Motor Protection
Coordination tables for motor starting and protection.

Selectivity
Selectivity coordination tables between short circuit protection devices.

Back-Up
Back-up coordination tables between short-circuit protection devices.

Other devices protection
Coordination table for the protection of switch-disconnector and other devices by short circuit protection devices.

Selected Optimized Coordination
Quick start guide
Introduction

- **Selected Optimized Coordination** is a web tool for the selection of ABB products to be used in the following applications:
  - Motor starting and protection
  - Selectivity between protection devices
  - Back-up protection
  - Other devices protection
In order to guarantee the best performance and the longest lifetime, devices involved into the applications mentioned above (short-circuit protection devices, contactors, overload relays, softstarters, …) need to be coordinated.

The coordination among devices cannot be determined directly: tests in power laboratories shall be carried out to qualify the coordination type at low fault and high fault currents, according to IEC or UL standards.

ABB coordination tables are the results of such tests and represent the ABB offerings in terms of motor starting and protection, selectivity, back-up and switch-disconnector protection.
Introduction

- In *Selected Optimized Coordination* all available ABB coordination tables are stored and easily accessible.
- The following pages will guide you on the main tasks and user interactions.
- **Selected Optimized Coordination** is available on [www.abb.com/lowvoltage](http://www.abb.com/lowvoltage) (in the "Support" menu select "Online Product Selection Tools“, then select “Coordination Tables”) or at the following permanent link: [http://applications.it.abb.com/SOC](http://applications.it.abb.com/SOC)
Motor protection

- The following filters are available:
  - Type of protection device
  - Rated voltage
  - Short circuit current
  - Starter type
  - Coordination type
  - Overload relay
  - Motor rated power

Selectivity, Back-up, Other devices protection

- The following general filters are available:
  - Phase to phase Voltage
  - Target short-circuit value

- The following upstream/downstream filters are available:
  - Technology
  - Product Range
  - Series
  - Nominal Current
User interface

- It is possible to select more than one filter at the same time: click on one option to select, click again to deselect.

<table>
<thead>
<tr>
<th>Protection Device</th>
<th>Rated Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>All</td>
</tr>
<tr>
<td>ACB</td>
<td>240 Vac</td>
</tr>
<tr>
<td>Fuses</td>
<td>400 Vac</td>
</tr>
<tr>
<td>MCCB</td>
<td>415 Vac</td>
</tr>
<tr>
<td>MMS</td>
<td>440 Vac</td>
</tr>
<tr>
<td></td>
<td>460 Vac</td>
</tr>
<tr>
<td></td>
<td>480 Vac</td>
</tr>
<tr>
<td></td>
<td>500 Vac</td>
</tr>
<tr>
<td></td>
<td>525 Vac</td>
</tr>
<tr>
<td></td>
<td>600 Vac</td>
</tr>
</tbody>
</table>

Upstream

- Technologies:
  - ACB
  - Fuse
  - MCB
  - MCCB

- Product Ranges:
  - System Pro M
  - System Pro M compact
  - System Pro M HP

Downstream

- Technologies:
  - ACB
  - Fuse
  - MCB
  - MCCB

- Product Ranges:
  - System Pro M
  - System Pro M compact
  - System Pro M HP
User interface

- “Clear selection” will remove all filters and clear the results.

- When “Show newest ABB products only” is enabled, the latest ABB products available are shown. Uncheck it if you wish to access to older product ranges.
User interface
Motor protection

- If a search does not produce any result, “Smart Search” will be automatically activated and the closest tables matching the search criteria are shown.

- It’s possible to choose the number of tables shown in a page by selecting “Number of Records to show”.

ACB. 415 Vac, 42 kA, DOL-NS, Coordination Type IEC Type 2, Overload Relay Embedded

<table>
<thead>
<tr>
<th>Motor</th>
<th>SACE Emax Circuit Breaker</th>
</tr>
</thead>
</table>

The closest tables matching your search are shown (Current and Voltage Smart Search is on).

Number of Records to show: 20
User interface

Motor protection

- Results are shown in the bottom part of the page.
- Click on “>>” on the rightmost part of each record, to view the whole coordination table.
User interface
Motor protection

- Single coordination tables can be printed or saved as PDF files.

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Table name: MCCB - 400Vac - 100kA - DOL-NS - IEC Type 2 - Tmax + A + TOL

<table>
<thead>
<tr>
<th>Rate</th>
<th>Rated Current</th>
<th>Type</th>
<th>Inst. Trip. Current</th>
<th>Type</th>
<th>Type</th>
<th>Current range</th>
<th>Max allowed load current</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.37</td>
<td>1.10</td>
<td>T4L250 PR221-I In100</td>
<td>100.00</td>
<td>A95</td>
<td>UMC22</td>
<td>0.24 - 63.00</td>
<td>63.00</td>
</tr>
<tr>
<td>0.55</td>
<td>1.50</td>
<td>T4L250 PR221-I In100</td>
<td>100.00</td>
<td>A95</td>
<td>UMC22</td>
<td>0.24 - 63.00</td>
<td>63.00</td>
</tr>
<tr>
<td>0.75</td>
<td>1.90</td>
<td>T4L250 PR221-I In100</td>
<td>100.00</td>
<td>A95</td>
<td>UMC22</td>
<td>0.24 - 63.00</td>
<td>63.00</td>
</tr>
<tr>
<td>1.10</td>
<td>2.70</td>
<td>T4L250 PR221-I In100</td>
<td>100.00</td>
<td>A95</td>
<td>UMC22</td>
<td>0.24 - 63.00</td>
<td>63.00</td>
</tr>
<tr>
<td>1.50</td>
<td>3.60</td>
<td>T4L250 PR221-I In100</td>
<td>100.00</td>
<td>A95</td>
<td>UMC22</td>
<td>0.24 - 63.00</td>
<td>63.00</td>
</tr>
</tbody>
</table>
User interface
Motor protection

