

Sectionaliser Links – Brochure

Overview

There is growing pressure from both customers and regulators of distribution businesses to improve reliability of supply, particularly in rural areas.

At the same time regulators are looking closely at capital, operation and maintenance spending programs in order to minimize these expenditures so as to ensure electricity network prices are kept under control.

Thus there is a need to have effective low cost solutions for improving network reliability, particularly in rural areas.

Thus the sectionaliser link has grown in popularity.

Over the past 10 years AK Power Solutions has sold sectionaliser links throughout Australia (Ergon Energy, Energex, Country Energy, Energy Australia, Integral Energy, ETSA Utilities, Powercor, Aurora Energy and Western Power) as well as to the following countries;

- Canada
- China
- Iran
- Malaysia
- New Zealand

- Sarawak
- South Africa
- South America
- UK

Application

- The AK Power Solutions sectionaliser link fits into a standard pole mounted single venting fuse holder and therefore the mounting conforms to the standard construction arrangements of many companies.
- 12kV/24kV and 36kV versions are available.
- Sectionaliser links are used in conjunction with an upstream recloser and replace the traditional spur drop out fuse protection.
- As 70% to 90% of faults are transient, the old style spur fuse scheme results in a blown fuse thus causing inconvenience to customers.
- By using sectionaliser links instead of spur drop out fuses, spurious and unnecessary operations are virtually eliminated.
- In addition the risk of fire due to operation of drop out fuses is eliminated.

A detailed technical line drawing of a sectionaliser link assembly. The drawing shows a vertical assembly with multiple horizontal insulators and a central vertical component. The assembly is mounted on a base with various electrical connections and components. The drawing is oriented vertically, with the main assembly running from top to bottom.

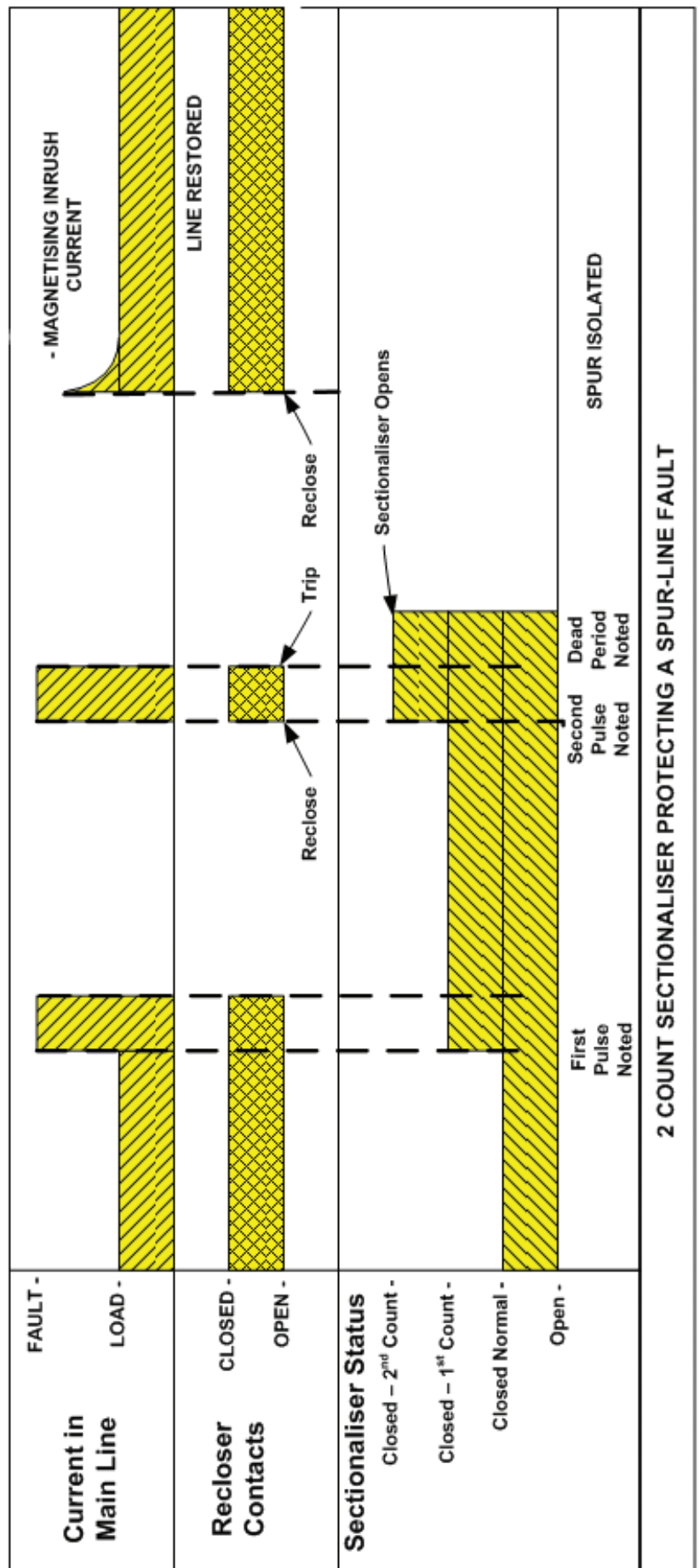
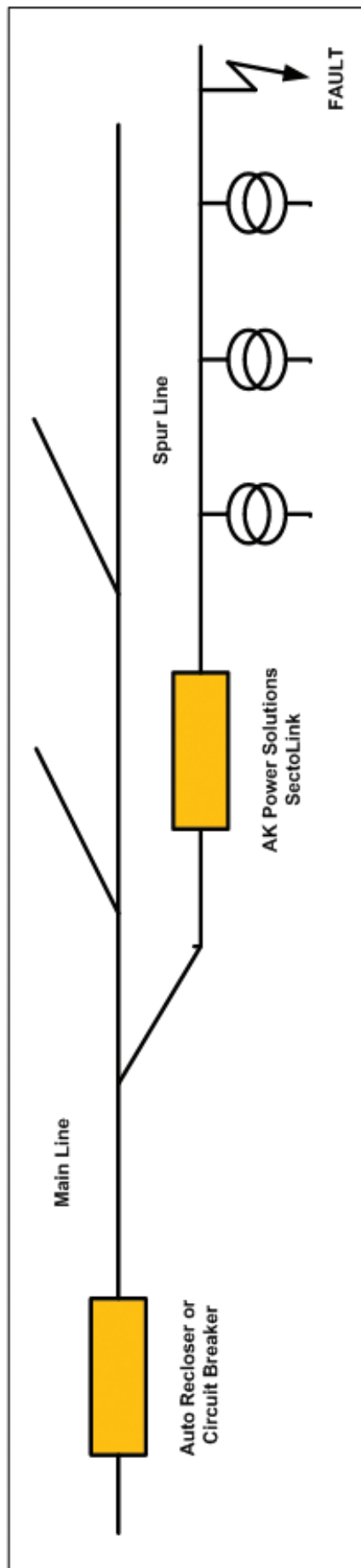
Features

