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How Selective Coordination Feature Work in PTW

The Selective Coordination Feature in PTW allow users to pick selectively coordinated breakers for the upstream or downstream device from a list based on the manufacturer selectivity data.

For the feature to work, it is critical that the selective coordination *.dat files are in the same directory as the reference library of the project (by default it is found in C:\PTW32\Lib). Go to Project->Options->Library to verify the location of the reference library (eg. C:\PTW32\Lib) See below for the list of selective coordination files:

Name	Size	Туре 🔺
🐻 SelCoor_CutlerHammerB.dat	1,551,129 KB	DAT File
🚾 SelCoor_CutlerHammerHeaderB.dat	5,477 KB	DAT File
🚾 SelCoor_CutlerHammerLibB.dat	2,580 KB	DAT File
🐻 SelCoor_GEB.dat	4,640 KB	DAT File
🚾 SelCoor_GEHeaderB.dat	367 KB	DAT File
🐻 SelCoor_GELibB.dat	72 KB	DAT File
🚾 SelCoor_SQDB1.dat	58,810 KB	DAT File
🚾 SelCoor_SQDB2.dat	11,669 KB	DAT File
🚾 SelCoor_SQDHeaderB1.dat	1,758 KB	DAT File
🚾 SelCoor_SQDHeaderB2.dat	346 KB	DAT File
🖬 SelCoor_SQDLibB1.dat	217 KB	DAT File
SelCoor_SQDLibB2.dat	77 KB	DAT File

Using a simple circuit below showing the upstream breaker PD-0001 and the downstream breaker PD-0002, the upstream breaker will be used as reference to find a selectively coordinated downstream breaker.

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In this example, the upstream breaker (PD-0001) is a 70A, Square D, type QB breaker rated at 240V. To find a selectively coordinated downstream breaker, go to the Component Editor of the breaker (PD-0002) and click on the Selective Coordination button under the Settings subview. (Note: the selective coordination button is also found in Captor TCC under the Settings tab).

🔝 Component Editor ,	Scenario[Base Project]
Component Subviews:	
Protective Device Settings Henabury Data User-Defined Fields Datablock	Erame:
Scenario Manager Go To V Jump C PD0002	Settings Segment Setting1 Setting2 1 Setting1 Setting2 2 Segment Setting1 Setting2 3 Setting1 Setting2 4 Setting1 Setting2 5 Setting2 Setting1 Setting2 5 Setting2 Setting1 Setting2 5 Setting2 Setting2 5 Setting2
	Library Eunction Toggle Phase Notes
	Insert Segm Delete Segm Selective Coordination
Expand Shrink	

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In the Selective Coordination Window shown below, refer to the following steps to find a coordinated breaker:

Selective Coordination Selected Device PD-0002 is the Downstream Device PD-0002 is the Upstream Device	1. Device to search for
Selectively Coordinated Device Display Options C All in the Current TCC All in the Associated One-line All in the Project	2. Reference Device Select the Upstream Device as Reference: PD-0001
PD-0002 Frame Selection Options Bus 240 Volts Fault	Search Criteria 200 kA Report Search Results
Frame Voltage Frame Amps C >= 240 Volts C = 0 Frame Am C >= 480.0 ∨ C >= 0 Design / C = 480.0 ∨ C >= 15.0 C Show All C Show All C Show All C Show All	nps C >= 200 kA C >= C >= Amps C >= 200.000 kA C >= A C >= 200.000 kA C >= C >= Show All C Show All
Selectively Coordinated Device and Frames:	_Up_0100DB0501 ← 4. Search Results
Search All Search by Cr	riteria OK Cancel Help

- 1. Choose whether the breaker being searched for (PD-0002) is upstream or downstream. Although, the program will automatically detect its connection in reference to the bus it is connected to and selects the appropriate location, it is a good practice to verify its location.
- 2. Select the reference device in which the breaker (PD-0002) will selectively coordinate from. Since the breaker being searched for is a downstream device, the reference device will be the upstream breaker (PD-0001). If the drop down list does not display the reference breaker you are looking for, click on "All in the Associated One-line" or "All in the Project" to expand the list.
- 3. Define the search criteria for the breaker ratings you are searching for. The criteria includes voltage, current, interrupting rating, and tested kAIC. A "Show All" option is available to expand the search without a specific criteria.
- 4. Once the search criteria is set, click on the "Search by Criteria" button to generate a list of coordinated breakers. A "Search All" button is also available to bypass the defined search

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criteria and show all the coordinated breakers in the selectivity data from the reference device. The user will be prompted by a similar message below once the search is complete.



