*	Activate safety circuits service door	Push-button service door
32	TB112:10, TB33:8	*diRL401*	Channel 1 active	Home position switch
33	TB112:8, TB33:9	*diRL402*	Channel 2 active	Home position switch
34	TB112:11, TB112:12	*diRL403*	Reset/control of function safety circuits	Home position switch

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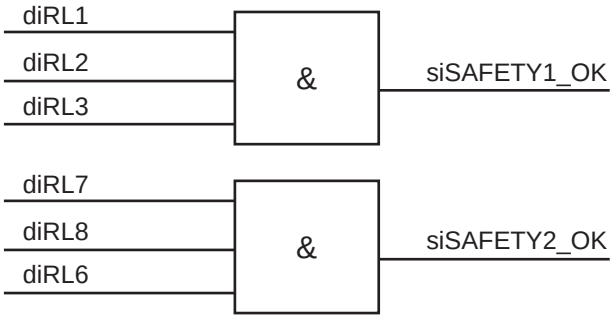
Cross-connections

Cross-connections for unit for safety supervision SIB_V_typ 3.



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