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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 Automation Technology Products AB. By using the Arc Welding System Configuration diskette as an 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

General

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

These configurations vary depending on which power source you have and whether you have Dualarc or not:

- For power source Arcitec or MigRob, see “Arcitec/MigRob” on page 4.
- For power source Arcitec or MigRob with Dualarc, see “Arcitec/MigRob” on page 4 for robot 1 and “ARCITEC/MigRob, Robot 2” on page 11 for robot 2.
- For power source RPB, see “RPB” on page 17.
- For power source RPB with Dualarc, see “RPB” on page 17 for robot 1 and “RPB, Robot 2” on page 21 for robot 2.
- For power source Fronius, see “Fronius” on page 25.
- For power source Fronius with Dualarc, see “Fronius” on page 25 for robot 1 and “Fronius, Robot 2” on page 31 for robot 2.
2.1 Arcitec/MigRob

Power source

![Power source LRC/MigRob](image)

Figure 1. Power source LRC/MigRob

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<tr>
<td></td>
<td>B_AW_SIM</td>
<td>Simulated Digital I/O</td>
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<td></td>
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<th>Name</th>
<th>Description</th>
<th>Type</th>
<th>Connected to unit</th>
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</thead>
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<tr>
<td>48</td>
<td>TB5:4</td>
<td>doGAS</td>
<td>Activate gas valve</td>
<td>42V AC</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>48</td>
<td>TB5:12, TB5:13</td>
<td>doGAS</td>
<td>Activate gas valve</td>
<td>closing contact</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>49</td>
<td>TB5:3</td>
<td>doACLN_TCH</td>
<td>Activate air cleaning of torch</td>
<td>42V AC</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>49</td>
<td>TB5:10, TB5:11</td>
<td>doACLN_TCH</td>
<td>Activate air cleaning of torch</td>
<td>closing contact</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>50</td>
<td>TB6:12</td>
<td>doPIB6_12</td>
<td>Activate push motor</td>
<td>42V DC</td>
<td>-</td>
</tr>
<tr>
<td>51</td>
<td>TB4:3</td>
<td>doMLUB_TCH</td>
<td>Activate torch lubrication</td>
<td>42V DC</td>
<td>Torch cleaner</td>
</tr>
<tr>
<td>52</td>
<td>TB4:4</td>
<td>doMCLN_TCH</td>
<td>Activate mechanical cleaning</td>
<td>42V DC</td>
<td>Torch cleaner</td>
</tr>
<tr>
<td>53</td>
<td>TB4:5</td>
<td>doPIB4_5</td>
<td>Activate wire cutter</td>
<td>42V DC</td>
<td>-</td>
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<td>54</td>
<td>TB11:4</td>
<td>doPIB11_4</td>
<td>Not used</td>
<td>42V DC</td>
<td>-</td>
</tr>
<tr>
<td>55</td>
<td>TB5:14</td>
<td>doPIB5_14</td>
<td>Tig mode</td>
<td>42V DC</td>
<td>-</td>
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<tr>
<td>56</td>
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<td>doPIB5_16</td>
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<td>TB3:1, TB3:2</td>
<td>doLRB_FAN</td>
<td>Activate power source</td>
<td>closing contact</td>
<td>Welding equipment</td>
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<tr>
<td>58</td>
<td>-</td>
<td>doPIB_CYCLE_ON</td>
<td>CycleOn to PIB</td>
<td>logical</td>
<td>-</td>
</tr>
<tr>
<td>59</td>
<td>TB5:6</td>
<td>doSE1_SEL</td>
<td>Select and activate sensor 1</td>
<td>logical</td>
<td>Internal search sensor</td>
</tr>
<tr>
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<td>Set (=Lock) reference</td>
<td>logical</td>
<td>Internal search sensor</td>
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<td>doERR_ACK</td>
<td>Acknowledge error in PIB</td>
<td>logical</td>
<td>-</td>
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<tr>
<td>63</td>
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<td>doFEED</td>
<td>Activate wire feeder</td>
<td>logical</td>
<td>Welding equipment</td>
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<th>Name</th>
<th>Description</th>
<th>Type</th>
<th>Connected to unit</th>
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<tbody>
<tr>
<td>48</td>
<td>TB6:4</td>
<td>diWR_EST</td>
<td>Water established</td>
<td>42V AC</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>49</td>
<td>TB6:5</td>
<td>diGA_EST</td>
<td>Gas established</td>
<td>42V AC</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>50</td>
<td>TB6:3</td>
<td>diARC_EST</td>
<td>Not used</td>
<td>42V DC</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>51</td>
<td>TB4:6</td>
<td>diMCLN_FIN</td>
<td>Cleaning of torch finished</td>
<td>42V DC</td>
<td>Torch cleaner</td>
</tr>
<tr>
<td>52</td>
<td>TB4:7</td>
<td>sen1</td>
<td>Welding wire detect</td>
<td>42V DC</td>
<td>BullsEye</td>
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<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Type</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>TB3:3, TB3</td>
<td>aoWD_REF</td>
<td>MIG/MAG: voltage reference</td>
<td></td>
<td>Welding equipment</td>
</tr>
<tr>
<td>32-47</td>
<td>TB3:5, TB3:4</td>
<td>aINDUCT_REF</td>
<td>MIG/MAG: inductance reference</td>
<td></td>
<td>Welding equipment</td>
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### 2.1.2.4 Analogue inputs

<table>
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<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
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</thead>
<tbody>
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<td>0-15</td>
<td>TB3:7, TB3:8</td>
<td>aiWDM_VOLT</td>
<td>Measured voltage</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>16-31</td>
<td>TB11:1, TB11:2</td>
<td>aiWDM_CURR</td>
<td>Measured current</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>32-47</td>
<td>TB6:13, TB6:14</td>
<td>aiWDM_SPEED</td>
<td>Measured wire feed speed</td>
<td>Welding equipment</td>
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2.1.3 I/O Signals Configuration B_AW_PROC_40

2.1.3.1 Digital outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
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<tr>
<td>0</td>
<td>doWELD</td>
<td>Activate ARCITEC power source</td>
</tr>
<tr>
<td>1</td>
<td>doQUICK_STOP</td>
<td>Quick stop of ARCITEC power source</td>
</tr>
<tr>
<td>2</td>
<td>doEmStop</td>
<td>Emergency stop</td>
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2.1.3.2 Digital inputs

<table>
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<th>Description</th>
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<tbody>
<tr>
<td>48</td>
<td>diARC_EST</td>
<td>Arc established</td>
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<td>49</td>
<td>diWELD_EST</td>
<td>Power source welding</td>
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<td>diWDU_Err</td>
<td>Weld data unit error</td>
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<td>diPS_Err</td>
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<td>71</td>
<td>diERROR_8</td>
<td>Error code</td>
</tr>
</tbody>
</table>

2.1.3.3 Group outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-11</td>
<td>goActWirFeed</td>
<td>Activate wire feed unit</td>
</tr>
<tr>
<td>16-31</td>
<td>goCAN_SCHED</td>
<td>Activate schedule number in ARCITEC power source</td>
</tr>
</tbody>
</table>

2.1.3.4 Analogue inputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
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<tbody>
<tr>
<td>0-15</td>
<td>aiVoltage</td>
<td>Voltage</td>
</tr>
<tr>
<td>16-31</td>
<td>aiCurrent</td>
<td>Current</td>
</tr>
<tr>
<td>UnitMap</td>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>32-47</td>
<td>aiPower</td>
<td>Power</td>
</tr>
</tbody>
</table>
2.1.4 I/O Signals Configuration B_AW_SIM

2.1.4.1 Digital output

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>doFEED_SIM</td>
<td>Activate wire feed</td>
</tr>
</tbody>
</table>
2.2 ARCITEC/MigRob, Robot 2

Power source

![Power source LRC/MigRob](image)

*Figure 2. Power source LRC/MigRob*

### 2.2.1 I/O Board configuration

<table>
<thead>
<tr>
<th>Address</th>
<th>Name</th>
<th>Board type</th>
<th>Digital Inputs</th>
<th>Digital Outputs</th>
<th>Analogue Inputs</th>
<th>Analogue Outputs</th>
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<tbody>
<tr>
<td>31</td>
<td>B_PROC_31</td>
<td>Process Interface Board</td>
<td>16</td>
<td>16</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AD Combi I/O</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>B_AW_PROC_41</td>
<td>Power source</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B_AW_SIM</td>
<td>Simulated Digital I/O</td>
<td></td>
<td></td>
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</tbody>
</table>
## 2.2.2 I/O Signals Configuration B_PROC_31