- “PDF Book” allows to create a pdf files containing more than one coordination table:
  - Make you selections and click on “PDF Book”
  - The creation of the book will start in background. A drop-down notice will appear, showing the status of the job

Coordination tables for motor protection

- When the job is completed, click on “Download”
- Alternatively, insert an email address: the book will be sent at the address as soon as available
Example: if you are looking for products for motor protection, where a MCCB or a fuse is used as main short circuit protection device, in a plant where the rated voltage is 400Vac and the required short-circuit current level is 80 kA:

- Use the following filters

<table>
<thead>
<tr>
<th>Protection Device</th>
<th>Rated Voltage</th>
<th>Short-Circuit Current [kA]</th>
<th>Starter Type</th>
<th>Coordination Type</th>
<th>Overload Relay</th>
<th>Motor Rated Power [kW]/[HP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACB</td>
<td>240Vac</td>
<td>50</td>
<td>DOL-NS</td>
<td>IEC Type 1</td>
<td>Embedded</td>
<td>0.06</td>
</tr>
<tr>
<td></td>
<td>400Vac</td>
<td>55</td>
<td>DOL-HD</td>
<td>IEC Type 2</td>
<td>TOL</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>415Vac</td>
<td>60</td>
<td>SD-NS</td>
<td>UL Type A</td>
<td>EOL</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>440Vac</td>
<td>65</td>
<td>8S-NS-IL</td>
<td>UL Type C</td>
<td>UMC</td>
<td>0.18</td>
</tr>
<tr>
<td></td>
<td>460Vac</td>
<td>70</td>
<td>8S-NS-ID</td>
<td>UL Type D</td>
<td></td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td>480Vac</td>
<td>75</td>
<td>UL</td>
<td>UL Type E</td>
<td></td>
<td>0.37</td>
</tr>
<tr>
<td></td>
<td>500Vac</td>
<td>80</td>
<td></td>
<td>UL Type F</td>
<td></td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>525Vac</td>
<td>85</td>
<td></td>
<td>UL Component</td>
<td></td>
<td>0.56</td>
</tr>
<tr>
<td></td>
<td>600Vac</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td>0.76</td>
</tr>
<tr>
<td></td>
<td></td>
<td>200</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Scroll down to see the results
Example: if you are looking for products for motor protection, where a MCCB or a fuse is used as main short circuit protection device, in a plant where the rated voltage is 400Vac and the required short-circuit current level is 80 kA:

- Click on >> to see the complete table

You may further refine your search by adding more filters…
User interface
Selectivity, Back-up and Other devices protection

- Make your selection and click on “Search”
- If more than one table is available, you can browse through them from the “Results” section
User interface
Selectivity, back-up and switch protection

- Coordination tables can be exported in a PDF file.

Notes
1 Value valid only with S800N/S with characteristics B or C

Attachments
Print Pdf
### User interface

**Selectivity, Back-up and Other devices protection**

- Example: if you are looking for a selectivity table involving MCCB or MCB-RCB, with a downstream device up to 80A, in a plant with rated voltage 400V, and the target selectivity (short-circuit) value is 4 kA or more:

  - Use the following filters

<table>
<thead>
<tr>
<th>Upstream</th>
<th>Downstream</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technologies:</strong></td>
<td><strong>Technologies:</strong></td>
</tr>
<tr>
<td>MCCB</td>
<td>MCCB</td>
</tr>
<tr>
<td>MCB-RCB</td>
<td>MCB-RCB</td>
</tr>
<tr>
<td><strong>Product Ranges:</strong></td>
<td><strong>Product Ranges:</strong></td>
</tr>
<tr>
<td>Formula</td>
<td>hide</td>
</tr>
<tr>
<td>Isomax</td>
<td>RCBO</td>
</tr>
<tr>
<td>Selective Main CB</td>
<td></td>
</tr>
<tr>
<td><strong>Series:</strong></td>
<td><strong>Series:</strong></td>
</tr>
<tr>
<td>A1</td>
<td>A1</td>
</tr>
<tr>
<td>A2</td>
<td>A2</td>
</tr>
<tr>
<td>A3</td>
<td>A3</td>
</tr>
<tr>
<td>DS201</td>
<td>DS201</td>
</tr>
<tr>
<td><strong>Current:</strong></td>
<td><strong>Current:</strong></td>
</tr>
<tr>
<td>Select nominal current...</td>
<td>80</td>
</tr>
</tbody>
</table>

- Scroll down to find the results, sorted by technology types
Example: if you are looking for a selectivity table involving MCCB or MCB-RCB, with a downstream device up to 80A, in a plant with rated voltage 400V, and the target selectivity (short-circuit) value is 4 kA or more:

- The first table is shown. By clicking on the other links you can access more tables

- You may further refine your search by adding other filters…
User interface
Selectivity, Back-up and Other devices protection

- Example: if you are looking for a selectivity table involving MCCB or MCB-RCB, with a downstream device up to 80A, in a plant with rated voltage 400V, and the target selectivity (short-circuit) value is 4 kA or more:

  - Table visualization
  - Find the values and the eventual notes and attachments
  - Printing PDF command is at the end of the page
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