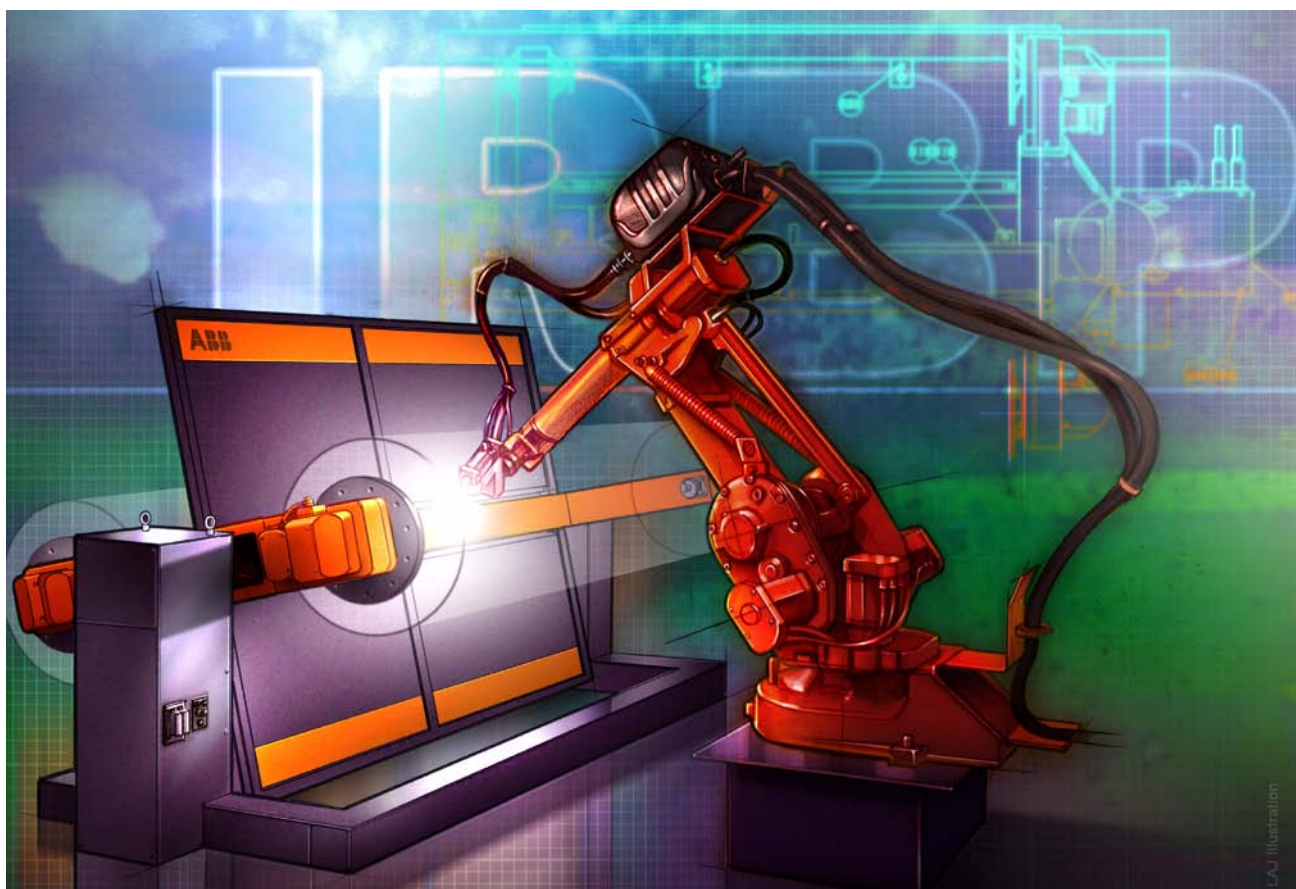


# Signal Description

Arc Welding Products

IRC5 Design 2006

3HEA 802349-001 Rev . A



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# 1 General I/O Description

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## General

This description covers all signals in a standard Arc Welding System based on the standard process interface delivered by ABB Automation Technology Products AB. By using the Arc Welding System Configuration diskette as a optional boot diskette, the I/O configuration for the selected process equipment, positioners 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 units as standard:

- Simulated I/O Board
- Process Interface Board
- Digital I/O Board
- Software I/O Board

Unused I/O board places can be equipped with any I/O unit described in the Product Specification for the robot.

---

## Usage

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

- Welding equipment
- Positioner(s)
- Operator panel
- Cleaning equipment
- Search sensor
- Other options

To minimize the number of I/O units and signals, a simulated I/O board is used for some system signals and operator ready signals. The operator ready function is performed by 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 boot-up, it is advisable to save the system configuration by making a back-up of the whole system. This shall be made in the service menu.

---

### References

- Physical connections of I/O signals are shown in the electrical drawing for the signal interface (inside the robot control cubicle) in the System Manual.
- I/O units, CAN-bus connection and address keying are described in *Installation and Commissioning* in the "Connecting Signals" chapter in the Product Manual for the robot.

Electrical data, see Product Specification for the robot.



**Note: Signals without any names in the following tables are not configured.**



## 2 Process Interface Arcitec/MigRob

### General

This chapter describes the different standard process configurations delivered by ABB Automation Technologies AB.

### Power source

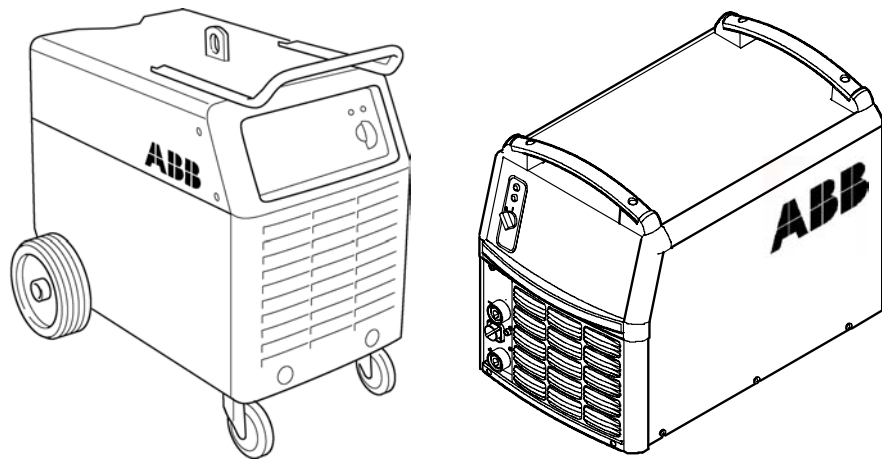


Figure 1. Power source LRC/MigRob

### 2.1 I/O Board configuration

Address	Name	Board type	Digital Inputs	Digital Outputs	Analogue Inputs	Analogue Outputs
30	B_PROC_30	Process Interface Board	16	16	3	3
40	B_AW_PROC_40	Power source				
	B_SIM_AW	Simulated Digital I/O				

## 2.2 I/O Signals Configuration B\_PROC\_30

### 2.2.1 Digital outputs

UnitMap	Connection	Name	Description	Type	Connected to unit
48	TB5:4	doGAS	Activate gas valve	42V AC	Welding equipment
48	TB5:12, TB5:13	doGAS	Activate gas valve	closing contact	Welding equipment
49	TB5:3	doACLN_TCH	Activate air cleaning of torch	42V AC	Welding equipment
49	TB5:10, TB5:11	doACLN_TCH	Activate air cleaning of torch	closing contact	Welding equipment
50	TB6:12	doPIB6_12	Activate push motor	42V DC	-
51	TB4:3	doMLUB_TCH	Activate torch lubrica- tion	42V DC	Torch cleaner
52	TB4:4	doMCLN_TCH	Activate mechanical cleaning	42V DC	Torch cleaner
53	TB4:5	doPIB4_5	Activate wire cutter	42V DC	-
54	TB11:4	doPIB11_4	Not used	42V DC	-
55	TB5:14	doPIB5_14	Tig mode	42V DC	-
56	TB5:16	doPIB5_16	Not used	42V DC	-
57	TB3:1, TB3:2	doLRB_FAN	Activate power source	closing contact	Welding equipment
58	-	doPIB_CYCLE_ON	CycleOn to PIB	logical	-
59	TB5:6	doSE1_SEL	Select and activate sensor 1	logical 24V DC	Internal search sensor
60	TB5:9	doSE2_SEL	Select and activate sensor 2	logical 24V DC	Internal search sensor
61	-	doSE_REF	Set (=Lock) reference	logical	Internal search sensor
62	-	doERR_ACK	Acknowledge error in PIB	logical	-
63	-	doFEED	Activate wire feeder	logical	Welding equipment

### 2.2.2 Digital inputs

UnitMap	Connection	Name	Description	Type	Connected to unit
48	TB6:4	diWR_EST	Water established	42V AC	Welding equipment
49	TB6:5	diGA_EST	Gas established	42V AC	Welding equipment
50	TB6:3	diARC_EST	Not used	42V DC	Welding equipment
51	TB4:6	diMCLN_FIN	Cleaning of torch finished	42V DC	Torch cleaner
52	TB4:7	sen1	Welding wire detect	42V DC	BullsEye
53	TB6:2	diGUN_OK	Gun in position	42V DC	Welding equipment
54	-	diSE1_DET	Surface detected	logical	Internal search sensor 1
55	-	diSE2_DET	Surface detected	logical	Internal search sensor 2
56	TB6:1	diGUN_RESET	Gun resetted	42V DC	Welding equipment
57	-	diSE_VALID	Sensor valid	logical	Internal search sensor
58	-	diERR_STROBE	Error indication	logical	-
59	TB6:8	diMAN_WF	Start manual wire feed	42V DCt	Welding equipment
60	-	diERROR_NO0	Error code	logical	-
61	-	diERROR_NO1	Error code	logical	-
62	-	diERROR_NO2	Error code	logical	-
63	-	diERROR_NO3	Error code	logical	-

### 2.2.3 Analogue outputs

UnitMap	Connection	Name	Description	Connected to unit
0-15	TB3:3, TB3	aoWD_REF	MIG/MAG: voltage reference	Welding equipment
16-31	TB6:6, TB6:7, TB6:15, TB6:7	aoFEED_REF	Wire feed reference	Welding equipment
32-47	TB3:5, TB3:4	aoINDUCT_REF	MIG/MAG: inductance reference	Welding equipment