### 2.2.2.1 Digital outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Type</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>48</td>
<td>TB5:4</td>
<td>doGAS_2</td>
<td>Activate gas valve</td>
<td>42V AC</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>48</td>
<td>TB5:12, TB5:13</td>
<td>doGAS_2</td>
<td>Activate gas valve closing contact</td>
<td></td>
<td>Welding equipment</td>
</tr>
<tr>
<td>49</td>
<td>TB5:3</td>
<td>doACLN_TCH_2</td>
<td>Activate air cleaning of torch</td>
<td>42V AC</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>49</td>
<td>TB5:10, TB5:11</td>
<td>doACLN_TCH_2</td>
<td>Activate air cleaning of torch</td>
<td></td>
<td>Welding equipment</td>
</tr>
<tr>
<td>50</td>
<td>TB6:12</td>
<td>doPIB6_12_2</td>
<td>Activate push motor</td>
<td>42V DC</td>
<td>-</td>
</tr>
<tr>
<td>51</td>
<td>TB4:3</td>
<td>doMLUB_TCH_2</td>
<td>Activate torch lubrication</td>
<td>42V DC</td>
<td>Torch cleaner</td>
</tr>
<tr>
<td>52</td>
<td>TB4:4</td>
<td>doMCLN_TCH_2</td>
<td>Activate mechanical cleaning</td>
<td>42V DC</td>
<td>Torch cleaner</td>
</tr>
<tr>
<td>53</td>
<td>TB4:5</td>
<td>doPIB4_5_2</td>
<td>Activate wire cutter</td>
<td>42V DC</td>
<td>-</td>
</tr>
<tr>
<td>54</td>
<td>TB11:4</td>
<td>doPIB11_4_2</td>
<td>Not used</td>
<td>42V DC</td>
<td>-</td>
</tr>
<tr>
<td>55</td>
<td>TB5:14</td>
<td>doPIB5_14_2</td>
<td>Tig mode</td>
<td>42V DC</td>
<td>-</td>
</tr>
<tr>
<td>56</td>
<td>TB5:16</td>
<td>doPIB5_16_2</td>
<td>Not used</td>
<td>42V DC</td>
<td>-</td>
</tr>
<tr>
<td>57</td>
<td>TB3:1, TB3:2</td>
<td>dLRB_FAN_2</td>
<td>Activate power source closing</td>
<td></td>
<td>Welding equipment</td>
</tr>
<tr>
<td>58</td>
<td>-</td>
<td>doPIB_CYCLE_ON_2</td>
<td>CycleOn to PIB</td>
<td>logical</td>
<td>-</td>
</tr>
<tr>
<td>59</td>
<td>TB5:6</td>
<td>doSE1_SEL_2</td>
<td>Select and activate sensor 1</td>
<td>logical</td>
<td>Internal search sensor</td>
</tr>
<tr>
<td>60</td>
<td>TB5:9</td>
<td>doSE2_SEL_2</td>
<td>Select and activate sensor 2</td>
<td>logical</td>
<td>Internal search sensor</td>
</tr>
<tr>
<td>61</td>
<td>-</td>
<td>doSE_REF_2</td>
<td>Set (=Lock) reference</td>
<td>logical</td>
<td>Internal search sensor</td>
</tr>
<tr>
<td>62</td>
<td>-</td>
<td>doERR_ACK_2</td>
<td>Acknowledge error in PIB</td>
<td>logical</td>
<td>-</td>
</tr>
<tr>
<td>63</td>
<td>-</td>
<td>doFEED_2</td>
<td>Activate wire feeder</td>
<td>logical</td>
<td>Welding equipment</td>
</tr>
</tbody>
</table>
### 2.2.2.2 Digital inputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Type</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>48</td>
<td>TB6:4</td>
<td>diWR_EST_2</td>
<td>Water established</td>
<td>42V AC</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>49</td>
<td>TB6:5</td>
<td>diGA_EST_2</td>
<td>Gas established</td>
<td>42V AC</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>50</td>
<td>TB6:3</td>
<td>diARC_EN_2</td>
<td>Not used</td>
<td>42V DC</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>51</td>
<td>TB4:6</td>
<td>diMCLN_FIN_2</td>
<td>Cleaning of torch finished</td>
<td>42V DC</td>
<td>Torch cleaner</td>
</tr>
<tr>
<td>52</td>
<td>TB4:7</td>
<td>sen2</td>
<td>Welding wire detect</td>
<td>42V DC</td>
<td>BullsEye</td>
</tr>
<tr>
<td>53</td>
<td>TB6:2</td>
<td>diGUN_OK_2</td>
<td>Gun in position</td>
<td>42V DC</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>54</td>
<td>-</td>
<td>diSE1_DET_2</td>
<td>Surface detected</td>
<td>logical</td>
<td>Internal search sensor 1</td>
</tr>
<tr>
<td>55</td>
<td>-</td>
<td>diSE2_DET_2</td>
<td>Surface detected</td>
<td>logical</td>
<td>Internal search sensor 2</td>
</tr>
<tr>
<td>56</td>
<td>TB6:1</td>
<td>diGUN_RESET_2</td>
<td>Gun resetted</td>
<td>42V DC</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>57</td>
<td>-</td>
<td>diSE_VALID_2</td>
<td>Sensor valid</td>
<td>logical</td>
<td>Internal search sensor</td>
</tr>
<tr>
<td>58</td>
<td>-</td>
<td>diERR_STROBE_2</td>
<td>Error indication</td>
<td>logical</td>
<td>-</td>
</tr>
<tr>
<td>59</td>
<td>TB6:8</td>
<td>diMAN_WF_2</td>
<td>Start manual wire feed</td>
<td>42V Dct</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>60</td>
<td>-</td>
<td>diERROR_NO0_2</td>
<td>Error code</td>
<td>logical</td>
<td>-</td>
</tr>
<tr>
<td>61</td>
<td>-</td>
<td>diERROR_NO1_2</td>
<td>Error code</td>
<td>logical</td>
<td>-</td>
</tr>
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<td>62</td>
<td>-</td>
<td>diERROR_NO2_2</td>
<td>Error code</td>
<td>logical</td>
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</tr>
<tr>
<td>63</td>
<td>-</td>
<td>diERROR_NO3_2</td>
<td>Error code</td>
<td>logical</td>
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### 2.2.2.3 Analogue outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>TB3:3, TB3</td>
<td>aoWD_REF_2</td>
<td>MIG/MAG: voltage reference</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>32-47</td>
<td>TB3:5, TB3:4</td>
<td>aoINDUCT_REF_2</td>
<td>MIG/MAG: inductance reference</td>
<td>Welding equipment</td>
</tr>
</tbody>
</table>

### 2.2.2.4 Analogue inputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>TB3:7, TB3:8</td>
<td>aiPDM_VOLT_2</td>
<td>Measured voltage</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>16-31</td>
<td>TB11:1, TB11:2</td>
<td>aiPDM_CURR_2</td>
<td>Measured current</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>32-47</td>
<td>TB6:13, TB6:14</td>
<td>aiPDM_SPEED_2</td>
<td>Measured wire feed speed</td>
<td>Welding equipment</td>
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</tbody>
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2.2.3 I/O Signals Configuration B_AW_PROC_41

2.2.3.1 Digital outputs

<table>
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<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>doWELD_2</td>
<td>Activate ARCITEC power source</td>
</tr>
<tr>
<td>1</td>
<td>doQUICK_STOP_2</td>
<td>Quick stop of ARCITEC power source</td>
</tr>
<tr>
<td>2</td>
<td>doEmStop_2</td>
<td>Emergency stop</td>
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</table>

2.2.3.2 Digital inputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>48</td>
<td>diARC_EST_2</td>
<td>Arc established</td>
</tr>
<tr>
<td>49</td>
<td>diWELD_EST_2</td>
<td>Power source welding</td>
</tr>
<tr>
<td>56</td>
<td>diWDU_Err_2</td>
<td>Weld data unit error</td>
</tr>
<tr>
<td>57</td>
<td>diPS_Err_2</td>
<td>Control board error</td>
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<td>64</td>
<td>diERROR_1_2</td>
<td>Error code</td>
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<td>diERROR_2_2</td>
<td>Error code</td>
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<tr>
<td>66</td>
<td>diERROR_3_2</td>
<td>Error code</td>
</tr>
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<td>67</td>
<td>diERROR_4_2</td>
<td>Error code</td>
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<td>68</td>
<td>diERROR_5_2</td>
<td>Error code</td>
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<td>69</td>
<td>diERROR_6_2</td>
<td>Error code</td>
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<td>70</td>
<td>diERROR_7_2</td>
<td>Error code</td>
</tr>
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<td>71</td>
<td>diERROR_8_2</td>
<td>Error code</td>
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2.2.3.3 Group outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-11</td>
<td>goActWirFeed_2</td>
<td>Activate wire feed unit</td>
</tr>
<tr>
<td>16-31</td>
<td>goCAN_SCHED_2</td>
<td>Activate schedule number in ARCITEC power source</td>
</tr>
</tbody>
</table>
2.2.3.4 Analogue inputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>aiVoltage_2</td>
<td>Voltage</td>
</tr>
<tr>
<td>16-31</td>
<td>aiCurrent_2</td>
<td>Current</td>
</tr>
<tr>
<td>32-47</td>
<td>aiPower_2</td>
<td>Power</td>
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</table>
2.2.4 I/O Signals Configuration B_AW_SIM

2.2.4.1 Digital output

<table>
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<tr>
<th>UnitMap</th>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>doFEED_SIM</td>
<td>Activate wire feed</td>
</tr>
</tbody>
</table>
2.3 RPB

Power source

![Power source RPB](image)

**Figure 3. Power source RPB**

### 2.3.1 I/O Board configuration

<table>
<thead>
<tr>
<th>Address</th>
<th>Name</th>
<th>Board type</th>
<th>Digital Inputs</th>
<th>Digital Outputs</th>
<th>Analogue Inputs</th>
<th>Analogue Outputs</th>
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<tbody>
<tr>
<td>30</td>
<td>B_PROC_30</td>
<td>Process Interface Board</td>
<td>16</td>
<td>16</td>
<td>3</td>
<td>3</td>
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</tbody>
</table>
2.3.2 I/O Signals Configuration B_PROC_30

2.3.2.1 Digital outputs

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

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

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>TB3:3, TB3</td>
<td>aoWD_REF</td>
<td>MIG/MAG: voltage reference</td>
<td>Welding equipment</td>
</tr>
</tbody>
</table>

## 2.3.2.4 Analogue inputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>TB3:7, TB3:8</td>
<td>aiPDM_VOLT</td>
<td>Measured voltage</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>16-31</td>
<td>TB11:1, TB11:2</td>
<td>aiPDM_CURR</td>
<td>Measured current</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>32-47</td>
<td>TB6:13, TB6:14</td>
<td>aiPDM_SPEED</td>
<td>Measured wire feed speed</td>
<td>Welding equipment</td>
</tr>
</tbody>
</table>
2.4 RPB, Robot 2