Click on the drop-down list and select the desired breaker frame to use. In this example, we will select the breaker frame shown below.

elective Coordination	
Selected Device PD-0002 is the Downstream Device PD-0002 is the Upstream Device	
Selectively Coordinated Device Display Options All in the Current TCC All in the Associated One-line PD-0001 All in the Project	Upstream Device as Reference:
PD-0002 Frame Selection Options	
Bus 240 Volts Fault 200 kA Frame Voltage Frame Amps C = 0 Frame Amps C >= 240 Volts C >= 0 Frame Amps C >= 0 Design Amps C = 480.0 V C >= 15.0 A C Show All	□ Report Search Results □ Frame Interrupting Rating □ >= 200 kA □ >= 200.000 kA □ □ Show All
Selectively Coordinated Device and Frames: _Up_0100D	>B0501 ←
II Q0, 2-Pole 15-125A Frame 240V Q0 30A 10kA SelCoor L Q0, 2-Pole 15-125A Frame 240V Q0 35A 10kA SelCoor L Q0, 2-Pole 15-125A Frame 240V Q0 40A 10kA SelCoor L Q0, 2-Pole 15-125A Frame 240V Q0 40A 10kA SelCoor L Q0, 2-Pole 15-125A Frame 240V Q0 50A 10kA SelCoor L Q0, 2-Pole 15-125A Frame 240V Q0 50A 10kA SelCoor L Q0, 2-Pole 15-125A Frame 240V Q0 50A 10kA SelCoor L Q0, 2-Pole 15-125A Frame 240V Q0 15A 10kA SelCoor L Q0, 3-Pole 15-100A Frame 240V Q0 15A 10kA SelCoor L Q0, 3-Pole 15-100A Frame 240V Q0 30A 10kA SelCoor L Q0, 3-Pole 15-100A Frame 240V Q0 35A 10kA SelCoor L Q0, 3-Pole 15-100A Frame 240V Q0 35A 10kA SelCoor L Q0, 3-Pole 15-100A Frame 240V Q0 35A 10kA SelCoor L </td <td>Jp Tα: 2kA ▲ Jp Tα: 2kA ↓ Jp Tα: 2kA ↓</td>	Jp Tα: 2kA ▲ Jp Tα: 2kA ↓ Jp Tα: 2kA ↓

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The coordinated breaker is now set. The TCC plot below shows the coordination between the upstream and downstream breaker.





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Additional Notes:

If one tries to change the frame selection or change the breaker library model of the coordination pair, the user will receive a warning prompt below.

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?	Selecting another device, or a different frame/sensor/trip/plug, will invalidate the selective coordination pair. Would you like to continue?
	Yes No

There are instances when the reference breaker does not have selective coordination data in the library and the user will be prompted with the appropriate message.

To verify whether the reference breaker has selective coordination data, go to the library of the reference breaker and check the "SelCoor Notes" column. If it is blank, there is no selective coordination data available for this breaker. If there is one existing, it will show the SelCoor Notes description. The description will be marked with Up, Down, or Up/Down pre-fixes. These markers indicate whether the breaker can be used as the upstream device, downstream device, or both.