### 2.2.4 Analogue inputs

UnitMap	Connection	Name	Description	Connected to unit
0-15	TB3:7, TB3:8	aiWDM_VOLT	Measured voltage	Welding equipment
16-31	TB11:1, TB11:2	aiWDM_CURR	Measured current	Welding equipment
32-47	TB6:13, TB6:14	aiWDM_SPEED	Measured wire feed speed	Welding equipment

## 2.3 I/O Signals Configuration B\_AW\_PROC\_40

### 2.3.1 Digital outputs

UnitMap	Name	Description
0	doWELD	Activate ARCITEC power source
1	doQUICK_STOP	Quick stop of ARCITEC power source
2	doEmStop	Emergency stop

### 2.3.2 Digital inputs

UnitMap	Name	Description
48	diARC_EST	Arc established
49	diWELD_EST	Power source welding
56	diWDU_Err	Weld data unit error
57	diPS_Err	Control board error
64	diERROR_1	Error code
65	diERROR_2	Error code
66	diERROR_3	Error code
67	diERROR_4	Error code
68	diERROR_5	Error code
69	diERROR_6	Error code
70	diERROR_7	Error code
71	diERROR_8	Error code

### 2.3.3 Group outputs

UnitMap	Name	Description
8-11	goActWirFeed	Activate wire feed unit
16-31	goCAN_SCHED	Activate schedule number in ARCITEC power source

### 2.3.4 Analogue inputs

UnitMap	Name	Description
0-15	aiVoltage	Voltage
16-31	aiCurrent	Current
32-47	aiPower	Power

## 2.4 I/O Signals Configuration B\_AW\_SIM

### 2.4.1 Digital output

UnitMap	Name	Description
	doFEED_SIM	Activate wire feed

## Process Interface Arcitec/MigRob

---

I/O Signals Configuration B\_AW\_SIM

## 3 Process Interface ARCITEC/MigRob, Robot 2

### General

This chapter describes the different standard process configurations delivered by ABB Automation Technologies AB.

### Power source

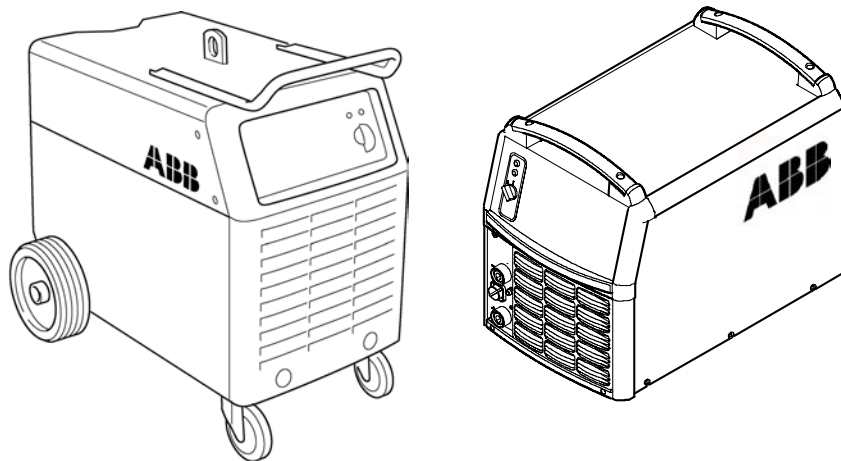


Figure 2. Power source LRC/MigRob

### 3.1 I/O Board configuration

Address	Name	Board type	Digital Inputs	Digital Outputs	Analogue Inputs	Analogue Outputs
31	B_PROC_31	Process Interface Board	16	16	3	3
41	B_AW_PROC_41	Power source				
	B_SIM_AW	Simulated Digital I/O				

**3.2 I/O Signals Configuration B\_PROC\_31****3.2.1 Digital outputs**

<b>UnitMap</b>	<b>Connection</b>	<b>Name</b>	<b>Description</b>	<b>Type</b>	<b>Connected to unit</b>
48	TB5:4	doGAS_2	Activate gas valve	42V AC	Welding equipment
48	TB5:12, TB5:13	doGAS_2	Activate gas valve	closing contact	Welding equipment
49	TB5:3	doACLN_TCH_2	Activate air cleaning of torch	42V AC	Welding equipment
49	TB5:10, TB5:11	doACLN_TCH_2	Activate air cleaning of torch	closing contact	Welding equipment
50	TB6:12	doPIB6_12_2	Activate push motor	42V DC	-
51	TB4:3	doMLUB_TCH_2	Activate torch lubrica- tion	42V DC	Torch cleaner
52	TB4:4	doMCLN_TCH_2	Activate mechanical cleaning	42V DC	Torch cleaner
53	TB4:5	doPIB4_5_2	Activate wire cutter	42V DC	-
54	TB11:4	doPIB11_4_2	Not used	42V DC	-
55	TB5:14	doPIB5_14_2	Tig mode	42V DC	-
56	TB5:16	doPIB5_16_2	Not used	42V DC	-
57	TB3:1, TB3:2	doLRB_FAN_2	Activate power source	closing contact	Welding equipment
58	-	doPIB_CYCLE_ON_2	CycleOn to PIB	logical	-
59	TB5:6	doSE1_SEL_2	Select and activate sensor 1	logical 24V DC	Internal search sensor
60	TB5:9	doSE2_SEL_2	Select and activate sensor 2	logical 24V DC	Internal search sensor
61	-	doSE_REF_2	Set (=Lock) reference	logical	Internal search sensor
62	-	doERR_ACK_2	Acknowledge error in PIB	logical	-
63	-	doFEED_2	Activate wire feeder	logical	Welding equipment



### 3.2.2 Digital inputs

UnitMap	Connection	Name	Description	Type	Connected to unit
48	TB6:4	diWR_EST_2	Water established	42V AC	Welding equipment
49	TB6:5	diGA_EST_2	Gas established	42V AC	Welding equipment
50	TB6:3	diARC_EST_2	Not used	42V DC	Welding equipment
51	TB4:6	diMCLN_FIN_2	Cleaning of torch finished	42V DC	Torch cleaner
52	TB4:7	sen2	Welding wire detect	42V DC	BullsEye
53	TB6:2	diGUN_OK_2	Gun in position	42V DC	Welding equipment
54	-	diSE1_DET_2	Surface detected	logical	Internal search sensor 1
55	-	diSE2_DET_2	Surface detected	logical	Internal search sensor 2
56	TB6:1	diGUN_RESET_2	Gun resetted	42V DC	Welding equipment
57	-	diSE_VALID_2	Sensor valid	logical	Internal search sensor
58	-	diERR_STROBE_2	Error indication	logical	-
59	TB6:8	diMAN_WF_2	Start manual wire feed	42V DCt	Welding equipment
60	-	diERROR_NO0_2	Error code	logical	-
61	-	diERROR_NO1_2	Error code	logical	-
62	-	diERROR_NO2_2	Error code	logical	-
63	-	diERROR_NO3_2	Error code	logical	-

### 3.2.3 Analogue outputs

UnitMap	Connection	Name	Description	Connected to unit
0-15	TB3:3, TB3	aoWD_REF_2	MIG/MAG: voltage reference	Welding equipment
16-31	TB6:6, TB6:7, TB6:15, TB6:7	aoFEED_REF_2	Wire feed reference	Welding equipment
32-47	TB3:5, TB3:4	aoINDUCT_REF_2	MIG/MAG: inductance reference	Welding equipment

### 3.2.4 Analogue inputs

UnitMap	Connection	Name	Description	Connected to unit
0-15	TB3:7, TB3:8	aiPDM_VOLT_2	Measured voltage	Welding equipment
16-31	TB11:1, TB11:2	aiPDM_CURR_2	Measured current	Welding equipment
32-47	TB6:13, TB6:14	aiPDM_SPEED_2	Measured wire feed speed	Welding equipment

## 3.3 I/O Signals Configuration B\_AW\_PROC\_41

### 3.3.1 Digital outputs

UnitMap	Name	Description
0	doWELD_2	Activate ARCITEC power source
1	doQUICK_STOP_2	Quick stop of ARCITEC power source
2	doEmStop_2	Emergency stop

### 3.3.2 Digital inputs

UnitMap	Name	Description
48	diARC_EST_2	Arc established
49	diWELD_EST_2	Power source welding
56	diWDU_Err_2	Weld data unit error
57	diPS_Err_2	Control board error
64	diERROR_1_2	Error code
65	diERROR_2_2	Error code
66	diERROR_3_2	Error code
67	diERROR_4_2	Error code
68	diERROR_5_2	Error code
69	diERROR_6_2	Error code
70	diERROR_7_2	Error code
71	diERROR_8_2	Error code

### 3.3.3 Group outputs

UnitMap	Name	Description
8-11	goActWirFeed_2	Activate wire feed unit
16-31	goCAN_SCHED_2	Activate schedule number in ARCITEC power source

### 3.3.4 Analogue inputs

UnitMap	Name	Description
0-15	aiVoltage_2	Voltage
16-31	aiCurrent_2	Current
32-47	aiPower_2	Power

## 3.4 I/O Signals Configuration B\_AW\_SIM

### 3.4.1 Digital output

UnitMap	Name	Description
	doFEED_SIM	Activate wire feed

## Process Interface ARCITEC/MigRob, Robot 2

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I/O Signals Configuration B\_AW\_SIM

## 4 Process Interface RPB

### General

This chapter describes the different standard process configurations delivered by ABB Automation Technologies AB.