Power source

*Figure 4. Power source RPB*

2.4.1 I/O Board configuration

<table>
<thead>
<tr>
<th>Address</th>
<th>Name</th>
<th>Board type</th>
<th>Digital Inputs</th>
<th>Digital Outputs</th>
<th>Analogue Inputs</th>
<th>Analogue Outputs</th>
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<tbody>
<tr>
<td>30</td>
<td>B_PROC_31</td>
<td>Process Interface Board</td>
<td>16</td>
<td>16</td>
<td>3</td>
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### 2.4.2 I/O Signals Configuration B_PROC_31

#### 2.4.2.1 Digital outputs

<table>
<thead>
<tr>
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<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Type</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>48</td>
<td>TB5:4</td>
<td>doGAS_2</td>
<td>Activate gas valve</td>
<td>42V AC</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>48</td>
<td>TB5:12, TB5:13</td>
<td>doGAS_2</td>
<td>Activate gas valve</td>
<td>closing contact</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>49</td>
<td>TB5:3</td>
<td>doACLN_TCH_2</td>
<td>Activate air cleaning of torch</td>
<td>42V AC</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>49</td>
<td>TB5:10, TB5:11</td>
<td>doACLN_TCH_2</td>
<td>Activate air cleaning of torch</td>
<td>closing contact</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>50</td>
<td>TB6:12</td>
<td>doPIB6_12_2</td>
<td>Activate push motor</td>
<td>42V DC</td>
<td>-</td>
</tr>
<tr>
<td>51</td>
<td>TB4:3</td>
<td>doMLUB_TCH_2</td>
<td>Activate torch lubrication</td>
<td>42V DC</td>
<td>Torch cleaner</td>
</tr>
<tr>
<td>52</td>
<td>TB4:4</td>
<td>doMCLN_TCH_2</td>
<td>Activate mechanical cleaning</td>
<td>42V DC</td>
<td>Torch cleaner</td>
</tr>
<tr>
<td>53</td>
<td>TB4:5</td>
<td>doPIB4_5_2</td>
<td>Activate wire cutter</td>
<td>42V DC</td>
<td>-</td>
</tr>
<tr>
<td>54</td>
<td>TB11:4</td>
<td>doPIB11_4_2</td>
<td>Not used</td>
<td>42V DC</td>
<td>-</td>
</tr>
<tr>
<td>55</td>
<td>TB5:14</td>
<td>doPIB5_14_2</td>
<td>Tig mode</td>
<td>42V DC</td>
<td>-</td>
</tr>
<tr>
<td>56</td>
<td>TB5:16</td>
<td>doPIB5_16_2</td>
<td>Not used</td>
<td>42V DC</td>
<td>-</td>
</tr>
<tr>
<td>57</td>
<td>TB3:1, TB3:2</td>
<td>doWELD_2</td>
<td>Activate power source</td>
<td>closing contact</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>58</td>
<td>-</td>
<td>doPIB_CYCLE_ON_2_2</td>
<td>CycleOn to PIB</td>
<td>logical</td>
<td>-</td>
</tr>
<tr>
<td>59</td>
<td>TB5:6</td>
<td>doSE1_SEL_2</td>
<td>Select and activate sensor 1</td>
<td>logical 24V DC</td>
<td>Internal search sensor</td>
</tr>
<tr>
<td>60</td>
<td>TB5:9</td>
<td>doSE2_SEL_2</td>
<td>Select and activate sensor 2</td>
<td>logical 24V DC</td>
<td>Internal search sensor</td>
</tr>
<tr>
<td>61</td>
<td>-</td>
<td>doSE_REF_2</td>
<td>Set (=Lock) reference</td>
<td>logical</td>
<td>Internal search sensor</td>
</tr>
<tr>
<td>62</td>
<td>-</td>
<td>doERR_ACK_2</td>
<td>Acknowledge error in PIB</td>
<td>logical</td>
<td>-</td>
</tr>
<tr>
<td>63</td>
<td>-</td>
<td>doFEED_2</td>
<td>Activate wire feeder</td>
<td>logical</td>
<td>Welding equipment</td>
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</tbody>
</table>
### 2.4.2.2 Digital inputs

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

### 2.4.2.3 Analogue outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>TB3:3, TB3</td>
<td>aoWD_REF_2</td>
<td>MIG/MAG: voltage reference</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>32-47</td>
<td>TB3:5, TB3:4</td>
<td>aoINDUCT_REF_2</td>
<td>MIG/MAG: inductance reference</td>
<td>Welding equipment</td>
</tr>
</tbody>
</table>

### 2.4.2.4 Analogue inputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>TB3:7, TB3:8</td>
<td>aiPDM_VOLT_2</td>
<td>Measured voltage</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>16-31</td>
<td>TB11:1, TB11:2</td>
<td>aiPDM_CURR_2</td>
<td>Measured current</td>
<td>Welding equipment</td>
</tr>
<tr>
<td>32-47</td>
<td>TB6:13, TB6:14</td>
<td>aiPDM_SPEED_2</td>
<td>Measured wire feed speed</td>
<td>Welding equipment</td>
</tr>
</tbody>
</table>
2.5 Fronius

Process Interface DeviceNet for Fronius

2.5.1 I/O Board configuration

<table>
<thead>
<tr>
<th>Address</th>
<th>Name</th>
<th>Board type</th>
<th>Digital Inputs</th>
<th>Digital Outputs</th>
<th>Analogue Inputs</th>
<th>Analogue Outputs</th>
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<tbody>
<tr>
<td>40</td>
<td>FRON_BOARD_40</td>
<td>Dvnet</td>
<td>96</td>
<td>96</td>
<td>4</td>
<td>4</td>
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<tr>
<td>20</td>
<td>BOARD20 (Option)</td>
<td>Digital I/O</td>
<td>16</td>
<td>16</td>
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</table>
### 2.5.2 I/O Signals Configuration FRON_BOARD_40

#### 2.5.2.1 Digital outputs

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

**Fronius**

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Type</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>A204:X4</td>
<td>doPROG_BIT4</td>
<td>Call in program (synergy) number 4</td>
<td>Output 2:Bit 11</td>
<td>Power source</td>
</tr>
<tr>
<td>28</td>
<td>A204:X4</td>
<td>doPROG_BIT5</td>
<td>Call in program (synergy) number 5</td>
<td>Output 1:Bit 0</td>
<td>Power source</td>
</tr>
<tr>
<td>29</td>
<td>A204:X4</td>
<td>doPROG_BIT6</td>
<td>Call in program (synergy) number 6</td>
<td>Output 1:Bit 1</td>
<td>Power source</td>
</tr>
<tr>
<td>30</td>
<td>A204:X4</td>
<td>doPROG_BIT7</td>
<td>Call in program (synergy) number 7</td>
<td>Output 1:Bit 2</td>
<td>Power source</td>
</tr>
<tr>
<td>31</td>
<td>A204:X4</td>
<td>doWELD_SIM</td>
<td>Simulate welding, high active</td>
<td>Output 1:Bit 3</td>
<td>Power source</td>
</tr>
</tbody>
</table>
### 2.5.2.2 Digital inputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Type</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>A204:X4</td>
<td>diARC_EST</td>
<td>Welding current flow</td>
<td>Input 1: Bit 0</td>
<td>Power source</td>
</tr>
<tr>
<td>2</td>
<td>A204:X4</td>
<td>diPROC_ACTIVE</td>
<td>Welding process active</td>
<td>Input 1: Bit 2</td>
<td>Power source</td>
</tr>
<tr>
<td>3</td>
<td>A204:X4</td>
<td>diPOWER_ON</td>
<td>Main current signal</td>
<td>Input 1: Bit 3</td>
<td>Power source</td>
</tr>
<tr>
<td>4</td>
<td>A204:X4</td>
<td>diCOLL_SENS</td>
<td>Torch in position</td>
<td>Input 1: Bit 4</td>
<td>Power source</td>
</tr>
<tr>
<td>5</td>
<td>A204:X4</td>
<td>diPOWER_READY</td>
<td>Power source OK</td>
<td>Input 1: Bit 5, 6</td>
<td>Power source</td>
</tr>
<tr>
<td>6</td>
<td>A204:X4</td>
<td>diCOMM_READY</td>
<td>Communication OK</td>
<td>Input 1: Bit 6, 7</td>
<td>Power source</td>
</tr>
<tr>
<td>8</td>
<td>A204:X4</td>
<td>diERR_BIT1</td>
<td>Error number 0-255, see above</td>
<td>Input 1: Bit 8</td>
<td>Power source</td>
</tr>
<tr>
<td>9</td>
<td>A204:X4</td>
<td>diERR_BIT2</td>
<td>Error number 0-255, see above</td>
<td>Input 1: Bit 9</td>
<td>Power source</td>
</tr>
<tr>
<td>10</td>
<td>A204:X4</td>
<td>diERR_BIT3</td>
<td>Error number 0-255, see above</td>
<td>Input 1: Bit 10</td>
<td>Power source</td>
</tr>
<tr>
<td>11</td>
<td>A204:X4</td>
<td>diERR_BIT4</td>
<td>Error number 0-255, see above</td>
<td>Input 1: Bit 11</td>
<td>Power source</td>
</tr>
<tr>
<td>12</td>
<td>A204:X4</td>
<td>diERR_BIT5</td>
<td>Error number 0-255, see above</td>
<td>Input 1: Bit 12</td>
<td>Power source</td>
</tr>
<tr>
<td>13</td>
<td>A204:X4</td>
<td>diERR_BIT6</td>
<td>Error number 0-255, see above</td>
<td>Input 1: Bit 13</td>
<td>Power source</td>
</tr>
<tr>
<td>14</td>
<td>A204:X4</td>
<td>diERR_BIT7</td>
<td>Error number 0-255, see above</td>
<td>Input 1: Bit 14</td>
<td>Power source</td>
</tr>
<tr>
<td>15</td>
<td>A204:X4</td>
<td>diERR_BIT8</td>
<td>Error number 0-255, see above</td>
<td>Input 1: Bit 15</td>
<td>Power source</td>
</tr>
</tbody>
</table>