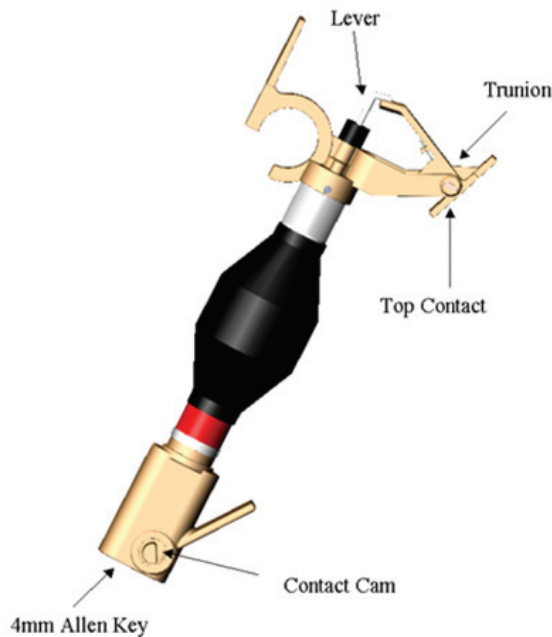
- 12/24kV and 36kV Voltage ratings
- Pick up currents ranging from 5 to 400 amps
- Operates in conjunction with an upstream field recloser with operating counts field settable to 1, 2 or 3 trips.
- Single Wire Earth Return, single phase or three phase configurations
- Fits in any manufacturer's single vented drop-out-fuse mount.
- Self Actuating – no consumable components required

Description of Operation

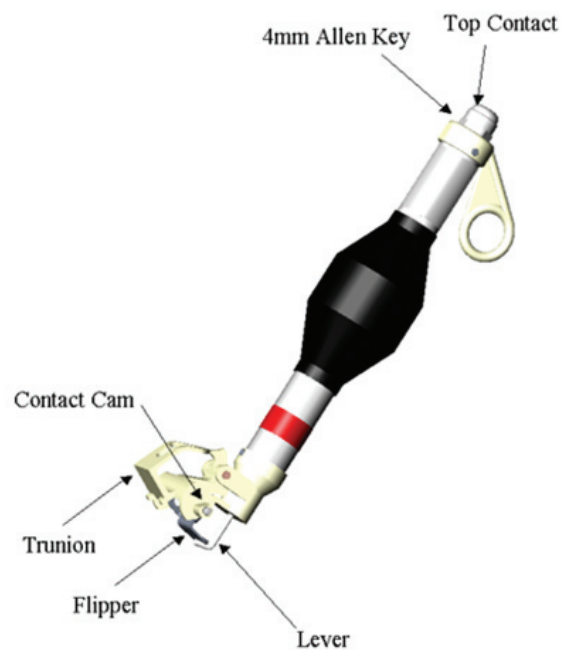
- The current transformers sense the through fault and power a capacitor to provide the energy to activate the tripping solenoid.
- The solenoid activates the tripping of the sectionaliser link in the recloser dead time as a result of a signal from the electronic circuit.