### Power source



Figure 3. Power source RPB

### 4.1 I/O Board configuration

Address	Name	Board type	Digital Inputs	Digital Outputs	Analogue Inputs	Analogue Outputs
30	B_PROC_30	Process Interface Board	16	16	3	3

## 4.2 I/O Signals Configuration B\_PROC\_30

### 4.2.1 Digital outputs

UnitMap	Connection	Name	Description	Type	Connected to unit
48	TB5:4	doGAS	Activate gas valve	42V AC	Welding equipment
48	TB5:12, TB5:13	doGAS	Activate gas valve	closing contact	Welding equipment
49	TB5:3	doACLN_TCH	Activate air cleaning of torch	42V AC	Welding equipment
49	TB5:10, TB5:11	doACLN_TCH	Activate air cleaning of torch	closing contact	Welding equipment
50	TB6:12	doPIB6_12	Activate push motor	42V DC	-
51	TB4:3	doMLUB_TCH	Activate torch lubrica- tion	42V DC	Torch cleaner
52	TB4:4	doMCLN_TCH	Activate mechanical cleaning	42V DC	Torch cleaner
53	TB4:5	doPIB4_5	Activate wire cutter	42V DC	-
54	TB11:4	doPIB11_4	Not used	42V DC	-
55	TB5:14	doPIB5_14	Tig mode	42V DC	-
56	TB5:16	doPIB5_16	Not used	42V DC	-
57	TB3:1, TB3:2	doWELD	Activate power source	closing contact	Welding equipment
58	-	doPIB_CYCLE_ON	CycleOn to PIB	logical	-
59	TB5:6	doSE1_SEL	Select and activate sensor 1	logical 24V DC	Internal search sensor
60	TB5:9	doSE2_SEL	Select and activate sensor 2	logical 24V DC	Internal search sensor
61	-	doSE_REF	Set (=Lock) reference	logical	Internal search sensor
62	-	doERR_ACK	Acknowledge error in PIB	logical	-
63	-	doFEED	Activate wire feeder	logical	Welding equipment

### 4.2.2 Digital inputs

UnitMap	Connection	Name	Description	Type	Connected to unit
48	TB6:4	diWR_EST	Water established	42V AC	Welding equipment
49	TB6:5	diGA_EST	Gas established	42V AC	Welding equipment
50	TB6:3	diARC_EST	Not used	42V DC	Welding equipment
51	TB4:6	diMCLN_FIN	Cleaning of torch finished	42V DC	Torch cleaner
52	TB4:7	sen1	Welding wire detect	42V DC	BullsEye
53	TB6:2	diGUN_OK	Gun in position	42V DC	Welding equipment
54	-	diSE1_DET	Surface detected	logical	Internal search sensor 1
55	-	diSE2_DET	Surface detected	logical	Internal search sensor 2
56	TB6:1	diGUN_RESET	Gun resetted	42V DC	Welding equipment
57	-	diSE_VALID	Sensor valid	logical	Internal search sensor
58	-	diERR_STROBE	Error indication	logical	-
59	TB6:8	diMAN_WF	Start manual wire feed	42V DCt	Welding equipment
60	-	diERROR_NO0	Error code	logical	-
61	-	diERROR_NO1	Error code	logical	-
62	-	diERROR_NO2	Error code	logical	-
63	-	diERROR_NO3	Error code	logical	-

### 4.2.3 Analogue outputs

UnitMap	Connection	Name	Description	Connected to unit
0-15	TB3:3, TB3	aoWD_REF	MIG/MAG: voltage reference	Welding equipment
16-31	TB6:6, TB6:7, TB6:15, TB6:7	aoFEED_REF	Wire feed reference	Welding equipment
32-47	TB3:5, TB3:4	aoINDUCT_REF	MIG/MAG: inductance reference	Welding equipment

### 4.2.4 Analogue inputs

UnitMap	Connection	Name	Description	Connected to unit
0-15	TB3:7, TB3:8	aiPDM_VOLT	Measured voltage	Welding equipment
16-31	TB11:1, TB11:2	aiPDM_CURR	Measured current	Welding equipment
32-47	TB6:13, TB6:14	aiPDM_SPEED	Measured wire feed speed	Welding equipment

## Process Interface RPB

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I/O Signals Configuration B\_PROC\_30



## 5 Process Interface RPB, Robot 2

### General

This chapter describes the different standard process configurations delivered by ABB Automation Technologies AB.

### Power source



Figure 4. Power source RPB

### 5.1 I/O Board configuration

Address	Name	Board type	Digital Inputs	Digital Outputs	Analogue Inputs	Analogue Outputs
30	B_PROC_31	Process Interface Board	16	16	3	3

## 5.2 I/O Signals Configuration B\_PROC\_31

### 5.2.1 Digital outputs

UnitMap	Connection	Name	Description	Type	Connected to unit
48	TB5:4	doGAS_2	Activate gas valve	42V AC	Welding equipment
48	TB5:12, TB5:13	doGAS_2	Activate gas valve	closing contact	Welding equipment
49	TB5:3	doACLN_TCH_2	Activate air cleaning of torch	42V AC	Welding equipment
49	TB5:10, TB5:11	doACLN_TCH_2	Activate air cleaning of torch	closing contact	Welding equipment
50	TB6:12	doPIB6_12_2	Activate push motor	42V DC	-
51	TB4:3	doMLUB_TCH_2	Activate torch lubrica- tion	42V DC	Torch cleaner
52	TB4:4	doMCLN_TCH_2	Activate mechanical cleaning	42V DC	Torch cleaner
53	TB4:5	doPIB4_5_2	Activate wire cutter	42V DC	-
54	TB11:4	doPIB11_4_2	Not used	42V DC	-
55	TB5:14	doPIB5_14_2	Tig mode	42V DC	-
56	TB5:16	doPIB5_16_2	Not used	42V DC	-
57	TB3:1, TB3:2	doWELD_2	Activate power source	closing contact	Welding equipment
58	-	doPIB_CYCLE_ON_ 2	CycleOn to PIB	logical	-
59	TB5:6	doSE1_SEL_2	Select and activate sensor 1	logical 24V DC	Internal search sensor
60	TB5:9	doSE2_SEL_2	Select and activate sensor 2	logical 24V DC	Internal search sensor
61	-	doSE_REF_2	Set (=Lock) reference	logical	Internal search sensor
62	-	doERR_ACK_2	Acknowledge error in PIB	logical	-
63	-	doFEED_2	Activate wire feeder	logical	Welding equipment

### 5.2.2 Digital inputs

UnitMap	Connection	Name	Description	Type	Connected to unit
48	TB6:4	diWR_EST_2	Water established	42V AC	Welding equipment
49	TB6:5	diGA_EST_2	Gas established	42V AC	Welding equipment
50	TB6:3	diARC_EST_2	Not used	42V DC	Welding equipment
51	TB4:6	diMCLN_FIN_2	Cleaning of torch finished	42V DC	Torch cleaner
52	TB4:7	sen2	Welding wire detect	42V DC	BullsEye
53	TB6:2	diGUN_OK_2	Gun in position	42V DC	Welding equipment
54	-	diSE1_DET_2	Surface detected	logical	Internal search sensor 1
55	-	diSE2_DET_2	Surface detected	logical	Internal search sensor 2
56	TB6:1	diGUN_RESET_2	Gun resetted	42V DC	Welding equipment
57	-	diSE_VALID_2	Sensor valid	logical	Internal search sensor
58	-	diERR_STROBE_2	Error indication	logical	-
59	TB6:8	diMAN_WF_2	Start manual wire feed	42V DCt	Welding equipment
60	-	diERROR_NO0_2	Error code	logical	-
61	-	diERROR_NO1_2	Error code	logical	-
62	-	diERROR_NO2_2	Error code	logical	-
63	-	diERROR_NO3_2	Error code	logical	-

### 5.2.3 Analogue outputs

UnitMap	Connection	Name	Description	Connected to unit
0-15	TB3:3, TB3	aoWD_REF_2	MIG/MAG: voltage reference	Welding equipment
16-31	TB6:6, TB6:7, TB6:15, TB6:7	aoFEED_REF_2	Wire feed reference	Welding equipment
32-47	TB3:5, TB3:4	aoINDUCT_REF_2	MIG/MAG: inductance reference	Welding equipment

### 5.2.4 Analogue inputs

UnitMap	Connection	Name	Description	Connected to unit
0-15	TB3:7, TB3:8	aiPDM_VOLT_2	Measured voltage	Welding equipment
16-31	TB11:1, TB11:2	aiPDM_CURR_2	Measured current	Welding equipment
32-47	TB6:13, TB6:14	aiPDM_SPEED_2	Measured wire feed speed	Welding equipment

## Process Interface RPB, Robot 2

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I/O Signals Configuration B\_PROC\_31

## 6 Process Interface Fronius

### General

This chapter describes the different standard process configurations delivered by ABB Automation Technologies AB.

#### 6.0.1 Process Interface *DeviceNet* for Fronius

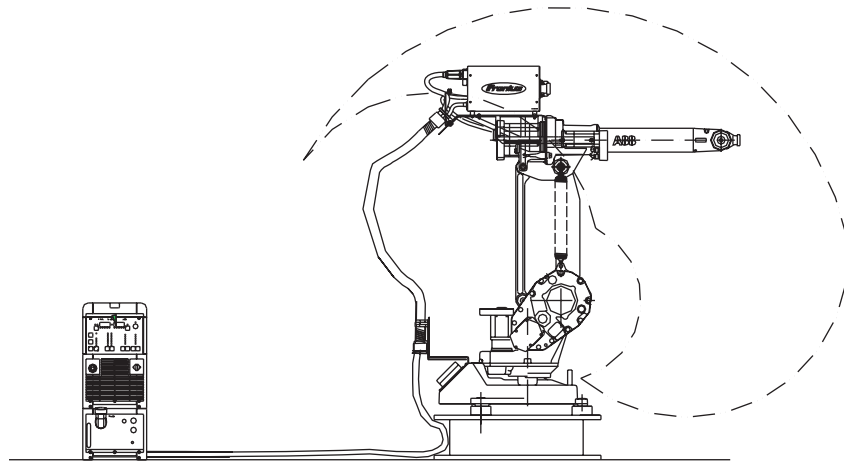


Figure 5. Welding equipment Fronius

### 6.1 I/O Board configuration

Address	Name	Board type	Digital Inputs	Digital Outputs	Analogue Inputs	Analogue Outputs
40	FRON_BOARD_40	DiviceNet I/O	96	96	4	4
20	BOARD20 (Option)	Digital I/O	16	16		