### 2.5.2.3 Analogue outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A204:X4</td>
<td>aoPower</td>
<td>Power reference</td>
<td>Power source</td>
</tr>
<tr>
<td>2</td>
<td>A204:X4</td>
<td>aoVoltage</td>
<td>Arc voltage correction</td>
<td>Power source</td>
</tr>
<tr>
<td>3</td>
<td>A204:X4</td>
<td>awPulseCorr</td>
<td>Pulse/ Dynamic correction</td>
<td>Power source</td>
</tr>
<tr>
<td>4</td>
<td>A204:X4</td>
<td>awBurnBackCorr</td>
<td>Burn back correction</td>
<td>Power source</td>
</tr>
</tbody>
</table>

### 2.5.2.4 Group outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-4</td>
<td>A204:X4</td>
<td>goMODE</td>
<td>Select work mode</td>
<td>Power source</td>
</tr>
<tr>
<td>16-23</td>
<td>A204:X4</td>
<td>goJOB</td>
<td>Select job</td>
<td>Power source</td>
</tr>
<tr>
<td>24-30</td>
<td>A204:X4</td>
<td>goPROG</td>
<td>Select program/ synergy</td>
<td>Power source</td>
</tr>
</tbody>
</table>
2.5.2.5  Group input

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A204:X4</td>
<td>gi_error</td>
<td>Error codes</td>
<td>Power source</td>
</tr>
</tbody>
</table>
### 2.5.3 I/O Signals Configuration BOARD20

#### 2.5.3.1 Digital outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>X2:1</td>
<td>doMCLN_TCH</td>
<td>Activate mechanical cleaning</td>
<td>TSC</td>
</tr>
<tr>
<td>10</td>
<td>X2:2</td>
<td>doMLUB_TCH</td>
<td>Activate torch lubrication</td>
<td>TSC</td>
</tr>
<tr>
<td>11</td>
<td>X2:3</td>
<td>doWIR_CUT</td>
<td>Activate wire cutter</td>
<td>TSC</td>
</tr>
</tbody>
</table>

#### 2.5.3.2 Digital inputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>X3:1</td>
<td>diMCLN_FIN</td>
<td>Cleaning of torch finished</td>
<td>TCH</td>
</tr>
</tbody>
</table>
2.6 Fronius, Robot 2

Process Interface *DeviceNet* for Fronius

![Welding equipment Fronius](image)

*Figure 6. Welding equipment Fronius*

### 2.6.1 I/O Board configuration

<table>
<thead>
<tr>
<th>Address</th>
<th>Name</th>
<th>Board type</th>
<th>Digital Inputs</th>
<th>Digital Outputs</th>
<th>Analogue Inputs</th>
<th>Analogue Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>FRON_BOARD_41</td>
<td>Dvnet</td>
<td>96</td>
<td>96</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>20</td>
<td>BOARD20 (Option)</td>
<td>Digital I/O</td>
<td>16</td>
<td>16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 2.6.2 I/O Signals Configuration FRON_BOARD_41

#### 2.6.2.1 Digital outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Type</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>A204:X4</td>
<td>doWeld_2</td>
<td>Welding start High active</td>
<td>Output 1:Bit 0</td>
<td>Power source</td>
</tr>
<tr>
<td>1</td>
<td>A204:X4</td>
<td>doQstop_2</td>
<td>Robot ready/ Fast stop High active/ low active</td>
<td>Output 1:Bit 1</td>
<td>Power source</td>
</tr>
<tr>
<td>2</td>
<td>A204:X4</td>
<td>doMODE_BIT1_2</td>
<td>000 Standard synergy 001 Pulsed synergy 010 Job mode 011 Param. selection Internal See system manual, flap 20.</td>
<td>Output 1:Bit 2</td>
<td>Power source</td>
</tr>
<tr>
<td>3</td>
<td>A204:X4</td>
<td>doMODE_BIT2_2</td>
<td></td>
<td>Output 1:Bit 3</td>
<td>Power source</td>
</tr>
<tr>
<td>4</td>
<td>A204:X4</td>
<td>doMODE_BIT3_2</td>
<td></td>
<td>Output 1:Bit 4</td>
<td>Power source</td>
</tr>
<tr>
<td>8</td>
<td>A204:X4</td>
<td>doGAS_2</td>
<td>Activate gas valve</td>
<td>Output 1:Bit 8</td>
<td>Power source</td>
</tr>
<tr>
<td>9</td>
<td>A204:X4</td>
<td>doFEED_2</td>
<td>Activate wire feeder forward</td>
<td>Output 1:Bit 9</td>
<td>Power source</td>
</tr>
<tr>
<td>10</td>
<td>A204:X4</td>
<td>doFEED_BWD_2</td>
<td>Activate wire feeder reverse</td>
<td>Output 1:Bit 10</td>
<td>Power source</td>
</tr>
<tr>
<td>11</td>
<td>A204:X4</td>
<td>doRESET_ERR_2</td>
<td>Resetting error Out 1:Bit 11, Inverted</td>
<td></td>
<td>Power source</td>
</tr>
<tr>
<td>12</td>
<td>doTOUCH_SENS_2</td>
<td></td>
<td></td>
<td>Output 1:Bit 12</td>
<td>Power source</td>
</tr>
<tr>
<td>13</td>
<td>A204:X4</td>
<td>do_AIR_2</td>
<td>Activate air cleaning of torch</td>
<td></td>
<td>Power source</td>
</tr>
<tr>
<td>16</td>
<td>A204:X4</td>
<td>doJOB_BIT1_2</td>
<td>Call job number 1</td>
<td>Output 2:Bit 0</td>
<td>Power source</td>
</tr>
<tr>
<td>17</td>
<td>A204:X4</td>
<td>doJOB_BIT2_2</td>
<td>Call job number 2</td>
<td>Output 2:Bit 1</td>
<td>Power source</td>
</tr>
<tr>
<td>18</td>
<td>A204:X4</td>
<td>doJOB_BIT3_2</td>
<td>Call job number 3</td>
<td>Output 2:Bit 2</td>
<td>Power source</td>
</tr>
<tr>
<td>19</td>
<td>A204:X4</td>
<td>doJOB_BIT4_2</td>
<td>Call job number 4</td>
<td>Output 2:Bit 3</td>
<td>Power source</td>
</tr>
<tr>
<td>20</td>
<td>A204:X4</td>
<td>doJOB_BIT5_2</td>
<td>Call job number 5</td>
<td>Output 2:Bit 4</td>
<td>Power source</td>
</tr>
<tr>
<td>21</td>
<td>A204:X4</td>
<td>doJOB_BIT6_2</td>
<td>Call job number 6</td>
<td>Output 2:Bit 5</td>
<td>Power source</td>
</tr>
<tr>
<td>22</td>
<td>A204:X4</td>
<td>doJOB_BIT7_2</td>
<td>Call job number 7</td>
<td>Output 2:Bit 6</td>
<td>Power source</td>
</tr>
<tr>
<td>23</td>
<td>A204:X4</td>
<td>doJOB_BIT8_2</td>
<td>Call job number 8</td>
<td>Output 2:Bit 7</td>
<td>Power source</td>
</tr>
<tr>
<td>24</td>
<td>A204:X4</td>
<td>doPROG_BIT1_2</td>
<td>Call in program (synergy) number 1</td>
<td>Output 2:Bit 8</td>
<td>Power source</td>
</tr>
<tr>
<td>25</td>
<td>A204:X4</td>
<td>doPROG_BIT2_2</td>
<td>Call in program (synergy) number 2</td>
<td>Output 2:Bit 9</td>
<td>Power source</td>
</tr>
<tr>
<td>26</td>
<td>A204:X4</td>
<td>doPROG_BIT3_2</td>
<td>Call in program (synergy) number 3</td>
<td>Output 2:Bit 10</td>
<td>Power source</td>
</tr>
</tbody>
</table>
### 2.6.2.2 Digital inputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Type</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>A204:X4</td>
<td>doPROG_BIT4_2</td>
<td>Call in program (synergy) number 4</td>
<td>Output 2: Bit 11</td>
<td>Power source</td>
</tr>
<tr>
<td>28</td>
<td>A204:X4</td>
<td>doPROG_BIT5_2</td>
<td>Call in program (synergy) number 5</td>
<td>Output 1: Bit 0</td>
<td>Power source</td>
</tr>
<tr>
<td>29</td>
<td>A204:X4</td>
<td>doPROG_BIT6_2</td>
<td>Call in program (synergy) number 6</td>
<td>Output 1: Bit 1</td>
<td>Power source</td>
</tr>
<tr>
<td>30</td>
<td>A204:X4</td>
<td>doPROG_BIT7_2</td>
<td>Call in program (synergy) number 7</td>
<td>Output 1: Bit 2</td>
<td>Power source</td>
</tr>
<tr>
<td>31</td>
<td>A204:X4</td>
<td>doWELD_SIM_2</td>
<td>Simulate welding, high active</td>
<td>Output 1: Bit 3</td>
<td>Power source</td>
</tr>
<tr>
<td>0</td>
<td>A204:X4</td>
<td>diARC_EST_2</td>
<td>Welding current flow</td>
<td>Input 1: Bit 0</td>
<td>Power source</td>
</tr>
<tr>
<td>2</td>
<td>A204:X4</td>
<td>diPROC_ACTIVE_2</td>
<td>Welding process active</td>
<td>Input 1: Bit 2</td>
<td>Power source</td>
</tr>
<tr>
<td>3</td>
<td>A204:X4</td>
<td>diPOWER_ON_2</td>
<td>Main current signal</td>
<td>Input 1: Bit 3</td>
<td>Power source</td>
</tr>
<tr>
<td>4</td>
<td>A204:X4</td>
<td>diCOLL_SENS_2</td>
<td>Torch in position</td>
<td>Input 1: Bit 4</td>
<td>Power source</td>
</tr>
<tr>
<td>5</td>
<td>A204:X4</td>
<td>diPOWER_READY_2</td>
<td>Power source OK</td>
<td>Input 1: Bit 5, Iverted</td>
<td>Power source</td>
</tr>
<tr>
<td>6</td>
<td>A204:X4</td>
<td>diCOMM_READY_2</td>
<td>Communication OK</td>
<td>Input 1: Bit 6, Iverted</td>
<td>Power source</td>
</tr>
<tr>
<td>8</td>
<td>A204:X4</td>
<td>diERR_BIT1_2</td>
<td>Error number 0-255,</td>
<td>Input 1: Bit 8</td>
<td>Power source</td>
</tr>
<tr>
<td>9</td>
<td>A204:X4</td>
<td>diERR_BIT2_2</td>
<td></td>
<td>Input 1: Bit 9</td>
<td>Power source</td>
</tr>
<tr>
<td>10</td>
<td>A204:X4</td>
<td>diERR_BIT3_2</td>
<td></td>
<td>Input 1: Bit 10</td>
<td>Power source</td>
</tr>
<tr>
<td>11</td>
<td>A204:X4</td>
<td>diERR_BIT4_2</td>
<td></td>
<td>Input 1: Bit 11</td>
<td>Power source</td>
</tr>
<tr>
<td>12</td>
<td>A204:X4</td>
<td>diERR_BIT5_2</td>
<td></td>
<td>Input 1: Bit 12</td>
<td>Power source</td>
</tr>
<tr>
<td>13</td>
<td>A204:X4</td>
<td>diERR_BIT6_2</td>
<td>Error number 0-255, see above</td>
<td>Input 1: Bit 13</td>
<td>Power source</td>
</tr>
<tr>
<td>14</td>
<td>A204:X4</td>
<td>diERR_BIT7_2</td>
<td></td>
<td>Input 1: Bit 14</td>
<td>Power source</td>
</tr>
<tr>
<td>15</td>
<td>A204:X4</td>
<td>diERR_BIT8_2</td>
<td>Error number 0-255, see above</td>
<td>Input 1: Bit 15</td>
<td>Power source</td>
</tr>
</tbody>
</table>
### 2.6.2.3 Analogue outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A204:X4</td>
<td>aoPower_2</td>
<td>Power reference</td>
<td>Power source</td>
</tr>
<tr>
<td>2</td>
<td>A204:X4</td>
<td>aoVoltage_2</td>
<td>Arc voltage correction</td>
<td>Power source</td>
</tr>
<tr>
<td>3</td>
<td>A204:X4</td>
<td>awPulseCorr_2</td>
<td>Pulse/ Dynamic correction</td>
<td>Power source</td>
</tr>
<tr>
<td>4</td>
<td>A204:X4</td>
<td>awBurnBackCorr_2</td>
<td>Burn back correction</td>
<td>Power source</td>
</tr>
</tbody>
</table>

