S&C Fault Fiter® Electronic Power Fuses
Indoor Distribution (4.16 kV through 25 kV)

Series Coordination of **Inverse-Curve-Type** Fault Fiters with Source-Side Solid-State Overcurrent Relays

The selection tables presented in this data bulletin feature minimum pickup currents and time-dial settings for source-side solid-state overcurrent relays which have been selected to provide complete coordination with load-side inverse-curve-type Fault Fiters. The minimum pickup currents and time-dial settings listed in the tables are based on coordinating-time intervals (CTIs), reflecting relay tolerance of 0.15 second for uncalibrated relays and 0.05 second for relays calibrated at the operating current. To check for coordination with Fault Fiters, these CTI values were subtracted from relay operating curves, and the resultant curves were compared to Fault Fiter total clearing curves. See illustration at right.

Important: S&C Fault Fiter Electronic Power Fuse Control Modules must be selected by qualified persons who are knowledgeable in the subjects of equipment protection and time-current coordination, and who understand the consequences of improperly coordinated overcurrent protective devices. Failure to achieve complete coordination between Fault Fiter Electronic Power Fuses and source-side or load-side protective devices may result in improper operation of one or more Fault Fiter Fuses.
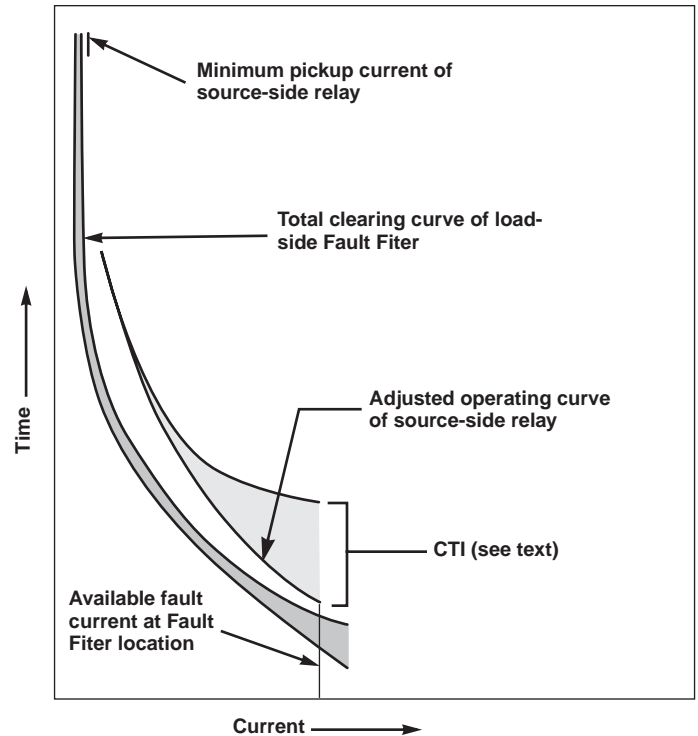
TABLE I—Series Coordination of Inverse-Curve-Type Fault Fiters (TCC No. 410-7) with General Electric Type SFC Solid-State Overcurrent Relays

Control Module Catalog Number	Minimum Pickup Current, Amperes, RMS	Relay Settings																							
		Minimum Time-Dial Setting①																							
Relay Characteristic and Type		Inverse (SFC 151)								Very Inverse (SFC 153)								Extremely Inverse (SFC 177)							
Coordinating-Time Interval (CTI), Seconds		.15				.05				.15				.05				.15				.05			
Available Fault Current, kA, RMS Symmetrical		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40
814040	480	2	2	2	2	1	1	1	1	3	3	3	3	2	2	2	2	—	—	—	—	6	6	6	6
814050	600	2	2	2	2	2	2	1	1	3	3	3	3	2	2	2	2	—	—	—	—	7	6	6	6
814060	720	2	2	2	2	2	2	1	1	3	3	3	3	2	2	2	2	10	—	—	—	7	6	6	6
814070	840	2	2	2	2	2	2	1	1	3	3	3	3	2	2	2	2	9	—	—	—	6	7	6	6
814080	960	2	2	2	2	2	2	2	2	3	3	3	3	2	2	2	2	9	—	—	—	6	7	7	6
814100	1200	2	2	2	2	2	2	2	2	3	3	3	3	2	2	2	2	8	—	—	—	6	7	7	6
814125	1500	2	2	2	2	2	2	2	2	3	3	3	3	2	2	2	2	6	10	—	—	5	7	7	7
814150	1800	2	2	2	2	2	2	2	2	3	3	3	3	2	2	2	2	5	10	—	—	4	7	7	7