## 6.2 I/O Signals Configuration FRON\_BOARD\_40

### 6.2.1 Digital outputs

UnitMap	Connection	Name	Description	Type	Connected to unit
0	A204:X4	doWeld	Welding start High active	Output 1:Bit 0	Power source
1	A204:X4	doQstop	Robot ready/ Fast stop High active/ low active	Output 1:Bit 1	Power source
2	A204:X4	doMODE_BIT1	000 Standard synergy 001 Pulsed synergy 010 Job mode 011 Param. selection Internal See system manual, flap 20.	Output 1:Bit 2	Power source
3	A204:X4	doMODE_BIT2		Output 1:Bit 3	Power source
4	A204:X4	doMODE_BIT3		Output 1:Bit 4	Power source
8	A204:X4	doGAS	Activate gas valve	Output 1:Bit 8	Power source
9	A204:X4	doFEED	Activate wire feeder for- ward	Output 1:Bit 9	Power source
10	A204:X4	doFEED_BWD	Activate wire feeder reverse	Output 1:Bit 10	Power source
11	A204:X4	doRESET_ERR	Resetting error	Output 1:Bit 11, Inverted	Power source
12		doTOUCH_SEN S			Power source
13	A204:X4	do_AIR	Activate air cleaning of torch	Output 1:Bit 12	Power source
16	A204:X4	doJOB_BIT1	Call job number 1	Output 2:Bit 0	Power source
17	A204:X4	doJOB_BIT2	Call job number 2	Output 2:Bit 1	Power source
18	A204:X4	doJOB_BIT3	Call job number 3	Output 2:Bit 2	Power source
19	A204:X4	doJOB_BIT4	Call job number 4	Output 2:Bit 3	Power source
20	A204:X4	doJOB_BIT5	Call job number 5	Output 2:Bit 4	Power source
21	A204:X4	doJOB_BIT6	Call job number 6	Output 2:Bit 5	Power source
22	A204:X4	doJOB_BIT7	Call job number 7	Output 2:Bit 6	Power source
23	A204:X4	doJOB_BIT8	Call job number 8	Output 2:Bit 7	Power source
24	A204:X4	doPROG_BIT1	Call in program (syn- ergy) number 1	Output 2:Bit 8	Power source
25	A204:X4	doPROG_BIT2	Call in program (syn- ergy) number 2	Output 2:Bit 9	Power source
26	A204:X4	doPROG_BIT3	Call in program (syn- ergy) number 3	Output 2:Bit 10	Power source

<b>UnitMap</b>	<b>Connection</b>	<b>Name</b>	<b>Description</b>	<b>Type</b>	<b>Connected to unit</b>
27	A204:X4	doPROG_BIT4	Call in program (syn- ergy) number 4	Output 2:Bit 11	Power source
28	A204:X4	doPROG_BIT5	Call in program (syn- ergy) number 5	Output 1:Bit 0	Power source
29	A204:X4	doPROG_BIT6	Call in program (syn- ergy) number 6	Output 1:Bit 1	Power source
30	A204:X4	doPROG_BIT7	Call in program (syn- ergy) number 7	Output 1:Bit 2	Power source
31	A204:X4	doWELD_SIM	Simulate welding, high active	Output 1:Bit 3	Power source

## Process Interface Fronius

I/O Signals Configuration FRON\_BOARD\_40

### 6.2.2 Digital inputs

UnitMap	Connection	Name	Description	Type	Connected to unit
0	A204:X4	diARC_EST	Welding current flow	Input 1: Bit 0	Power source
2	A204:X4	diPROC_ACTIVE	Welding process active	Input 1: Bit 2	Power source
3	A204:X4	diPOWER_ON	Main current signal	Input 1: Bit 3	Power source
4	A204:X4	diCOLL_SENS	Torch in position	Input 1: Bit 4	Power source
5	A204:X4	diPOWER_READY	Power source OK	Input 1: Bit 5, Iverterad	Power source
6	A204:X4	diCOMM_READY	Communication OK	Input 1: Bit 6, Iverterad	Power source
8	A204:X4	diERR_BIT1	Error number 0-255,	Input 1: Bit 8	Power source
9	A204:X4	diERR_BIT2		Input 1: Bit 9	Power source
10	A204:X4	diERR_BIT3		Input 1: Bit 10	Power source
11	A204:X4	diERR_BIT4		Input 1: Bit 11	Power source
12	A204:X4	diERR_BIT5		Input 1: Bit 12	Power source
13	A204:X4	diERR_BIT6	Error number 0-255, see above	Input 1: Bit 13	Power source
14	A204:X4	diERR_BIT7		Input 1: Bit 14	Power source
15	A204:X4	diERR_BIT8	Error number 0-255, see above	Input 1: Bit 15	Power source

### 6.2.3 Analogue outputs

UnitMap	Connection	Name	Description	Connected to unit
1	A204:X4	aoPower	Power reference	Power source
2	A204:X4	aoVoltage	Arc voltage correction	Power source
3	A204:X4	awPulseCorr	Pulse/ Dynamic correction	Power source
4	A204:X4	awBurnBackCorr	Burn back correction	Power source

### 6.2.4 Group outputs

UnitMap	Connection	Name	Description	Connected to unit
2-4	A204:X4	goMODE	Select work mode	Power source
16-23	A204:X4	goJOB	Select job	Power source
24-30	A204:X4	goPROG	Select program/ synergy	Power source



### 6.2.5 Group input

UnitMap	Connection	Name	Description	Connected to unit
1	A204:X4	gi_error	Error codes	Power source

## 6.3 I/O Signals Configuration BOARD20

### 6.3.1 Digital outputs

UnitMap	Connection	Name	Description	Connected to unit
9	X2:1	doMCLN_TCH	Activate mechanical cleaning	TSC
10	X2:2	doMLUB_TCH	Activate torch lubrication	TSC
11	X2:3	doWIR_CUT	Activate wire cutter	TSC

### 6.3.2 Digital inputs

UnitMap	Connection	Name	Description	Connected to unit
1	X3:1	diMCLN_FIN	Cleaning of torch finished	TSC

## Process Interface Fronius

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I/O Signals Configuration BOARD20

## 7 Process Interface Fronius, Robot 2

### General

This chapter describes the different standard process configurations delivered by ABB Automation Technologies AB.

#### 7.0.1 Process Interface *DeviceNet* for Fronius

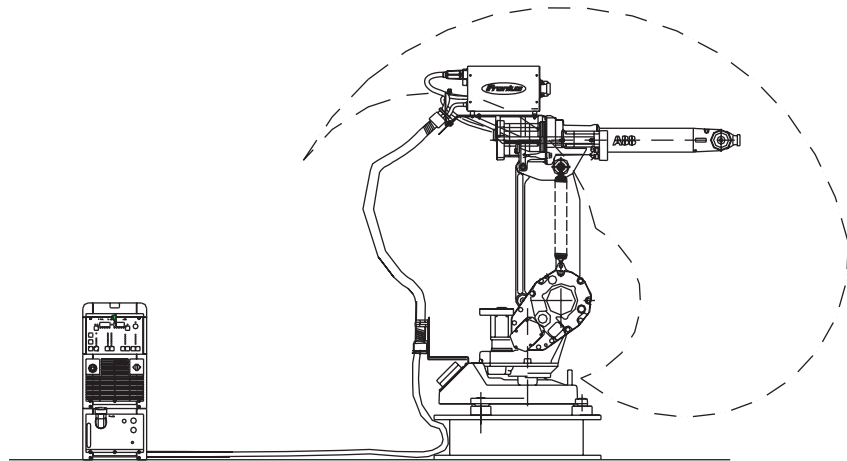


Figure 6. Welding equipment Fronius

### 7.1 I/O Board configuration

Address	Name	Board type	Digital Inputs	Digital Outputs	Analogue Inputs	Analogue Outputs
41	FRON_BOARD_41	DeviceNet I/O	96	96	4	4
20	BOARD20 (Option)	Digital I/O	16	16		

## Process Interface Fronius, Robot 2

I/O Signals Configuration FRON\_BOARD\_41

### 7.2 I/O Signals Configuration FRON\_BOARD\_41

#### 7.2.1 Digital outputs

UnitMap	Connection	Name	Description	Type	Connected to unit
0	A204:X4	doWeld_2	Welding start High active	Output 1:Bit 0	Power source
1	A204:X4	doQstop_2	Robot ready/ Fast stop High active/ low active	Output 1:Bit 1	Power source
2	A204:X4	doMODE_BIT1_2	000 Standard synergy 001 Pulsed synergy 010 Job mode 011 Param. selection Internal See system manual, flap 20.	Output 1:Bit 2	Power source
3	A204:X4	doMODE_BIT2_2		Output 1:Bit 3	Power source
4	A204:X4	doMODE_BIT3_2		Output 1:Bit 4	Power source
8	A204:X4	doGAS_2	Activate gas valve	Output 1:Bit 8	Power source
9	A204:X4	doFEED_2	Activate wire feeder for- ward	Output 1:Bit 9	Power source
10	A204:X4	doFEED_BWD_2	Activate wire feeder reverse	Output 1:Bit 10	Power source
11	A204:X4	doRESET_ERR_2	Resetting error	Output 1:Bit 11, Inverted	Power source
12		doTOUCH_SENS_2			Power source
13	A204:X4	do_AIR_2	Activate air cleaning of torch	Output 1:Bit 12	Power source
16	A204:X4	doJOB_BIT1_2_2	Call job number 1	Output 2:Bit 0	Power source
17	A204:X4	doJOB_BIT2_2	Call job number 2	Output 2:Bit 1	Power source
18	A204:X4	doJOB_BIT3_2	Call job number 3	Output 2:Bit 2	Power source
19	A204:X4	doJOB_BIT4_2	Call job number 4	Output 2:Bit 3	Power source
20	A204:X4	doJOB_BIT5_2	Call job number 5	Output 2:Bit 4	Power source
21	A204:X4	doJOB_BIT6_2	Call job number 6	Output 2:Bit 5	Power source
22	A204:X4	doJOB_BIT7_2	Call job number 7	Output 2:Bit 6	Power source
23	A204:X4	doJOB_BIT8_2	Call job number 8	Output 2:Bit 7	Power source
24	A204:X4	doPROG_BIT1_2	Call in program (syn- ergy) number 1	Output 2:Bit 8	Power source
25	A204:X4	doPROG_BIT2_2	Call in program (syn- ergy) number 2	Output 2:Bit 9	Power source
26	A204:X4	doPROG_BIT3_2	Call in program (syn- ergy) number 3	Output 2:Bit 10	Power source

UnitMap	Connection	Name	Description	Type	Connected to unit
27	A204:X4	doPROG_BIT4_2	Call in program (syn- ergy) number 4	Output 2:Bit 11	Power source
28	A204:X4	doPROG_BIT5_2	Call in program (syn- ergy) number 5	Output 1:Bit 0	Power source
29	A204:X4	doPROG_BIT6_2	Call in program (syn- ergy) number 6	Output 1:Bit 1	Power source
30	A204:X4	doPROG_BIT7_2	Call in program (syn- ergy) number 7	Output 1:Bit 2	Power source
31	A204:X4	doWELD_SIM_2	Simulate welding, high active	Output 1:Bit 3	Power source