### 2.6.2.4 Group outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-4</td>
<td>A204:X4</td>
<td>goMODE_2</td>
<td>Select work mode</td>
<td>Power source</td>
</tr>
<tr>
<td>16-23</td>
<td>A204:X4</td>
<td>goJOB_2</td>
<td>Select job</td>
<td>Power source</td>
</tr>
<tr>
<td>24-30</td>
<td>A204:X4</td>
<td>goPROG_2</td>
<td>Select program/ synergy</td>
<td>Power source</td>
</tr>
</tbody>
</table>

### 2.6.2.5 Group input

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A204:X4</td>
<td>gi_error_2</td>
<td>Error codes</td>
<td>Power source</td>
</tr>
</tbody>
</table>
2.6.3 I/O Signals Configuration BOARD20

### 2.6.3.1 Digital outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>X2:1</td>
<td>doMCLN_TCH_2</td>
<td>Activate mechanical cleaning</td>
<td>TSC</td>
</tr>
<tr>
<td>10</td>
<td>X2:2</td>
<td>doMLUB_TCH_2</td>
<td>Activate torch lubrication</td>
<td>TSC</td>
</tr>
<tr>
<td>11</td>
<td>X2:3</td>
<td>doWIR_CUT_2</td>
<td>Activate wire cutter</td>
<td>TSC</td>
</tr>
</tbody>
</table>

### 2.6.3.2 Digital inputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>X3:1</td>
<td>diMCLN_FIN_2</td>
<td>Cleaning of torch finished</td>
<td>TCH</td>
</tr>
</tbody>
</table>
3 Positioner Interface

General

This chapter describes the I/O configurations for positioners delivered by ABB Technologies AB.
These configurations vary depending on which positioner you have:

- For positioner A, see “IRBP A” on page 34.
- For positioner B or D, see “IRBP B/D” on page 43.
- For positioner C, see “IRBP C” on page 47.
- For positioner C Index, see “IRBP C Index” on page 51.
- For positioner K or R, see “IRBP K/R” on page 55.
- For positioner L, see “IRBP L” on page 61.
3.1 IRBP A

3.1.1 I/O board Configuration for positioner

<table>
<thead>
<tr>
<th>Address</th>
<th>Name</th>
<th>Board type</th>
<th>Digital inputs</th>
<th>Digital outputs</th>
<th>Digital inputs</th>
<th>Analogue outputs</th>
<th>Relay outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>B_POS_SIM</td>
<td>Simulated digital I/O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>B_POS_21</td>
<td>Relay I/O</td>
<td>7</td>
<td>12</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Positioner type IRBP A

![Figur 7  Positioner type IRBP A](image-url)
3.1.2 Simulated outputs for B_POS_SIM

3.1.2.1 Simulated outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>soACT_STN1</td>
<td>Activate mechanical unit 1</td>
</tr>
<tr>
<td>1</td>
<td>soACT_STN2</td>
<td>Activate mechanical unit 2</td>
</tr>
</tbody>
</table>

3.1.2.2 Simulated inputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>siSTN1_ACT</td>
<td>Mechanical unit 1 activated</td>
</tr>
<tr>
<td>1</td>
<td>siSTN2_ACT</td>
<td>Mechanical unit 2 activated</td>
</tr>
</tbody>
</table>
### 3.1.3 I/O-Signals configuration for B_POS_21

#### 3.1.3.1 Digital outputs TB4

<table>
<thead>
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<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>doACT_K1</td>
<td>Activate mechanical unit 1</td>
<td>Positioner</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>doACT_K2</td>
<td>Activate mechanical unit 2</td>
<td>Positioner</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>doACT_K3</td>
<td>Activate mechanical unit 3</td>
<td>Positioner</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>doACT_K4</td>
<td>Activate mechanical unit 4</td>
<td>Positioner</td>
</tr>
<tr>
<td>5</td>
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<td></td>
<td></td>
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<tr>
<td>6</td>
<td>5</td>
<td>doACT_K11</td>
<td>Activate release break 1</td>
<td>Positioner</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
<td>doACT_K12</td>
<td>Activate release break 2</td>
<td>Positioner</td>
</tr>
<tr>
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<td>7</td>
<td>doACT_K13</td>
<td>Activate release break 3</td>
<td>Positioner</td>
</tr>
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<td>8</td>
<td>doACT_K14</td>
<td>Activate release break 4</td>
<td>Positioner</td>
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<td>10</td>
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<td>14</td>
<td>24V Output 1-12</td>
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#### 3.1.3.2 Digital inputs TB3

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<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
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<td>Positioner</td>
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<td>1</td>
<td>diK2_ACT</td>
<td>Mechanical unit 2 activated</td>
<td>Positioner</td>
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<td>2</td>
<td>diK3_ACT</td>
<td>Mechanical unit 3 activated</td>
<td>Positioner</td>
</tr>
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<td>4</td>
<td>3</td>
<td>diK4_ACT</td>
<td>Mechanical unit 4 activated</td>
<td>Positioner</td>
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<td>5</td>
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<td></td>
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<tr>
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<td>0 V input 1-7</td>
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</table>
3.1.4 Configuration cross-connections

Figure 8. Cross-connection
Positioner Interface
IRBP B/D

3.2 IRBP B/D

3.2.1 I/O board Configuration for positioner

<table>
<thead>
<tr>
<th>Address</th>
<th>Name</th>
<th>Board type</th>
<th>Digital inputs</th>
<th>Digital outputs</th>
<th>Digital inputs</th>
<th>Analogue outputs</th>
<th>Relay outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>B_POS_SIM</td>
<td>Simulated digital I/O</td>
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<td>Relay I/O</td>
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<td>12</td>
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</table>

Positioner type IRBP B/D

Figur 9 Positioner type IRBP B/D
3.2.2 Simulated outputs for B_POS_SIM

3.2.2.1 Simulated outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>soACT_STN1</td>
<td>Activate mechanical unit 1</td>
</tr>
<tr>
<td>1</td>
<td>soACT_STN2</td>
<td>Activate mechanical unit 2</td>
</tr>
<tr>
<td>2</td>
<td>soACT_INTCH</td>
<td>Activate mechanical unit 3</td>
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</table>