① The time-dial setting shown is the lowest setting with which Fault Fiter will coordinate, based on use of the coordinating-time intervals listed in the table.

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Series Coordination of **Inverse-Curve-Type**
Fault Fiters with Source-Side Solid-State
Overcurrent Relays

TABLE II—Series Coordination of Inverse-Curve-Type Fault Fiters (TCC No. 410-7) with Westinghouse Type SCO Solid-State Overcurrent Relays

Control Module Catalog Number	Minimum Pickup Current, Amperes, RMS	Relay Settings																							
		Minimum Time-Dial Setting①																							
Relay Characteristic and Type →		Inverse (SCO-8)								Very Inverse (SCO-9)								Extremely Inverse (SCO-11)							
Coordinating-Time Interval (CTI), Seconds		.15				.05				.15				.05				.15				.05			
Available Fault Current, kA, RMS Symmetrical		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40
814040	480	2	2	2	2	1	1	1	1	2	2	2	2	2	2	1	1	4	5	5	5	3	3	3	3
814050	600	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	1	4	5	5	5	3	3	3	3
814060	720	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	1	3	5	5	5	2	3	3	3
814070	840	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	3	5	5	5	2	3	3	3
814080	960	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	3	5	5	5	2	3	3	3
814100	1200	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	3	4	5	5	2	3	3	3
814125	1500	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2	3	5	5	2	3	3	3
814150	1800	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2	3	4	5	2	2	3	3

① The time-dial setting shown is the lowest setting with which Fault Fiter will coordinate, based on use of the coordinating-time intervals listed in the table.

TABLE III—Series Coordination of Inverse-Curve-Type Fault Fiters (TCC No. 410-7) with Basler Electric Type BE1-51 Solid-State Overcurrent Relays

Control Module Catalog Number	Minimum Pickup Current, Amperes, RMS	Relay Settings																							
		Minimum Time-Dial Setting①																							
Relay Characteristic and Type →		Inverse (BE1-51-B5)								Very Inverse (BE1-51-B6)								Extremely Inverse (BE1-51-B7)							
Coordinating-Time Interval (CTI), Seconds →		.15				.05				.15				.05				.15				.05			
Available Fault Current, kA, RMS Symmetrical →		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40
814040	480	07	05	05	05	03	02	02	02	20	20	10	10	07	05	05	05	20	20	20	20	07	07	07	07
814050	600	07	05	05	05	03	02	02	02	20	20	20	20	07	07	05	05	20	20	20	20	07	07	07	07
814060	720	07	07	05	05	05	03	02	02	20	20	20	20	07	07	05	05	10	20	20	20	07	07	07	07
814070	840	07	07	07	05	05	03	02	02	20	20	20	20	07	07	07	05	10	20	20	20	07	07	07	07
814080	960	07	07	07	07	05	03	03	02	20	20	20	20	10	07	07	05	10	20	20	20	07	07	07	07
814100	1200	07	07	07	07	05	05	03	03	20	20	20	20	10	10	07	07	10	20	20	20	05	07	07	07
814125	1500	07	07	07	07	05	05	03	03	20	20	20	20	10	10	07	07	07	10	20	20	05	07	07	07
814150	1800	07	07	07	07	05	05	05	03	10	20	20	20	07	10	10	07	05	10	20	20	05	07	07	07

① The time-dial setting shown is the lowest setting with which Fault Fiter will coordinate, based on use of the coordinating-time intervals listed in the table.