### 7.2.2 Digital inputs

UnitMap	Connection	Name	Description	Type	Connected to unit
0	A204:X4	diARC_EST_2	Welding current flow	Input 1: Bit 0	Power source
2	A204:X4	diPROC_ACTIVE_2	Welding process active	Input 1: Bit 2	Power source
3	A204:X4	diPOWER_ON_2	Main current signal	Input 1: Bit 3	Power source
4	A204:X4	diCOLL_SENS_2	Torch in position	Input 1: Bit 4	Power source
5	A204:X4	diPOWER_READY_2	Power source OK	Input 1: Bit 5, Iverted	Power source
6	A204:X4	diCOMM_READY_2	Communication OK	Input 1: Bit 6, Iverted	Power source
8	A204:X4	diERR_BIT1_2	Error number 0-255,	Input 1: Bit 8	Power source
9	A204:X4	diERR_BIT2_2		Input 1: Bit 9	Power source
10	A204:X4	diERR_BIT3_2		Input 1: Bit 10	Power source
11	A204:X4	diERR_BIT4_2		Input 1: Bit 11	Power source
12	A204:X4	diERR_BIT5_2		Input 1: Bit 12	Power source
13	A204:X4	diERR_BIT6_2	Error number 0-255, see above	Input 1: Bit 13	Power source
14	A204:X4	diERR_BIT7_2		Input 1: Bit 14	Power source
15	A204:X4	diERR_BIT8_2	Error number 0-255, see above	Input 1: Bit 15	Power source

## Process Interface Fronius, Robot 2

I/O Signals Configuration FRON\_BOARD\_41

### 7.2.3 Analogue outputs

UnitMap	Connection	Name	Description	Connected to unit
1	A204:X4	aoPower_2	Power reference	Power source
2	A204:X4	aoVoltage_2	Arc voltage correction	Power source
3	A204:X4	awPulseCorr_2	Pulse/ Dynamic correction	Power source
4	A204:X4	awBurnBackCorr_2	Burn back correction	Power source

### 7.2.4 Group outputs

UnitMap	Connection	Name	Description	Connected to unit
2-4	A204:X4	goMODE_2	Select work mode	Power source
16-23	A204:X4	goJOB_2	Select job	Power source
24-30	A204:X4	goPROG_2	Select program/ synergy	Power source

### 7.2.5 Group input

UnitMap	Connection	Name	Description	Connected to unit
1	A204:X4	gi_error_2	Error codes	Power source

## 7.3 I/O Signals Configuration BOARD20

### 7.3.1 Digital outputs

UnitMap	Connection	Name	Description	Connected to unit
9	X2:1	doMCLN_TCH_2	Activate mechanical cleaning	TSC
10	X2:2	doMLUB_TCH_2	Activate torch lubrication	TSC
11	X2:3	doWIR_CUT_2	Activate wire cutter	TSC

### 7.3.2 Digital inputs

UnitMap	Connection	Name	Description	Connected to unit
1	X3:1	diMCLN_FIN_2	Cleaning of torch finished	TSC

## Process Interface Fronius, Robot 2

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I/O Signals Configuration BOARD20



## 8 Positioner Interface IRBP A

### General

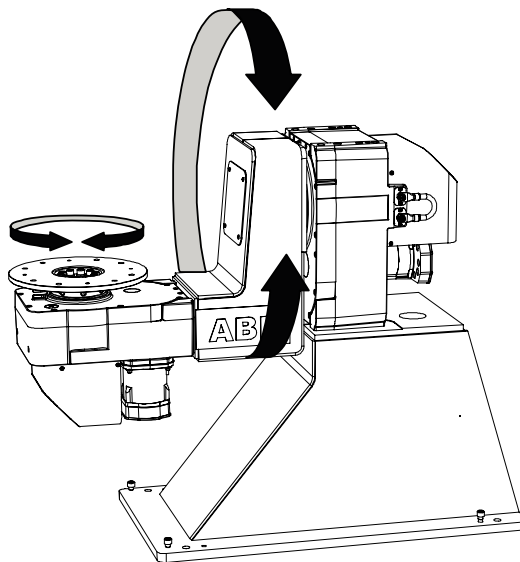
This chapter describes the I/O configurations for positioners delivered by ABB Technologies AB.

### 8.1 I/O board Configuration for positioner

Address	Name	Board type	Digital inputs	Digital outputs	Digital inputs	Analogue outputs	Relay outputs
-	B_POS_SIM	Simulated digital I/O					
Internal bus	DRVIO_1 <sup>1</sup>	Digital I/O	7	12	-	-	-

1. The number relates to the drive module where the I/O board is located, the example shows DM1.

### Positioner type IRBP A



Figur 7 Positioner type IRBP A

### 8.2 Simulated outputs for B\_POS\_SIM

#### 8.2.1 Simulated outputs

UnitMap	Name	Description
0	soACT_STN1	Activate mechanical unit 1
1	soACT_STN2	Activate mechanical unit 2

#### 8.2.2 Simulated inputs

UnitMap	Name	Description
0	siSTN1_ACT	Mechanical unit 1 activated
1	siSTN2_ACT	Mechanical unit 2 activated

## 8.3 I/O-Signals configuration for DRVIO\_1

### 8.3.1 Digital outputs TB4

Output	UnitMap	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			
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		

### 8.3.2 Digital inputs TB3

Input	UnitMap	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		

### 8.4 Configuration cross-connections

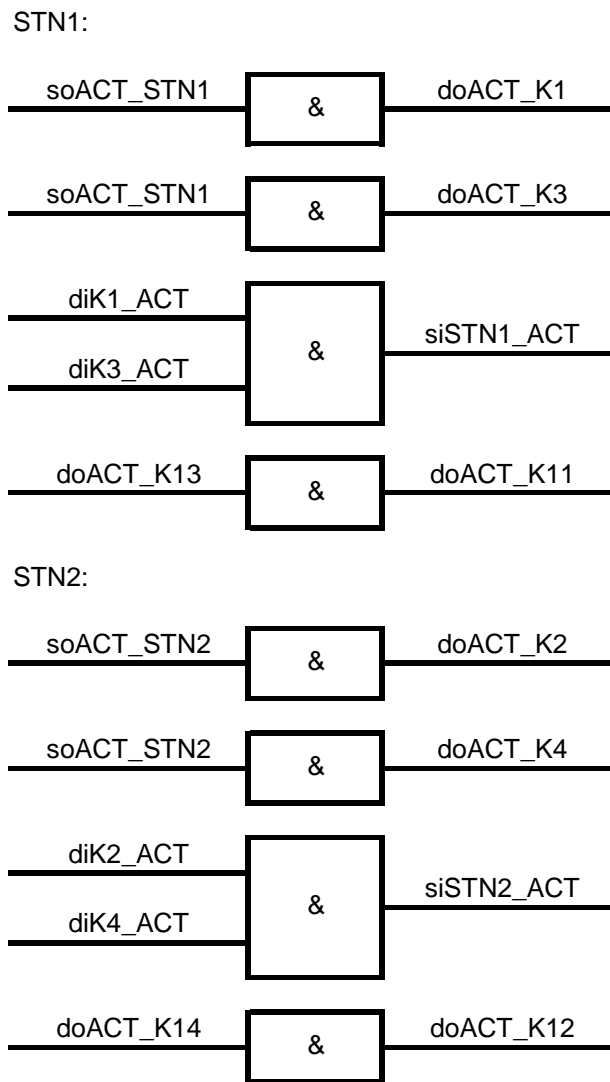


Figure 8. Cross-connection

## 9 Positioner Interface IRBP B/D

### General

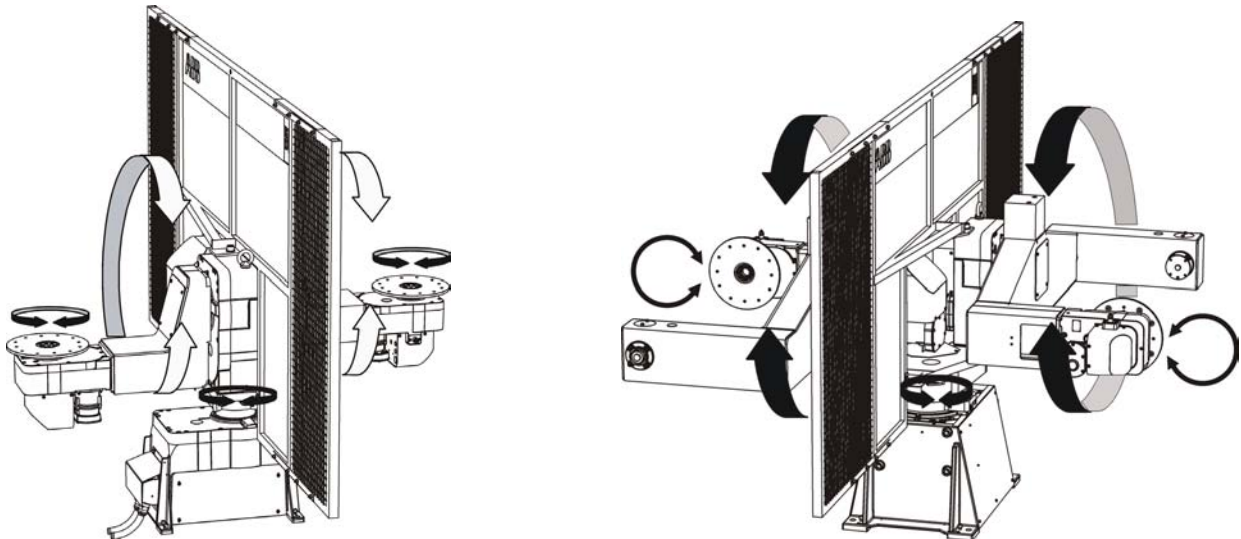
This chapter describes the I/O configurations for positioners delivered by ABB Technologies AB.