3.2.2.2 Simulated inputs

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<thead>
<tr>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>siSTN1_ACT</td>
<td>Mechanical unit 1 activated</td>
</tr>
<tr>
<td>1</td>
<td>siSTN2_ACT</td>
<td>Mechanical unit 2 activated</td>
</tr>
<tr>
<td>2</td>
<td>si_INTCH_ACT</td>
<td>Mechanical unit 3 activated</td>
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</tbody>
</table>
### 3.2.3 I/O-Signals configuration for B_POS_21

#### 3.2.3.1 Digital outputs TB4

<table>
<thead>
<tr>
<th>Output</th>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>doACT_K1</td>
<td>Activate mechanical unit 1</td>
<td>Positioner</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>doACT_K2</td>
<td>Activate mechanical unit 2</td>
<td>Positioner</td>
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<tr>
<td>3</td>
<td>2</td>
<td>doACT_K3</td>
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<td>4</td>
<td>3</td>
<td>doACT_K4</td>
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<tr>
<td>5</td>
<td>4</td>
<td>doACT_K5</td>
<td>Activate mechanical unit 5</td>
<td>Positioner</td>
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<tr>
<td>6</td>
<td>5</td>
<td>doACT_K11</td>
<td>Activate release break 1</td>
<td>Positioner</td>
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<tr>
<td>7</td>
<td>6</td>
<td>doACT_K12</td>
<td>Activate release break 2</td>
<td>Positioner</td>
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<tr>
<td>8</td>
<td>7</td>
<td>doACT_K13</td>
<td>Activate release break 3</td>
<td>Positioner</td>
</tr>
<tr>
<td>9</td>
<td>8</td>
<td>doACT_K14</td>
<td>Activate release break 4</td>
<td>Positioner</td>
</tr>
<tr>
<td>10</td>
<td>9</td>
<td>doACT_K15</td>
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<td>13</td>
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<td>0V Output</td>
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<tr>
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<td>24V Output</td>
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#### 3.2.3.2 Digital inputs TB3

<table>
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<tr>
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<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
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</thead>
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<tr>
<td>1</td>
<td>0</td>
<td>diK1_ACT</td>
<td>Mechanical unit 1 activated</td>
<td>Positioner</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>diK2_ACT</td>
<td>Mechanical unit 2 activated</td>
<td>Positioner</td>
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<td>3</td>
<td>2</td>
<td>diK3_ACT</td>
<td>Mechanical unit 3 activated</td>
<td>Positioner</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>diK4_ACT</td>
<td>Mechanical unit 4 activated</td>
<td>Positioner</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>diK5_ACT</td>
<td>Mechanical unit 5 activated</td>
<td>Positioner</td>
</tr>
<tr>
<td>6</td>
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<tr>
<td>8</td>
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<td>0 V input 1-7</td>
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</table>
3.2.4 Configuration cross-connections

![Cross-connections diagram]

Figure 10. Cross-connections
3.3 IRBP C

3.3.1 I/O board Configuration for positioner

<table>
<thead>
<tr>
<th>Address</th>
<th>Name</th>
<th>Board type</th>
<th>Digital inputs</th>
<th>Digital outputs</th>
<th>Analogue inputs</th>
<th>Analogue outputs</th>
<th>Relay outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>B_POS_SIM</td>
<td>Simulated digital I/O</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>21</td>
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<td>Relay I/O</td>
<td>7</td>
<td>12</td>
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</tr>
</tbody>
</table>

![Figure 11: Positioner type IRBP C](image)
3.3.2 Simulated outputs for B_POS_SIM

3.3.2.1 Simulated outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>soACT_STN1</td>
<td>Activate mechanical unit 1</td>
</tr>
</tbody>
</table>

3.3.2.2 Simulated inputs

<table>
<thead>
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<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>siSTN1_ACT</td>
<td>Mechanical unit 1 activated</td>
</tr>
</tbody>
</table>
### 3.3.3 I/O-Signals configuration for B_POS_21

#### 3.3.3.1 Digital outputs TB4

<table>
<thead>
<tr>
<th>Output</th>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
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</thead>
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<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>doACT_K5</td>
<td>Activate mechanical unit 1</td>
<td>Positioner</td>
</tr>
<tr>
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<td>5</td>
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<td></td>
<td></td>
</tr>
<tr>
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<td>8</td>
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<td></td>
</tr>
<tr>
<td>10</td>
<td>9</td>
<td>doACT_K15</td>
<td>Activate release break 1</td>
<td>Positioner</td>
</tr>
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<td>11</td>
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#### 3.3.3.2 Digital inputs TB3

<table>
<thead>
<tr>
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<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
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<td>3</td>
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<td></td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>diK5_ACT</td>
<td>Mechanical unit 1 activated</td>
<td>Positioner</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>diLS_1_INPOS</td>
<td>Limit switch station 1</td>
<td>Station interchange unit</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
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<td>Limit switch station 2</td>
<td>Station interchange unit</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>0 V input 1-7</td>
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</tbody>
</table>
3.3.4 Configuration cross-connections

![Cross-connections diagram](image)

*Figure 12. Cross-connections*
### 3.4 IRBP C Index

#### 3.4.1 I/O board Configuration for positioner

<table>
<thead>
<tr>
<th>Address</th>
<th>Name</th>
<th>Board type</th>
<th>Digital inputs</th>
<th>Digital outputs</th>
<th>Analogue inputs</th>
<th>Analogue outputs</th>
<th>Relay outputs</th>
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</thead>
<tbody>
<tr>
<td>-</td>
<td>B_POS_SIM</td>
<td>Simulated digital I/O</td>
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<td></td>
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<td>B_POS_21</td>
<td>Relay I/O</td>
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</table>

**Figure 13  Positioner type IRBP C Index**
3.4.2 Simulated outputs for B_POS_SIM

3.4.2.1 Simulated outputs

<table>
<thead>
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<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
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<td>soACT_STN1</td>
<td>Activate mechanical unit 1</td>
</tr>
</tbody>
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3.4.2.2 Simulated inputs

<table>
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<th>Description</th>
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</thead>
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</table>
### 3.4.3 I/O-Signals configuration for B_POS_21

#### 3.4.3.1 Digital outputs TB4

<table>
<thead>
<tr>
<th>Output</th>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
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<td>8</td>
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</tr>
<tr>
<td>10</td>
<td>9</td>
<td>doACT_K15</td>
<td>Activate release break 1</td>
<td>Positioner</td>
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<tr>
<td>14</td>
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<td>24V Output</td>
<td>1-12</td>
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#### 3.4.3.2 Digital inputs TB3

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<tr>
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<th>UnitMap</th>
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<th>Description</th>
<th>Connected to unit</th>
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</thead>
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<td></td>
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</tr>
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<td>5</td>
<td>4</td>
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<td>6</td>
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<td>Station interchange unit</td>
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<tr>
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<td>0 V input 1-7</td>
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</tbody>
</table>
3.4.4 Configuration cross-connections

Figure 14. Cross-connections
3.5 IRBP K/R

3.5.1 I/O board configuration for positioner

<table>
<thead>
<tr>
<th>Address</th>
<th>Name</th>
<th>Board type</th>
<th>Digital inputs</th>
<th>Digital outputs</th>
<th>Analogue inputs</th>
<th>Analogue outputs</th>
<th>Relay outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B_POS_SIM</td>
<td>Simulated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>digital I/O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>B_POS_21</td>
<td>Relay I/O</td>
<td>7</td>
<td>12</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Positioner type IRBP K/R

![Figur 15  Positioner type IRBP R/K](image)
3.5.2 Simulated outputs for B_POS_SIM

3.5.2.1 Simulated outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>soACT_STN1</td>
<td>Activate mechanical unit 1</td>
</tr>
<tr>
<td>1</td>
<td>soACT_STN2</td>
<td>Activate mechanical unit 2</td>
</tr>
<tr>
<td>2</td>
<td>soACT_INTCH</td>
<td>Activate mechanical unit 3</td>
</tr>
</tbody>
</table>

3.5.2.2 Simulated inputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>siSTN1_ACT</td>
<td>Mechanical unit 1 activated</td>
</tr>
<tr>
<td>1</td>
<td>siSTN2_ACT</td>
<td>Mechanical unit 2 activated</td>
</tr>
<tr>
<td>2</td>
<td>siINTCH_ACT</td>
<td>Mechanical unit 3 activated</td>
</tr>
</tbody>
</table>
### 3.5.3 I/O-Signals configuration for B_POS_21

#### 3.5.3.1 Digital outputs TB4

<table>
<thead>
<tr>
<th>Output</th>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>doACT_K1</td>
<td>Activate mechanical unit 1</td>
<td>Positioner</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>doACT_K2</td>
<td>Activate mechanical unit 2</td>
<td>Positioner</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>doACT_K5</td>
<td>Activate mechanical unit 3</td>
<td>Positioner</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>doACT_K11</td>
<td>Activate release break 1</td>
<td>Positioner</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
<td>doACT_K12</td>
<td>Activate release break 2</td>
<td>Positioner</td>
</tr>
<tr>
<td>8</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>9</td>
<td>doACT_K15</td>
<td>Activate release break 3</td>
<td>Positioner</td>
</tr>
<tr>
<td>11</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>0V Output</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>24V Output 1-12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 3.5.3.2 Digital inputs TB3

<table>
<thead>
<tr>
<th>Input</th>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>diK1_ACT</td>
<td>Mechanical unit 1 activated</td>
<td>Positioner</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>diK2_ACT</td>
<td>Mechanical unit 2 activated</td>
<td>Positioner</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>diK5_ACT</td>
<td>Mechanical unit 3 activated</td>
<td>Positioner</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>diLS_1_INPOS</td>
<td>Limit switch station 1</td>
<td>Station interchange unit</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
<td>diLS_2_INPOS</td>
<td>Limit switch station 2</td>
<td>Station interchange unit</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>0 V input 1-7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.5.4 Configuration cross-connections