C:\PTW32\LIB\PTW.LIB							
	All Search	Manufacturer: KAII Ma	nufacturers> 💌 Type:	Desc:	TCC#:	Amps Rating:	▼ Isc kA: <
Low Voltage Breakers	Manufacturer	Туре	Description	Voltage	TCC No.	Catalog No.	SelCoor Notes 🛛 🗖
Static Trip Ground Fault) SQUARE D	Q2H	100-225A	240	734-1,2,3	Q2L2H	
Thermal Magnetic Molded Case) SQUARE D	Q2L-H	100-225A	240	734-1,2,3	Q2LH2	
> Power Circuit	SQUARE D	Q4	250-400A	240	735-1	Q4L	
• (M) Motor/Gen/Xfmr Protection	SQUARE D	QB	70-250A	240	734-4,5,6,7,8,9,10	QB_2_	_Up_0100DB0501
) SQUARE D	QD	70-250A	240	734-4,5,6,7,8,9,10	QD_2_	_Up/Down_0100DE
) SQUARE D	QE-VH	70-200A	240	737-1,2,3,4	QEHV	
HV/MV Breakers) SQUARE D	QG	70-250A	240	734-4,5,6,7,8,9,10	QG_2_	_Up/Down_0100DE
	SQUARE D	QJ	70-250A	208	734-4,5,6,7,8,9,10	QJ_2_	_Up/Down_0100DE

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Not all breaker frames will have selective coordination data. Thus, check the library under the "Up/Down SelCoor" and "Down/Up SelCoor" whether the selected frame has data similar to the one shown below.

🎢 C:\PTW32\LIB\PTW.LIB : SQUARE D, QB, 70-250A - Thermal Magnetic Molded Case							
Device Frame Trip Plug Trip Curves A	rc Flash	Up/Dow	n SelCoor	Down/Up SelCoor			
Upstream Device Frame/Sensor/Plug:	Downstream Device Frame/Sensor/			Sensor/Plug Tested:	Notes: _Up_0100DB0501		
08.240V.704.10kA ("Up) UB,240V,804.10kA ("Up) OB.240V.904.10kA ("Up)		lsc kA	Series Rated	Frame	Device		
QB, 240V, 100A, 10kA (*Up)	1	2.00		QO, 240V, 15A, 10kA	QO, 1-Pole15-70A730-2,3,4,5,6		
QB, 240V, 110A, 10kA, ("Up) QB, 240V, 125A, 10kA, ("Up) QB, 240V, 150A, 10kA, ("Up) QB, 240V, 150A, 10kA, ("Up) QB, 240V, 200A, 10kA, ("Up) QB, 240V, 225A, 10kA, ("Up) QB, 240V, 250A, 10kA, ("Up)	2	2.00		QO, 240V, 15A, 10kA	Q0, 2-Pole15-125A730-4,5,6,7,8,9		
	3	2.00		QO, 240V, 15A, 10kA	Q0, 3-Pole15-100A730-4,5,6,7		
	4	2.00		QO, 240V, 20A, 10kA	QO, 1-Pole15-70A730-2,3,4,5,6		
	5	2.00		QO, 240V, 20A, 10kA	Q0, 2-Pole15-125A730-4,5,6,7,8,9		
	6	2.00		QO, 240V, 20A, 10kA	Q0, 3-Pole15-100A730-4,5,6,7		
	7	2.00		QO, 240V, 25A, 10kA	Q0, 1-Pole15-70A730-2,3,4,5,6		
	8	2.00		QO, 240V, 25A, 10kA	Q0, 2-Pole15-125A730-4,5,6,7,8,9		
	9	2.00		QO, 240V, 25A, 10kA	Q0, 3-Pole15-100A730-4,5,6,7		
	10	2.00		QO, 240V, 30A, 10kA	Q0, 1-Pole15-70A730-2,3,4,5,6		
	11	2.00		QO, 240V, 30A, 10kA	Q0, 2-Pole15-125A730-4,5,6,7,8,9		
	12	2.00		QO, 240V, 30A, 10kA	Q0, 3-Pole15-100A730-4,5,6,7		
	13	2.00		QO, 240V, 35A, 10kA	Q0, 1-Pole15-70A730-2,3,4,5,6		
	14	2.00		QO, 240V, 35A, 10kA	Q0, 2-Pole15-125A730-4,5,6,7,8,9		
	15	2.00		QO, 240V, 35A, 10kA	Q0, 3-Pole15-100A730-4,5,6,7		
	40	2.00		00 3404 404 1054	00.10-0-15 704700 0.045 0		
		Select [evice	Select <u>F</u> rame			
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