### 9.1 I/O board Configuration for positioner

Address	Name	Board type	Digital inputs	Digital outputs	Digital inputs	Analogue outputs	Relay outputs
-	B_POS_SIM	Simulated digital I/O					
Internal bus	DRVIO_1 <sup>1</sup>	Digital I/O	7	12	-	-	-

1. The number relates to the drive module where the I/O board is located, the example shows DM1.

### Positioner type IRBP B/D



Figur 9 Positioner type IRBP B/D

### 9.2 Simulated outputs for B\_POS\_SIM

#### 9.2.1 Simulated outputs

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

#### 9.2.2 Simulated inputs

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

## 9.3 I/O-Signals configuration for DRVIO\_1

### 9.3.1 Digital outputs TB4

Output	UnitMap	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		

### 9.3.2 Digital inputs TB3

Input	UnitMap	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
6	5			
7	6			
8		0 V input 1-7		

### 9.4 Configuration cross-connections

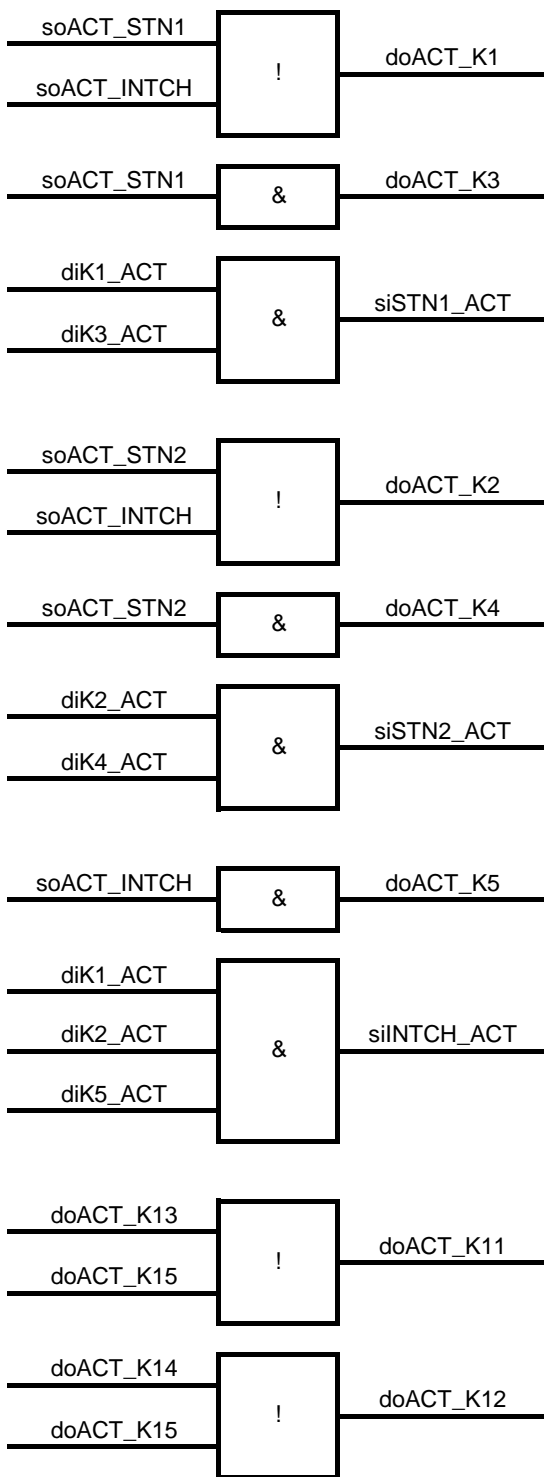


Figure 10. Cross-connections



## 10 Positioner Interface IRBP C

### General

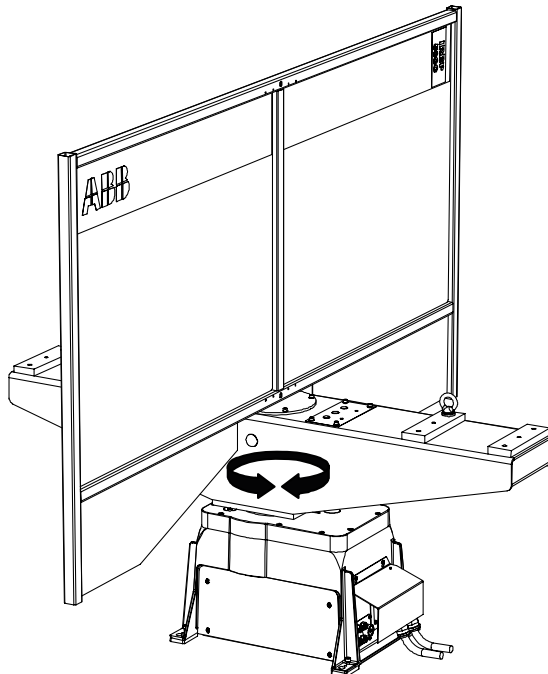
This chapter describes the I/O configurations for positioners delivered by ABB Technologies AB.

### 10.1 I/O board Configuration for positioner

Address	Name	Board type	Digital inputs	Digital outputs	Analogue inputs	Analogue outputs	Relay outputs
-	B_POS_SIM	Simulated digital I/O					
Internal bus	DRVIO_1 <sup>1</sup>	Digital I/O	7	12	-	-	-

1. The number relates to the drive module where the I/O board is located, the example shows DM1.

### Positioner type IRBP C



Figur 11 Positioner type IRBP C

### 10.2 Simulated outputs for B\_POS\_SIM

#### 10.2.1 Simulated outputs

UnitMap	Name	Description
0	soACT_STN1	Activate mechanical unit 1

#### 10.2.2 Simulated inputs

UnitMap	Name	Description
0	siSTN1_ACT	Mechanical unit 1 activated

## 10.3 I/O-Signals configuration for DRVIO\_1

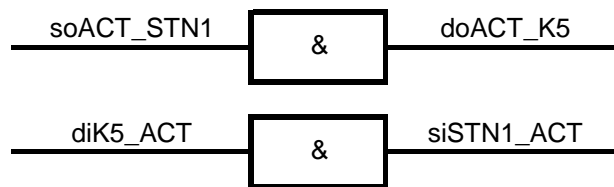
### 10.3.1 Digital outputs TB4

Output	UnitMap	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		

### 10.3.2 Digital inputs TB3

Input	UnitMap	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		

## 10.4 Configuration cross-connections



*Figure 12. Cross-connections*

# 11 Positioner Interface IRBP C Index

## General

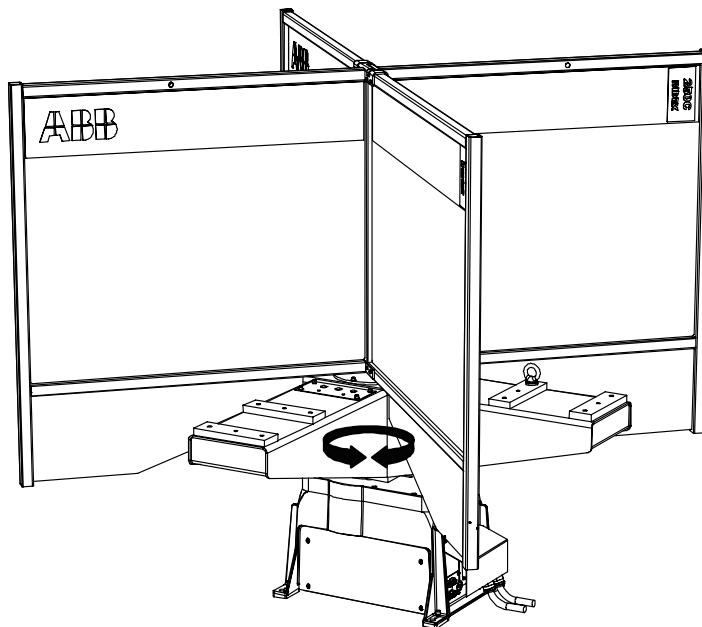
This chapter describes the I/O configurations for positioners delivered by ABB Technologies AB.

### 11.1 I/O board Configuration for positioner

Address	Name	Board type	Digital inputs	Digital outputs	Analogue inputs	Analogue outputs	Relay outputs
-	B_POS_SIM	Simulated digital I/O					
Internal bus	DRVIO_1 <sup>1</sup>	Digital I/O	7	12	-	-	-

1. The number relates to the drive module where the I/O board is located, the example shows DM1.

## Positioner type IRBP C Index



Figur 13 Positioner type IRBP C Index

### 11.2 Simulated outputs for B\_POS\_SIM

#### 11.2.1 Simulated outputs

UnitMap	Name	Description
0	soACT_STN1	Activate mechanical unit 1

#### 11.2.2 Simulated inputs

UnitMap	Name	Description
0	siSTN1_ACT	Mechanical unit 1 activated

## 11.3 I/O-Signals configuration for B\_POS\_21

### 11.3.1 Digital outputs TB4

Output	UnitMap	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		

### 11.3.2 Digital inputs TB3

Input	UnitMap	Name	Description	Connected to unit
1	0	diLS_2_INPOS	Limit switch station 2	Station interchange unit
2	1	diLS_4_INPOS	Limit switch station 4	Station interchange unit
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_3_INPOS	Limit switch station 3	Station interchange unit
8		0 V input 1-7		

## 11.4 Configuration cross-connections

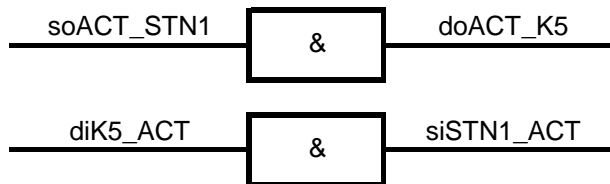


Figure 14. Cross-connections



## 12 Positioner Interface IRBP K/R

### General

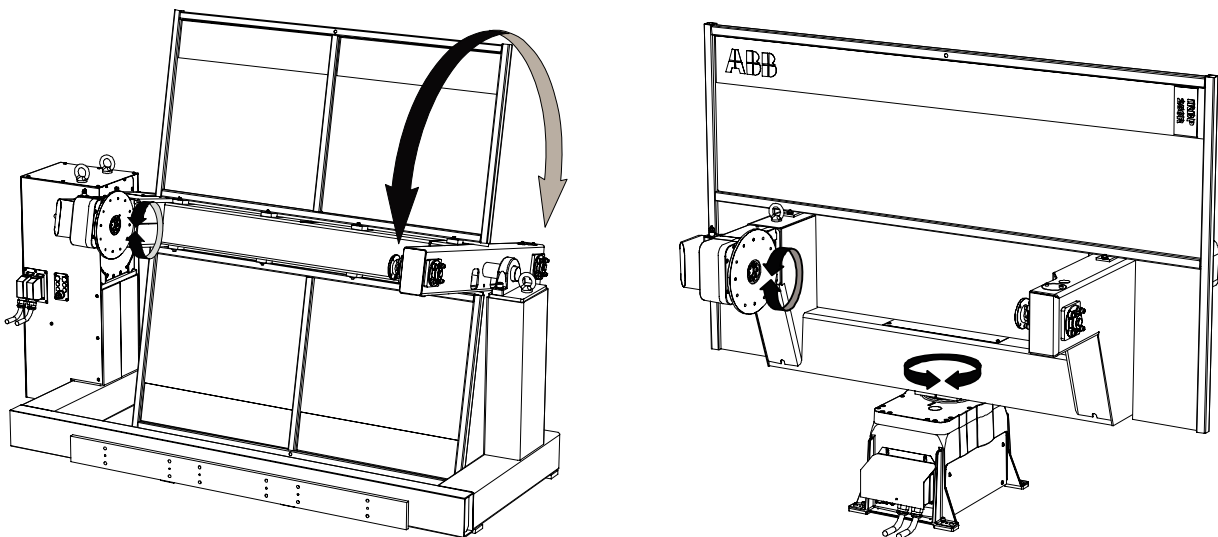
This chapter describes the I/O configurations for positioners delivered by ABB Technologies AB.