3.5.4.1 K/R 3DU (3 axes)

Figure 16. Cross-connections 3DU
3.5.4.2 K/R 1DU (1-axis)

![Diagram of Cross-connections 1DU, (1-axis)]

*Figure 17. Cross-connections 1DU, (1-axis)*
3.6 IRBP L

3.6.1 I/O board configuration for positioner

<table>
<thead>
<tr>
<th>Address</th>
<th>Name</th>
<th>Board type</th>
<th>Digital inputs</th>
<th>Digital outputs</th>
<th>Analogue inputs</th>
<th>Analogue outputs</th>
<th>Relay outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>B_POS_SIM</td>
<td>Simulated digital I/O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>B_POS_21</td>
<td>Relay I/O</td>
<td>7</td>
<td>12</td>
<td>-</td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

Positioner type IRBP L

Figur 18  Positioner type IRBP L
### 3.6.2 Simulated outputs for B_POS_SIM

#### 3.6.2.1 Simulated outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>soACT_STN1</td>
<td>Activate mechanical unit 1</td>
</tr>
<tr>
<td>1</td>
<td>soACT_STN2</td>
<td>Activate mechanical unit 2</td>
</tr>
</tbody>
</table>

#### 3.6.2.2 Simulated inputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>siSTN1_ACT</td>
<td>Mechanical unit 1 activated</td>
</tr>
<tr>
<td>1</td>
<td>siSTN2_ACT</td>
<td>Mechanical unit 2 activated</td>
</tr>
</tbody>
</table>
3.6.3 I/O-Signals configuration for B_POS_21

3.6.3.1 Digital outputs TB4

<table>
<thead>
<tr>
<th>Output</th>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>doACT_K1</td>
<td>Activate mechanical unit 1</td>
<td>Positioner</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>doACT_K2</td>
<td>Activate mechanical unit 2</td>
<td>Positioner</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>doACT_K11</td>
<td>Activate release break 1</td>
<td>Positioner</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
<td>doACT_K12</td>
<td>Activate release break 2</td>
<td>Positioner</td>
</tr>
<tr>
<td>8</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>11</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>13</td>
<td></td>
<td>0V Output</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>24V Output</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.6.3.2 Digital inputs TB3

<table>
<thead>
<tr>
<th>Input</th>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>diK1_ACT</td>
<td>Mechanical unit 1 activated</td>
<td>Positioner</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>diK2_ACT</td>
<td>Mechanical unit 2 activated</td>
<td>Positioner</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>0 V input 1-7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.6.4 Configuration cross-connections

Figure 19. Cross-connections
4 Operator Interface IRBP

General

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

4.1 I/O board Configuration

<table>
<thead>
<tr>
<th>Address</th>
<th>Name</th>
<th>Board type</th>
<th>Digital inputs</th>
<th>Digital outputs</th>
<th>Analogue outputs</th>
<th>Analogue outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>B_OP_SIM</td>
<td>Simulated digital I/O</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>USERIO</td>
<td>Digital I/O</td>
<td>8</td>
<td>8</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

4.2 System functions

4.2.1 Inputs

<table>
<thead>
<tr>
<th>Signal name</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>diPROG_START</td>
<td>Start</td>
</tr>
<tr>
<td>diPROG_STOP</td>
<td>Stop</td>
</tr>
</tbody>
</table>

4.2.2 Outputs

<table>
<thead>
<tr>
<th>Signal name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>doCYCLE</td>
<td>CycleOn</td>
</tr>
<tr>
<td>doMON</td>
<td>MotorOn</td>
</tr>
<tr>
<td>doAUTO</td>
<td>AutoOn</td>
</tr>
</tbody>
</table>
4.3 I/O-Signals configuration for B_OP_SIM

4.3.1 Digital outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>doCYCLE</td>
<td>CycleOn</td>
</tr>
<tr>
<td>11</td>
<td>doAUTO</td>
<td>AutoOn</td>
</tr>
<tr>
<td>12</td>
<td>doMON</td>
<td>MotorOn</td>
</tr>
</tbody>
</table>

4.4 I/O Signals configuration for USERIO

4.4.1 Digital outputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>doPROC1</td>
<td>Operator ready activated on station 1</td>
</tr>
<tr>
<td>1</td>
<td>doPROC2</td>
<td>Operator ready activated on station 2</td>
</tr>
<tr>
<td>2</td>
<td>doPERM_ENTR1</td>
<td>Permit operator ready on station 1</td>
</tr>
<tr>
<td>3</td>
<td>doPERM_ENTR1</td>
<td>Permit operator ready on station 2</td>
</tr>
</tbody>
</table>

4.4.2 Digital inputs

<table>
<thead>
<tr>
<th>Unit Map</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>diPROC1</td>
<td>Operator ready OK on station 1</td>
</tr>
<tr>
<td>1</td>
<td>diPROC2</td>
<td>Operator ready OK on station 2</td>
</tr>
<tr>
<td>2</td>
<td>diPROG_START</td>
<td>Program start</td>
</tr>
<tr>
<td>3</td>
<td>diPROG_STOP</td>
<td>Program stop</td>
</tr>
</tbody>
</table>
5 Safety interface SIB V

About this chapter

This chapter describes the different I/O configurations for standard equipment for safety supervision SIB V, delivered by ABB Technologies AB. These configurations vary depending on which positioner you have:

- For positioners B, C, D, K or R, see “Positioner B/C/D/K/R” on page 62.
- For positioner C Index, see “Positioner C Index” on page 71.
- For positioners A, L or S, see “Positioner A/L/S” on page 75.
5.1 Positioner B/C/D/K/R

5.1.1 I/O board Configuration SIB V

<table>
<thead>
<tr>
<th>Address</th>
<th>Name</th>
<th>Board type</th>
<th>Digital inputs</th>
<th>Digital outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>SIB_V_B1</td>
<td>Safety Interface Board Type 1</td>
<td>56</td>
<td>-</td>
</tr>
<tr>
<td>9*</td>
<td>SIB_V_B1</td>
<td>Safety Interface Board Type 1</td>
<td>56</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>SIB_V_B2</td>
<td>Safety Interface Board Type 2</td>
<td>56</td>
<td>-</td>
</tr>
<tr>
<td>9*</td>
<td>SIB_V_B2</td>
<td>Safety Interface Board Type 2</td>
<td>56</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>SIB_V_B3</td>
<td>Safety Interface Board Type 3</td>
<td>56</td>
<td>-</td>
</tr>
<tr>
<td>9*</td>
<td>SIB_V_B3</td>
<td>Safety Interface Board Type 3</td>
<td>56</td>
<td>-</td>
</tr>
</tbody>
</table>

*) 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

![Diagram of a robot welding station with one positioner IRBP 250K and one positioner IRBP 250L]

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

<table>
<thead>
<tr>
<th>Pos</th>
<th>Description</th>
<th>Pos</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Robot</td>
<td>3</td>
<td>IRBP 250L</td>
</tr>
<tr>
<td>2</td>
<td>Travel track</td>
<td>4</td>
<td>IRBP 250K</td>
</tr>
</tbody>
</table>
### 5.1.2 I/O-signal configuration for SIB_V_B1

#### 5.1.2.1 Digital inputs

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

---

**Figure 21. Unit for safety supervision SIB_V_B1**
5.1.2.2 Digital inputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>TB1:1</td>
<td>diGSTOP_CHA</td>
<td>Run chain GS2+</td>
<td>Panel board</td>
</tr>
<tr>
<td>17</td>
<td>TB1:5</td>
<td>diGSTOP_CHB</td>
<td>Run chain GS1-</td>
<td>Panel board</td>
</tr>
<tr>
<td>24</td>
<td>TB111:10, TB31:2</td>
<td>diRL201</td>
<td>Channel 1 active</td>
<td>Safety switch service door</td>
</tr>
<tr>
<td>25</td>
<td>TB111:8, TB31:4</td>
<td>diRL202</td>
<td>Channel 2 active</td>
<td>Safety switch service door</td>
</tr>
<tr>
<td>26</td>
<td>TB111:11, TB31:5</td>
<td>diRL203</td>
<td>Reset/control of function safety circuits</td>
<td>Safety switch service door</td>
</tr>
<tr>
<td>27</td>
<td>TB111:13, TB31:6</td>
<td>diRL204</td>
<td>Activate safety circuits service door</td>
<td>Pushbutton service door</td>
</tr>
</tbody>
</table>

5.1.2.3 Configuration cross-connections

![Cross-connections diagram](image)

Figure 22. Cross-connections for unit for safety supervision SIB_V_typ 1
5.2 Positioner C Index

5.2.1 I/O board Configuration SIB V

<table>
<thead>
<tr>
<th>Address</th>
<th>Name</th>
<th>Board type</th>
<th>Digital inputs</th>
<th>Digital outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>SIB_V_B1</td>
<td>Safety Interface Board Type 1</td>
<td>56</td>
<td>-</td>
</tr>
<tr>
<td>9*</td>
<td>SIB_V_B1</td>
<td>Safety Interface Board Type 1</td>
<td>56</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>SIB_V_B2</td>
<td>Safety Interface Board Type 2</td>
<td>56</td>
<td>-</td>
</tr>
<tr>
<td>9*</td>
<td>SIB_V_B2</td>
<td>Safety Interface Board Type 2</td>
<td>56</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>SIB_V_B3</td>
<td>Safety Interface Board Type 3</td>
<td>56</td>
<td>-</td>
</tr>
<tr>
<td>9*</td>
<td>SIB_V_B3</td>
<td>Safety Interface Board Type 3</td>
<td>56</td>
<td>-</td>
</tr>
</tbody>
</table>