The diagram on the following page indicates the operating sequence of the SectoLink and its co-ordination with the upstream recloser.





Johnson & Phillips Version



Classic Version

Typical Application

- The device looks like a drop out fuse but has current transformers, some clever electronics and a tripping mechanism to ensure that the operation of the sectionaliser is synchronised with the upstream recloser.
- These electronic “brains” of the sectionaliser are housed in cast epoxy resin for protection against the environment
- The CT’s are cast in epoxy resin and then covered in heat shrink material for added protection
- A number of versions are available, depending on the local electricity network needs.

The above diagram indicates two typical versions.

Selecting the Sectionalisher Settings

Using a M4 Allen Key, the two screws that secure the top cap of the Sectionalisher are removed to expose the DIP switches. The dip switch settings allow the Current Settings and number of Counts to be adjusted to suit the application. The table below provides further details.

When the sectionaliser operates the Lever is released unlatching the Flipper and the sectionaliser is then free to ‘Drop-Out’

Resetting the Sectionalisher after Operation:

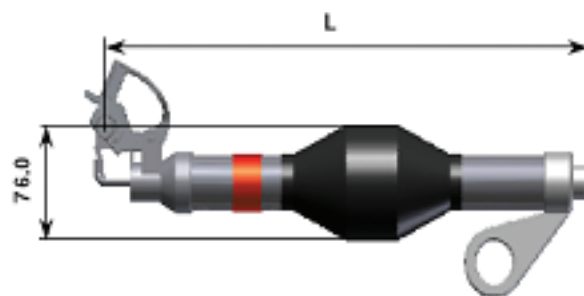
- Push the lever in, make sure it is engaged.
- Rotate the spring loaded flipper and latch it with the Lever.
- The sectionaliser is now ready for operation.

Typical Technical Specifications

- Technical data
- Rated Voltage: 12/24 & 36kV
- Lightning Impulse: 125/150 & 170kV BIL
- Max continuous current rating: 250Amps
- Pick up current rating: 5 to 400 Amps
- Short time current: 2kA/1s or 10kA/1s
- Sensitivity of Pick up Current: $\pm 10\%$
- Programmable Counts: 1, 2 or 3
- Reclaim Time: 25, 30, 120 or 180s or as specified
- Min. fault pulse: $> 110\%$ of pick up current
- Min. duration of fault pulse: 20ms
- Min. recloser dead time: 500ms
- Total operating time: 200ms from Recloser open
- Max. load current prior to operation: 0.3Amps
- Immunity to inrush/surge: 100kApk Asym

Reclaim Time Nomenclature: Default: 30s, A= 180s, B=120s, C=25s

DIMENSION DATA



Rating	L
12/24kV	379mm
36kV	468mm

Note that special models are able to be supplied as required

Ordering Information


See Sectionaliser Selection Table (on following page))

- Rated Voltage: 12/24kV or 36kV
- Lightning Impulse: 125/150kV & 170kV BIL
- Programmable Counts: 1, 2 or 3
- Reclaim Time: 25, 30, 120 or 180s or as specified
- SectoLink™ Classic or “special”
- Any special lengths

Sect No.		01	02	03	04	05	06	07	08	09	10	11	12	13
Position of Switches 1 2 3 4	No of counts													J&P
OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1	8	32	20	40	10	60	100	100	250	24	112	20	40
OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	2	8	32	20	40	10	60	100	100	250	24	112	20	40
OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3	8	32	20	40	10	60	100	100	250	24	112	20	40
OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1	16	40	40	56	12	80	120	150	300	40	160	25	56
OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	2	16	40	40	56	12	80	120	150	300	40	160	25	56
OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3	16	40	40	56	12	80	120	150	300	40	160	25	56
OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1	20	50	50	80	16	100	140	200	350	56	224	30	80
OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	2	20	50	50	80	16	100	140	200	350	56	224	30	80
OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3	20	50	50	80	16	100	140	200	350	56	224	30	80
OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1	24	64	60	112	20	130	160	250	400	64	320	36	112
OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	2	24	64	60	112	20	130	160	250	400	64	320	36	112
OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3	24	64	60	112	20	130	160	250	400	64	320	36	112

Number of count settings

Current Setting. Attention should be paid to the direction of the "ON" position.

 Indicates the default factory settings. Standard Reset time is 30s

Other additional requirements

- Sectionaliser single phase mounts
- Sectionaliser three phase mounts