### 12.1 I/O board configuration for positioner

Address	Name	Board type	Digital inputs	Digital outputs	Analogue inputs	Analogue outputs	Relay outputs
-	B_POS_SIM	Simulated digital I/O					
Internal bus	DRVIO_1 <sup>1</sup>	Digital I/O	7	12	-	-	-

1. The number relates to the drive module where the I/O board is located, the example shows DM1.

### Positioner type IRBP K/R



Figur 15 Positioner type IRBP R/K

Simulated outputs for B\_POS\_SIM

### 12.2 Simulated outputs for B\_POS\_SIM

#### 12.2.1 Simulated outputs

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

#### 12.2.2 Simulated inputs

UnitMap	Name	Description
0	siSTN1_ACT	Mechanical unit 1 activated
1	siSTN2_ACT	Mechanical unit 2 activated
2	siINTCH_ACT	Mechanical unit 3 activated

## 12.3 I/O-Signals configuration for DRVIO\_1

### 12.3.1 Digital outputs TB4

Output	UnitMap	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		

### 12.3.2 Digital inputs TB3

Input	UnitMap	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		

## 12.4 Configuration cross-connections

### 12.4.1 K/R 3DU (3 axes)

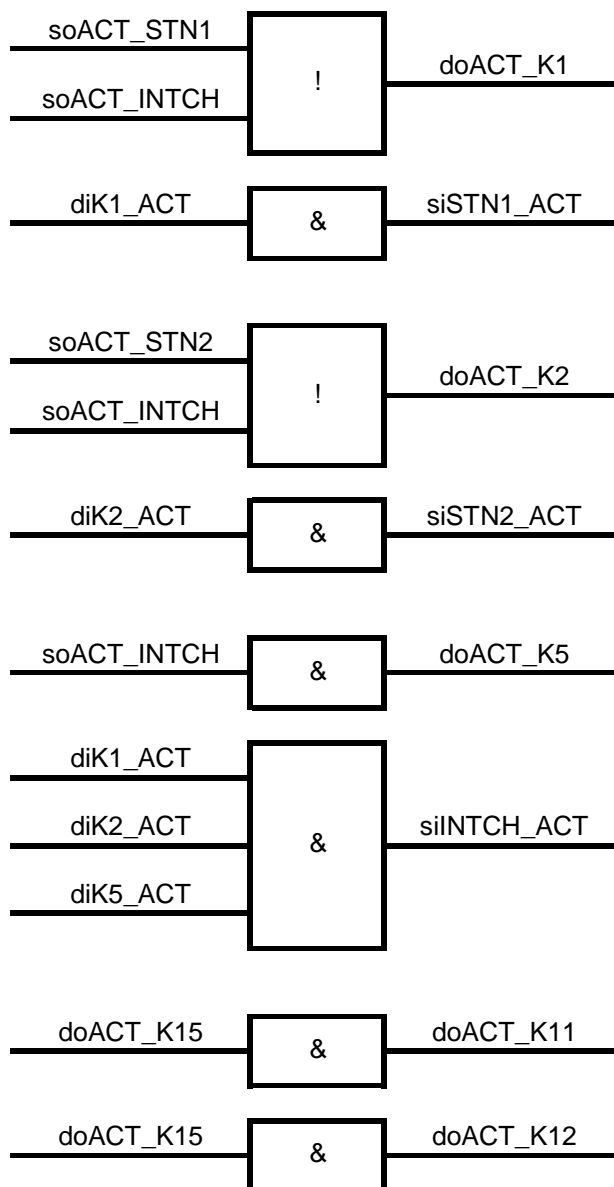


Figure 16. Cross-connections 3DU

12.4.2 K/R 1DU (1-axis)

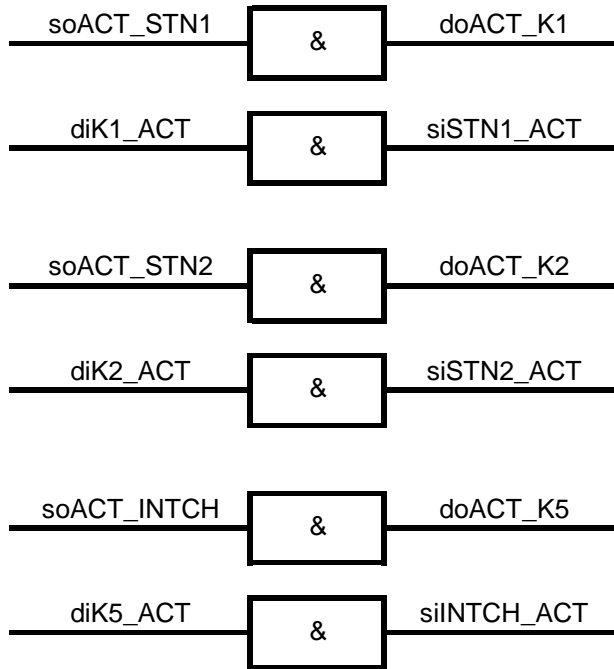


Figure 17. Cross-connections 1DU, (1-axis)



## 13 Positioner Interface IRBP L

### General

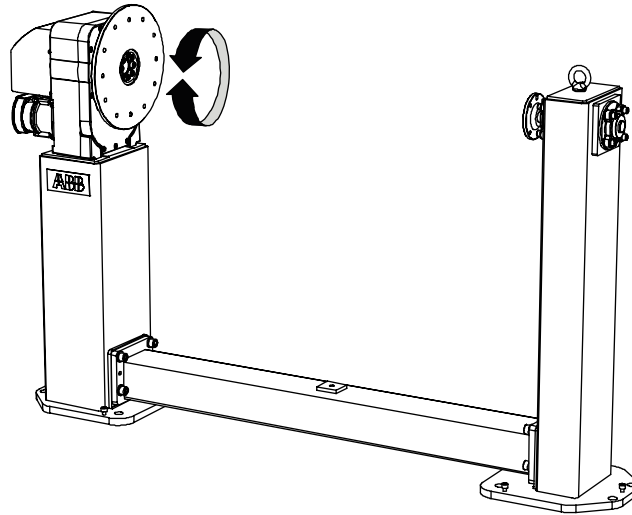
This chapter describes the I/O configurations for positioners delivered by ABB Technologies AB.

### 13.1 I/O board configuration for positioner

Address	Name	Board type	Digital inputs	Digital outputs	Analogue inputs	Analogue outputs	Relay outputs
-	B_POS_SIM	Simulated digital I/O					
Internal bus	DRVIO_1 <sup>1</sup>	Digital I/O	7	12	-	-	-

1. The number relates to the drive module where the I/O board is located, the example shows DM1.

### Positioner type IRBP L



Figur 18 Positioner type IRBP L

### 13.2 Simulated outputs for B\_POS\_SIM

#### 13.2.1 Simulated outputs

UnitMap	Name	Description
0	soACT_STN1	Activate mechanical unit 1
1	soACT_STN2	Activate mechanical unit 2

#### 13.2.2 Simulated inputs

UnitMap	Name	Description
0	siSTN1_ACT	Mechanical unit 1 activated
1	siSTN2_ACT	Mechanical unit 2 activated



### 13.3 I/O-Signals configuration for DRVIO\_1

#### 13.3.1 Digital outputs TB4

Output	UnitMap	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			
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		

#### 13.3.2 Digital inputs TB3

Input	UnitMap	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		

### 13.4 Configuration cross-connections

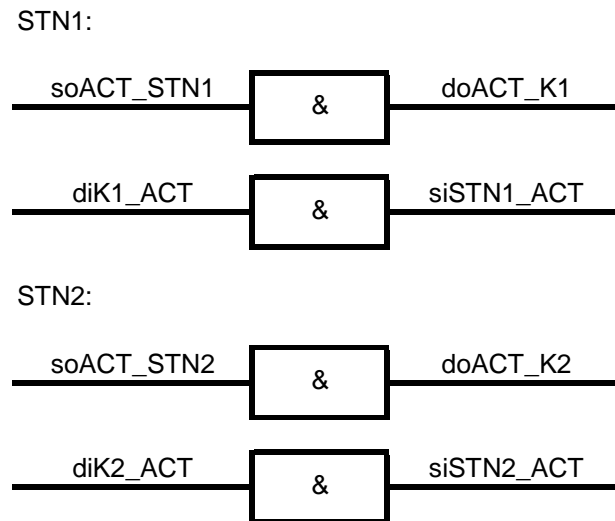


Figure 19. Cross-connections

## 14 Operator Interface IRBP

### General

This chapter describes the I/O configurations for operator panels delivered by ABB Technologies AB.