*) 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

![Diagram of a robot welding station with one positioner IRBP 250K and one positioner IRBP 250L](image)

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

<table>
<thead>
<tr>
<th>Pos</th>
<th>Description</th>
<th>Pos</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Robot</td>
<td>3</td>
<td>IRBP 250L</td>
</tr>
<tr>
<td>2</td>
<td>Travel track</td>
<td>4</td>
<td>IRBP 250K</td>
</tr>
</tbody>
</table>
## 5.2.2 I/O-signal configuration for SIB_V_B2

![Unit for safety supervision SIB_V_B2](image)

### 5.2.2.1 Digital inputs

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

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>TB2:13</td>
<td>diRL151</td>
<td>Indication station 2 at robot</td>
<td>Station interchange</td>
</tr>
<tr>
<td>12</td>
<td>TB2:14</td>
<td>diRL153</td>
<td>Indication station 2 at robot (inverted signal)</td>
<td>Station interchange</td>
</tr>
<tr>
<td>13</td>
<td>TB2:15</td>
<td>diRL16</td>
<td>Indication station 4 at robot</td>
<td>Station interchange</td>
</tr>
<tr>
<td>14</td>
<td>TB2:16</td>
<td>diRL163</td>
<td>Indication station 4 at robot (inverted signal)</td>
<td>Station interchange</td>
</tr>
<tr>
<td>16</td>
<td>TB1:1</td>
<td>diGSTOP_CHA</td>
<td>Run chain GS2+</td>
<td>Panel board</td>
</tr>
<tr>
<td>17</td>
<td>TB1:5</td>
<td>diGSTOP_CHB</td>
<td>Run chain GS1-</td>
<td>Panel board</td>
</tr>
<tr>
<td>24</td>
<td>TB111:10,</td>
<td>diRL201</td>
<td>Channel 1 active</td>
<td>Safety switch service door</td>
</tr>
<tr>
<td></td>
<td>TB31:2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>TB111:8,</td>
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<td>TB31:4</td>
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<td></td>
</tr>
<tr>
<td>26</td>
<td>TB111:11,</td>
<td>diRL203</td>
<td>Reset/control of function safety circuits</td>
<td>Safety switch service door</td>
</tr>
<tr>
<td></td>
<td>TB31:5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>TB111:13,</td>
<td>diRL204</td>
<td>Activate safety circuits service door</td>
<td>Pushbutton service door</td>
</tr>
<tr>
<td></td>
<td>TB31:6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 5.2.2.3 Configuration cross-connections

![Cross-connections for unit for safety supervision SIB_V_typ 2](image)

*Figure 25. Cross-connections for unit for safety supervision SIB_V_typ 2*
5.3 Positioner A/L/S

5.3.1 I/O board Configuration SIB V

<table>
<thead>
<tr>
<th>Address</th>
<th>Name</th>
<th>Board type</th>
<th>Digital inputs</th>
<th>Digital outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>SIB_V_B1</td>
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<td>9*</td>
<td>SIB_V_B1</td>
<td>Safety Interface Board Type 1</td>
<td>56</td>
<td>-</td>
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<tr>
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<td>SIB_V_B2</td>
<td>Safety Interface Board Type 2</td>
<td>56</td>
<td>-</td>
</tr>
<tr>
<td>9*</td>
<td>SIB_V_B2</td>
<td>Safety Interface Board Type 2</td>
<td>56</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>SIB_V_B3</td>
<td>Safety Interface Board Type 3</td>
<td>56</td>
<td>-</td>
</tr>
<tr>
<td>9*</td>
<td>SIB_V_B3</td>
<td>Safety Interface Board Type 3</td>
<td>56</td>
<td>-</td>
</tr>
</tbody>
</table>

*) 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

![Diagram](image)

_Figur 26  Robot welding station with one positioner IRBP 250K and one positioner IRBP 250L_

<table>
<thead>
<tr>
<th>Pos</th>
<th>Description</th>
<th>Pos</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Robot</td>
<td>3</td>
<td>IRBP 250L</td>
</tr>
<tr>
<td>2</td>
<td>Travel track</td>
<td>4</td>
<td>IRBP 250K</td>
</tr>
</tbody>
</table>
### 5.3.2 I/O-signal configuration for SIB_V_B3

#### 5.3.2.1 Digital inputs

<table>
<thead>
<tr>
<th>UnitMap</th>
<th>Connection</th>
<th>Name</th>
<th>Description</th>
<th>Connected to unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>TB1:8</td>
<td>diASTOP_CHA</td>
<td>Run chain AS1-</td>
<td>Panel board/safety switch service door</td>
</tr>
<tr>
<td>1</td>
<td>TB1:4</td>
<td>diASTOP_CHB</td>
<td>Run chain AS2+</td>
<td>Panel board/safety switch service door</td>
</tr>
<tr>
<td>2</td>
<td>TB31:2,TB31:15</td>
<td>diRL1</td>
<td>Channel 1 active</td>
<td>Entrance protection area 1</td>
</tr>
<tr>
<td>3</td>
<td>TB31:1,TB31:16</td>
<td>diRL2</td>
<td>Channel 2 active</td>
<td>Entrance protection area 1</td>
</tr>
<tr>
<td>4</td>
<td>TB31:9</td>
<td>diRL3</td>
<td>Reset/control of function safety circuits</td>
<td>Entrance protection area 1</td>
</tr>
<tr>
<td>5</td>
<td>TB33:14</td>
<td>diRL11</td>
<td>Channel 1 active</td>
<td>Station indikation switch robot in area 2</td>
</tr>
<tr>
<td>6</td>
<td>TB33:15</td>
<td>diRL12</td>
<td>Channel 2 active</td>
<td>Station indikation switch robot in area 2</td>
</tr>
<tr>
<td>7</td>
<td>diRL15</td>
<td>Reset/control of function safety circuits</td>
<td>Safety relays robot in area 2</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>TB33:12</td>
<td>diRL9</td>
<td>Channel 1 active</td>
<td>Station indikation switch robot in area 1</td>
</tr>
<tr>
<td>10</td>
<td>TB33:13</td>
<td>diRL10</td>
<td>Channel 2 active</td>
<td>Station indikation switch robot in area 1</td>
</tr>
<tr>
<td>UnitMap</td>
<td>Connection</td>
<td>Name</td>
<td>Description</td>
<td>Connected to unit</td>
</tr>
<tr>
<td>---------</td>
<td>------------</td>
<td>----------</td>
<td>-------------------------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>diRL14</td>
<td>Reset/control of function safety circuits</td>
<td>Safety relays robot in area 1</td>
</tr>
<tr>
<td>12</td>
<td>TB4:4,</td>
<td>diRL4</td>
<td>Activate entrance protection area 1</td>
<td>Op-panel</td>
</tr>
<tr>
<td>13</td>
<td>TB4:1,</td>
<td>diRL5</td>
<td>Activate entrance protection area 2</td>
<td>Op-panel</td>
</tr>
<tr>
<td>14</td>
<td>TB32:9,</td>
<td>diRL6</td>
<td>Reset/control of function safety circuits</td>
<td>Entrance protection area 2</td>
</tr>
<tr>
<td>16</td>
<td>TB32:1,</td>
<td>diRL7</td>
<td>Channel 1 active</td>
<td>Entrance protection area 2</td>
</tr>
<tr>
<td>17</td>
<td>TB32:2,</td>
<td>diRL8</td>
<td>Channel 2 active</td>
<td>Entrance protection area 2</td>
</tr>
<tr>
<td>18</td>
<td>TB2:4, TB34:15</td>
<td>diGSTOP_CHA_1</td>
<td>Run chain GS2+ area1</td>
<td>Panel board</td>
</tr>
<tr>
<td>19</td>
<td>TB1:1, TB34:3</td>
<td>diGSTOP_CHA_2</td>
<td>Run chain GS2+ area2</td>
<td>Panel board</td>
</tr>
<tr>
<td>20</td>
<td>TB2:8, TB34:11</td>
<td>diGSTOP_CHB_1</td>
<td>Run chain GS1- area 1</td>
<td>Panel board</td>
</tr>
<tr>
<td>21</td>
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<td>diGSTOP_CHB_2</td>
<td>Run chain GS1- area 2</td>
<td>Panel board</td>
</tr>
<tr>
<td>24</td>
<td>TB111:10, TB33:2</td>
<td>diRL201</td>
<td>Channel 1 active</td>
<td>Safety switch service door</td>
</tr>
<tr>
<td>25</td>
<td>TB111:8, TB33:4</td>
<td>diRL202</td>
<td>Channel 2 active</td>
<td>Safety switch service door</td>
</tr>
<tr>
<td>26</td>
<td>TB111:11, TB33:5</td>
<td>diRL203</td>
<td>Reset/control of function safety circuits</td>
<td>Safety switch service door</td>
</tr>
<tr>
<td>27</td>
<td>TB111:13, TB33:6</td>
<td>diRL204</td>
<td>Activate safety circuits service door</td>
<td>Pushbutton service door</td>
</tr>
<tr>
<td>32</td>
<td>TB112:10, TB33:8</td>
<td>diRL401</td>
<td>Channel 1 active</td>
<td>Home position switch</td>
</tr>
<tr>
<td>33</td>
<td>TB112:8, TB33:9</td>
<td>diRL402</td>
<td>Channel 2 active</td>
<td>Home position switch</td>
</tr>
<tr>
<td>34</td>
<td>TB112:11*, TB112:12*</td>
<td>diRL403</td>
<td>Reset/control of function safety circuits</td>
<td>Home position switch</td>
</tr>
</tbody>
</table>
5.3.2.2 Configuration cross-connections

![Cross-connections diagram]

*Figure 28. Cross-connections for unit for safety supervision SIB_V_typ 3*