

# SMART GAP

## For Power Line Carrier Communications

### FAST CLEARING SPARK GAP

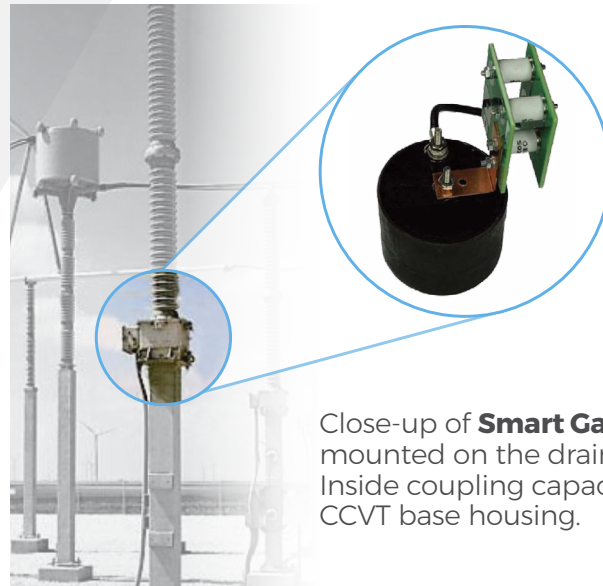
The Smart Gap improves the performance and reliability of your Power Line Carrier communications by minimizing the impact of surge-induced loss of carrier signal, also known as carrier holes. The Smart Gap operates faster than traditional spark gap solutions, extinguishing surges in less than 0.5 millisecond to minimize signal loss.

Interruptions in communication can cause miss-operations in protective relay systems resulting in over trips on DCB (blocking) systems, delayed trips in POTT or DTT systems and false permission to trip in DCUB (unblock) systems. The revolutionary Smart Gap product prevents the impact of carrier holes by quickly clearing the surge to minimize communication interruption.

The maintenance free Smart Gap is an ideal replacement for gas discharge tube or air gap protection requiring regular maintenance. The Smart Gap's compact size provides an easy retrofit into existing line tuners and CCVTs. It is offered in two versions: at a lower voltage for use in line tuners and a higher voltage for use in CCVTs. The easily inspected line tuner lower-voltage gap will show deterioration before the CCVT higher-voltage gap, which requires a line outage to inspect.

### FEATURES AND BENEFITS

- |   |  |
|---|--|
| 1 | Fast clearing - less than 0.5 msec.        |
| 2 | Significantly reduces carrier holes        |
| 3 | Retrofits existing spark gap               |
| 4 | Improves carrier communication reliability |
| 5 | Robust design - maintenance free           |

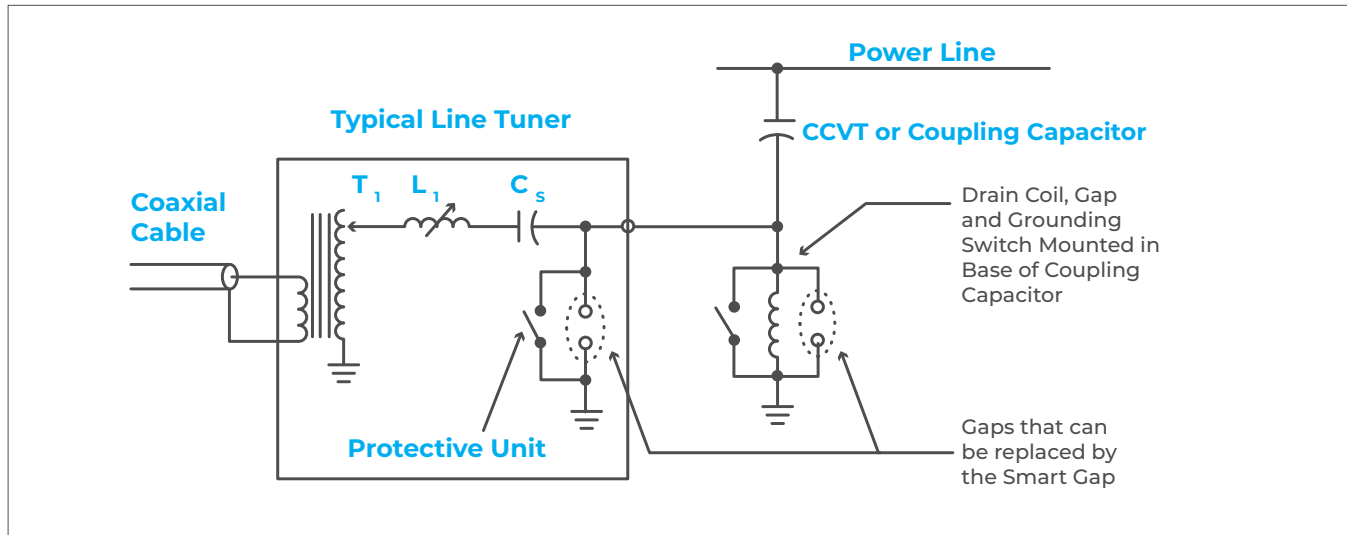


Close-up of **Smart Gap** mounted on the drain coil inside coupling capacitor/CCVT base housing.

# SPECIFICATIONS

Part Number:	C020-GAPMN-002	C020-GAPMN-003
Recommended Application:	For Line Tuner	For CCVT Drain Coil
Smart Gap Specification:		
Typical Firing Voltage (DC)	4.2 kV dc	6.2 kV dc
Typical Firing Voltage (50/60 Hz AC)	3.1 kV rms	4.4 kV rms
Typical Firing Voltage (1.2 x 50 $\mu$ s Surge)	4.2 kV peak	5.1 kV peak
Max Time Before Firing (1.2 x 50 $\mu$ s Surge)	0.3 $\mu$ s	0.3 $\mu$ s
Max Time to Extinguish (1.2 x 50 $\mu$ s Surge)	100 $\mu$ s	100 $\mu$ s
Expected Lifetime with no Degradation	>10k of 1.2 x 50 $\mu$ s 8 kV/4 kA surges	>10k of 1.2 x 50 $\mu$ s 8 kV/4 kA surges
Capacitance Max @ 100 kHz	2 pF	2 pF
50/60 Hz Max Leakage Current (non-conducting state)	50 $\mu$ A	50 $\mu$ A
Gas Discharge Tube Diameter	12 mm	12 mm
Overall Physical size	2.6" x 2.4" x 2.0" (66 x 61 x 51 mm)	2.6" x 2.4" x 2.0" (66 x 61 x 51 mm)
Shipping Weight	0.2 lbs (90 grams)	0.2 lbs (90 grams)

Functional diagram of one terminal of a Power Line Carrier system showing locations of where the Smart Gap can be installed to replace existing spark gaps.



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