

What if one device could solve...

PV  
Capacity

+

CVR  
Control

+

Power  
Quality

+

Volt  
VAR

## 15kV Dynamic Volt/VAR Compensator

Over the last several years, there has been a rapid rise in Distributed Energy Resources (DER), in particular distributed generation from PV in forms of residential rooftop, small utility scale and commercial solar installations. Because renewable energy is dynamic and intermittently variable in nature, distribution grids must now enhance their network's capabilities to accommodate this new resource, while maintaining efficiency and superior power quality for their customers. D-VAR VVO® solutions offer precise and fast reactive power control to maintain utility standards while enabling exponentially growing interest in distributed generation.

### A Powerful New Tool

Featuring continuous control of reactive current, these power electronic compensators can be used to solve dynamic response limitations and costly mechanical wear issues associated with conventional switched cap banks and tap changing regulators. System benefits include increased feeder hosting capacity of distributed generation and reduction of voltage flicker and harmonics in distribution circuits.



**Gridtec**  
Solutions™

Built and designed upon proven experience

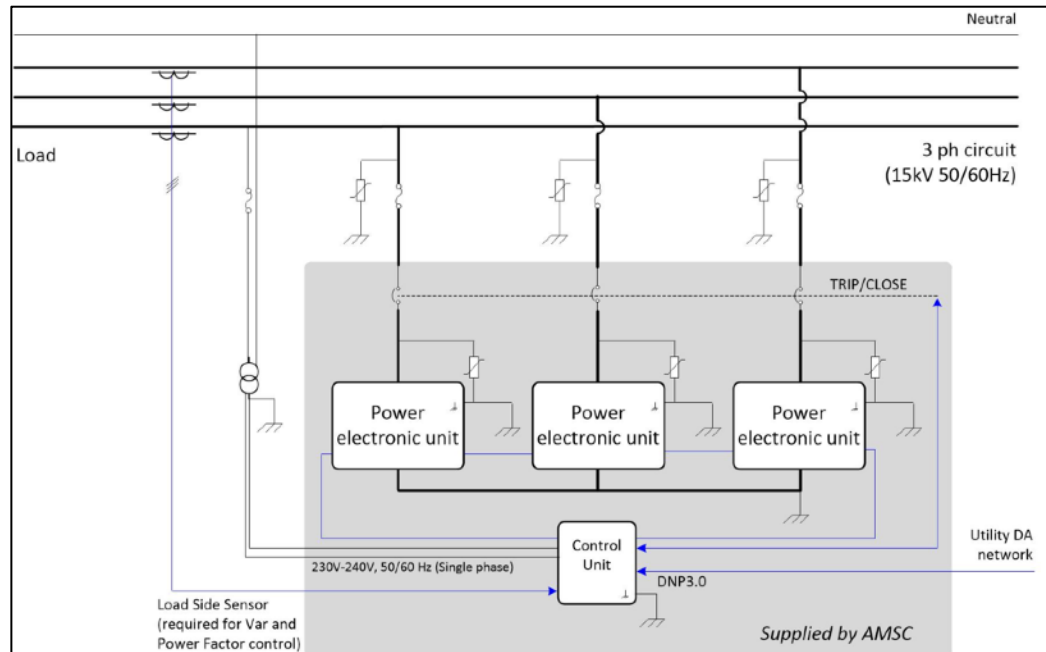
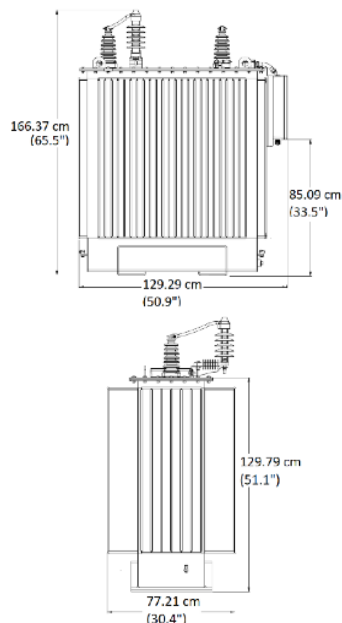
- 15kV distribution class shunt compensation solution
- Operates by injecting a controlled amount of reactive current (inductive or capacitive)
- Autonomous or dispatched control modes
- Three phase or single phase operation

Easy to Install

- Installation requirements similar to overhead transformers
- No routine maintenance
- Can be installed along feeder or in substations

# D-VAR VVO®

## Single Phase Power Electronic Unit



ELECTRICAL		Autonomous	Volt/VAR, Feeder VAR, Feeder Power Factor, or Active Flicker Control
Connections	three phase floating wye, three phase grounded wye, single phase line to neutral	Dispatchable set points	Voltage, Feeder VARs, Feeder Power Factor set point
Installation locations	Along feeder or in substation	Disconnect	External vacuum switch (included)
Connection voltage	Up to 13.8 kV direct connection (no transformer required)	SCADA Connection	DNP 3.0 over Ethernet
Operating range (voltage)	0.5 pu - 1.2 pu (@ 12.47kV Line-Line)	Wireless remote monitoring	DIN rail slot for cell modem
Fault Withstand	12.5 kA Symmetrical	Other controls	Independent phase control
System frequency	50/60 Hz	CUSTOMER I/O	
Nominal kVAR Rating (+/-)	1 MVAR 3ph (@ 12.47 kV Line-Line) 333 kVAR 1ph (@ 7.2 kV Line-Neutral)	Control Supply	230-240Vac input, single phase (50/60Hz), replaceable inline fuse
Overload Rating (temporary)	1.3x for 1 minute	Control Power Transformer	3 kVA (min), 10 kVA (max)
Harmonics	< 3.5% THD (IEEE-519 compliant)	Dry Contact Outputs	2 contacts, Up to 230Vac, 6Arms (also rated for 48Vdc)
Rated losses	1% of output, typical	Digital Inputs	2 inputs (wetted by AMSC control, 12-48Vdc)
Standby losses	< 400 W switch closed, zero current injected	CT Inputs	600A: 10V (gland cable entry)
EQUIPMENT		Grounding Stud	Screw terminal, supports 2/0 to 8 AWG
Temperature range*	-40 to +50 °C (-40 to +122 °F)	Other	AMSC control connector kit specified separately
Altitude	1000 m (3,280 ft) with no derating, 2000 m (6,500 ft) derate to +45 °C (+113 °F)	SCADA Protocol	DNP 3.0 (AMSC to provide points database)
BIL Rating	95 KV	SCADA Physical Layer	RJ45, Ethernet, 10/100
Enclosure	Sealed tank, corrosion resistant ANSI C57.12.28	SCADA Connection	DNP 3.0 over Ethernet, Configurable for TCP/IP or UDP
Approx. Dimensions (single pole mount module)	166.37 x 77.21 x 129.29cm (65.5" x 30.4" x 50.9") H x W x D includes bushings & radiators	Wireless Radio Supply	12Vdc, 1A (other options available)
Approximate weight (pole mount module)	< 1180 kG (2600Lbs)	Wireless Radio Interface	see SCADA physical layers
Pad mount module	Contact factory	Dedicated Service Port	USB

\* applies for outdoor environment

www.amsc.com

smarter, cleaner  
...better energy