TABLE IV—Series Coordination of Inverse-Curve-Type Fault Fiters (TCC No. 410-7) with Brown Boveri Corporation Type ITE Solid-State Overcurrent Relays

Control Module Catalog Number	Minimum Pickup Current, Amperes, RMS	Relay Settings																							
		Minimum Time-Dial Setting①																							
Relay Characteristic and Type		Inverse (ITE 51 I)								Very Inverse (ITE 51 Y)								Extremely Inverse (ITE 51 E)							
Coordinating-Time Interval (CTI), Seconds		.15				.05				.15				.05				.15				.05			
Available Fault Current, kA, RMS Symmetrical		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40
814040	480	2	2	2	2	2	2	2	2	3	4	4	4	2	2	2	2	8	10	10	10	5	5	5	5
814050	600	2	2	2	2	2	2	2	2	3	4	4	4	2	3	3	3	8	10	10	10	5	5	5	5
814060	720	2	2	2	2	2	2	2	2	3	4	4	4	2	2	3	3	8	10	10	10	5	5	5	5
814070	840	2	2	2	2	2	2	2	2	3	3	4	4	2	2	3	3	6	8	10	10	5	5	5	5
814080	960	2	2	2	2	2	2	2	2	3	3	4	4	2	2	3	3	6	8	10	10	5	6	6	5
814100	1200	2	2	2	2	2	2	2	2	3	3	4	4	2	2	2	2	5	8	10	10	4	6	6	5
814125	1500	2	2	2	2	2	2	2	2	3	3	3	4	2	2	2	2	4	8	10	10	3	5	6	6
814150	1800	2	2	2	2	2	2	2	2	3	3	3	3	2	2	2	2	4	8	8	10	3	5	6	6

① The time-dial setting shown is the lowest setting with which Fault Fiter will coordinate, based on use of the coordinating-time intervals listed in the table.

TABLE V—Series Coordination of Inverse-Curve-Type Fault Fiters (TCC No. 410-7) with ASEA Type RXIDF 2H Solid-State Overcurrent Relays

Control Module Catalog Number	Minimum Pickup Current, Amperes, RMS	Relay Settings																							
		Minimum Time-Dial Setting①																							
Relay Characteristic		Inverse								Very Inverse								Extremely Inverse							
Coordinating-Time Interval (CTI), Seconds		.15				.05				.15				.05				.15				.05			
Available Fault Current, kA, RMS Symmetrical		10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40	10	20	30	40
814040	480	.2	.2	.2	.2	.2	.2	.2	.2	.4	.6	1	1	.4	.4	.6	.6	—	—	—	—	1	—	—	—
814050	600	.2	.2	.2	.2	.2	.2	.2	.2	.4	.6	.8	1	.2	.4	.6	.6	1	—	—	—	.8	—	—	—
814060	720	.2	.2	.2	.2	.2	.2	.2	.2	.4	.6	.8	.8	.2	.4	.4	.6	.8	—	—	—	.6	—	—	—
814070	840	.2	.2	.2	.2	.2	.2	.2	.2	.4	.6	.6	.8	.2	.4	.4	.4	.6	—	—	—	.4	—	—	—
814080	960	.2	.2	.2	.2	.2	.2	.2	.2	.4	.4	.6	.6	.2	.4	.4	.4	.6	—	—	—	.4	1	—	—
814100	1200	.2	.2	.2	.2	.2	.2	.2	.2	.2	.4	.6	.6	.2	.4	.4	.4	.4	1	—	—	.4	.8	—	—
814125	1500	.2	.2	.2	.2	.2	.2	.2	.2	.2	.4	.4	.6	.2	.2	.4	.4	.4	.8	—	—	.2	.6	1	—
814150	1800	.2	.2	.2	.2	.2	.2	.2	.2	.2	.4	.4	.4	.2	.2	.4	.4	.2	.6	1	—	.2	.4	.8	—

① The time-dial setting shown is the lowest setting with which Fault Fiter will coordinate, based on use of the coordinating-time intervals listed in the table.

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