### 14.1 I/O board Configuration

Address	Name	Board type	Digital inputs	Digital outputs	Analogue outputs	Analogue 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	-	-

### 14.2 System functions

#### 14.2.1 Inputs

Signal name	Action
diPROG_START	Start
diPROG_STOP	Stop

#### 14.2.2 Outputs

Signal name	Status
doCYCLE	CycleOn
doMON	MotorOn
doAUTO	AutoOn

### 14.3 I/O-Signals configuration for B\_OP\_SIM

#### 14.3.1 Digital outputs

UnitMap	Name	Description
10	doCYCLE	CycleOn
11	doAUTO	AutoOn
12	doMON	MotorOn

### 14.4 I/O Signals configuration for B\_OP\_21, B\_OP\_22

#### 14.4.1 Digital outputs

Output	UnitMap	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

#### 14.4.2 Digital inputs

Input	Unit Map	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

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

## General

This chapter describes the different I/O configurations for standard equipment for safety supervision SIB V, delivered by ABB Technologies AB.

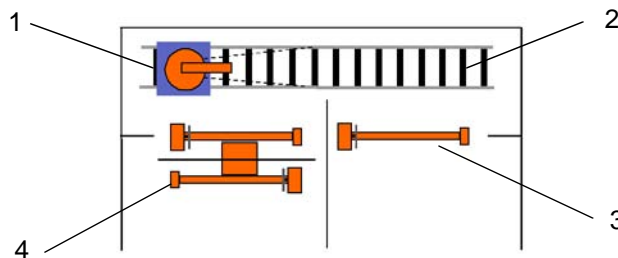
### 15.1 I/O board Configuration SIB V

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



\*) Used as board No 2 in multi-stations applications or combinations between different types of positioners.  
 Example: Robot welding station with one positioner type IRBP 250K and one positioner type IRBP 250L.

## Exemple



Figur 20 Robot welding station with one positioner IRBP 250K and one positioner IRBP 250L

Pos	Description	Pos	Description
1	Robot	3	IRBP 250L
2	Travel track	4	IRBP 250K

## 15.2 I/O-signal configuration for SIB\_V\_B1

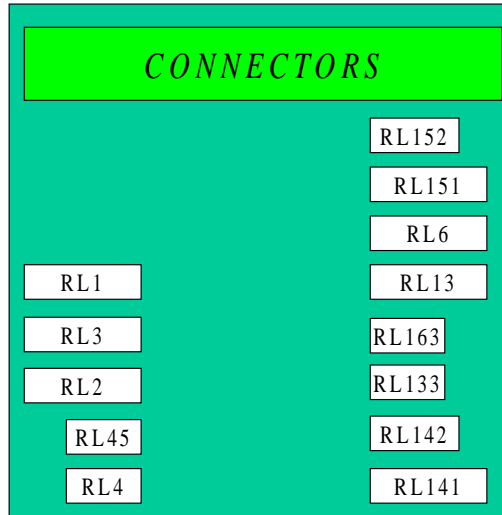


Figure 21. Unit for safety supervision SIB\_V\_B1

### 15.2.1 Digital inputs

UnitMap	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

### 15.2.2 Digital inputs

UnitMap	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 ser- vice door	Pushbutton service door

### 15.2.3 Configuration cross-connections

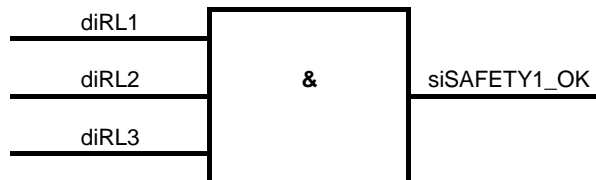


Figure 22. Cross-connections for unit for safety supervision SIB\_V\_typ 1





# 16 Safety interface SIB V for positioner C Index

## General

This chapter describes the different I/O configurations for standard equipment for safety supervision SIB V, delivered by ABB Technologies AB.

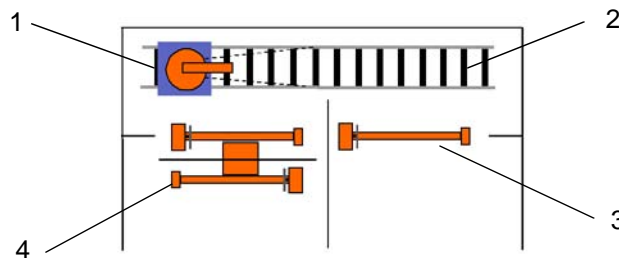
### 16.1 I/O board Configuration SIB V

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



\*) Used as board No 2 in multi-stations applications or combinations between different types of positioners.  
 Example: Robot welding station with one positioner type IRBP 250K and one positioner type IRBP 250L.

## Exemple



Figur 23 Robot welding station with one positioner IRBP 250K and one positioner IRBP 250L

Pos	Description	Pos	Description
1	Robot	3	IRBP 250L
2	Travel track	4	IRBP 250K

## 16.2 I/O-signal configuration for SIB\_V\_B2

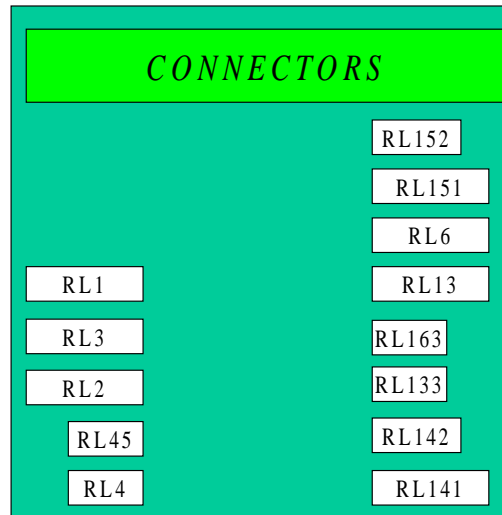


Figure 24. Unit for safety supervision SIB\_V\_B2

### 16.2.1 Digital inputs

UnitMap	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

16.2.2 Digital inputs

UnitMap	Connection	Name	Description	Connected to unit
11	TB2:13	diRL151	Indication station 2 at robot	Station interchange
12	TB2:14	diRL153	Indication station 2 at robot (inverted signal)	Station interchange
13	TB2:15	diRL16	Indication station 4 at robot	Station interchange
14	TB2:16	diRL163	Indication station 4 at robot (inverted signal)	Station interchange
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	Pushbutton service door

16.2.3 Configuration cross-connections

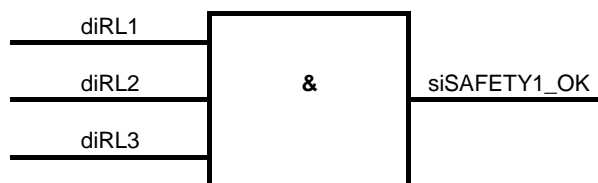


Figure 25. Cross-connections for unit for safety supervision SIB\_V\_typ 2

## Safety interface SIB V for positioner C Index

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Configuration cross-connections

# 17 Safety interface SIB V for positioner A/L/S

## General

This chapter describes the different I/O configurations for standard equipment for safety supervision SIB V, delivered by ABB Technologies AB.

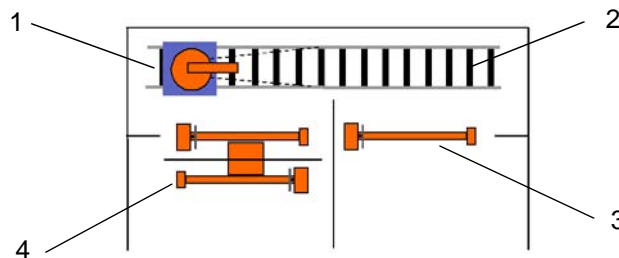
### 17.1 I/O board Configuration SIB V

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



\*) Used as board No 2 in multi-stations applications or combinations between different types of positioners.  
 Example: Robot welding station with one positioner type IRBP 250K and one positioner type IRBP 250L.

## Exemple



Figur 26 Robot welding station with one positioner IRBP 250K and one positioner IRBP 250L

Pos	Description	Pos	Description
1	Robot	3	IRBP 250L
2	Travel track	4	IRBP 250K

## 17.2 I/O-signal configuration for SIB\_V\_B3

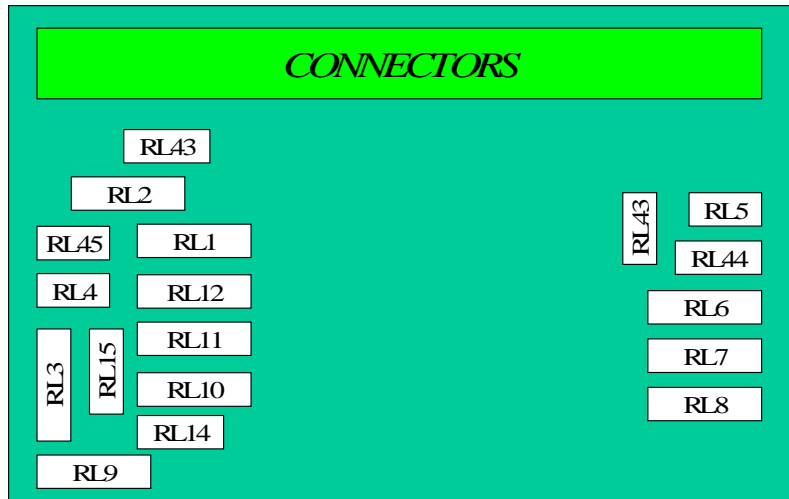


Figure 27. Unit for safety supervision SIB\_V\_B3

### 17.2.1 Digital inputs

UnitMap	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 indikation switch robot in area 2
6	TB33:15	diRL12	Channel 2 active	Station indikation 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 indikation switch robot in area 1
10	TB33:13	diRL10	Channel 2 active	Station indikation switch robot in area 1

UnitMap	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	Pushbutton 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

### 17.2.2 Configuration cross-connections

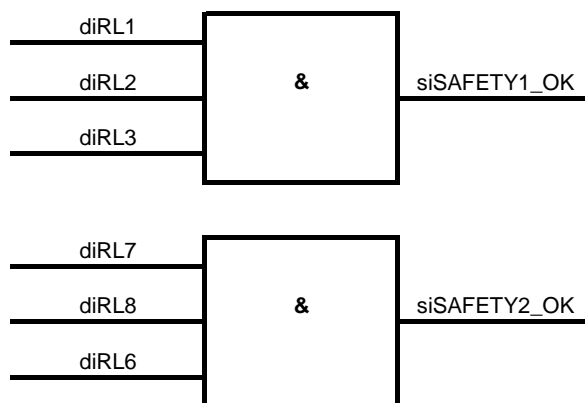


Figure 28. Cross-connections for unit for safety supervision SIB\_V\_typ 3





