

# ReactiVar™ AT6000/AT7000 transient-free reactive compensation system



## Energy and cost savings benefits

Power factor correction capacitors supply the reactive power (kVAR) required by inductive loads. By correcting poor power factor ratings, capacitors reduce kVA demand thus off-loading transformers, switchgear, and other equipment. The reduced kVA demand results in lower utility power bills, cooler equipment operation, and longer equipment life.

A growing number of utilities are charging for peak electrical demand in kVA on each month's electric bill. As a result, customers are paying demand charges on both kW and kVAR peak operating loads. Most utilities will offer an incentive to customers to keep efficiency high (measured by power factor) by reducing the kW and kVAR usage, thus minimizing the demand charges.

## Transient-free reactive compensation (TFRC) advantages

Transient-free reactive compensation (TFRC) systems are suitable for nearly all electrical networks and are ideal to correct poor power factor in electrical networks with a high concentration of electronic loads. Traditional electromechanical contactor switching of capacitors generates voltage transients that can impair the operation of sensitive process equipment. Capacitors are kept precharged at all times and connection to the network is performed when the capacitor precharge voltage matches the network voltage to achieve a transient-free switch. Transient-free switching also reduces wear on capacitors due to switching and will result in longer life for the overall capacitor system. This fact ensures longer life of the capacitor system and makes TFRC systems ideal for almost all electrical networks.

Depending on the level of harmonic producing (non-linear) devices on the network, two TFRC systems are available: the AT6000 anti-resonant (detuned) system and the AT7000 filtered system.

*Note: Non-linear loads include variable speed drives, UPS systems, soft starters, and other power electronic devices.*

Make the most of your energy<sup>SM</sup>

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## Product features

- Transient-free switching of capacitor steps within 10 seconds
- Electronic switching elements yield an unlimited number of switching operations
- Sophisticated power factor controller options
- LCD display on controller displays actual power factor, alarms, number of steps energized, and much more
- Heavy duty capacitor element provides superior performance
- QED switchboard-style section constructed of 12-gauge steel frame covered with removable 16-gauge steel panels
- Standard section dimension of 30 in. wide x 36 in. deep x 91.5 in. high
- Capacity available up to 1350 kVAR at 480 V

## AT6000/AT7000: Selection guide

There are special considerations when applying capacitors to a network containing highly cyclical or harmonic-producing loads. The following information is needed to ensure proper equipment selection:

- Twelve months of utility billing information
- Location of utility metering
- A single-line diagram of the network showing nature of loads (Examples: 150 HP FVNR starters, 200 HP VFD, etc.)
- Transformer(s) kVA rating, percent impedance (%Z), primary and secondary voltages
- Harmonic spectrum of current and voltage or TDD\* and THD(V)\*\* reading at point of compensation
- Size and location of any existing capacitors

\* TDD: Total demand distortion (current)

\*\* THD(V): Total harmonic distortion (voltage)

## Product specifications

Capacitor dielectric	Metalized polypropylene film; no liquid dielectrics
Internal connection	3-phase, Delta
Tolerance on capacitance	0% / +15%
Discharge mechanism	Polycarbonate resistor; 1 per phase
Discharge time	One minute to less than 50 V
Expected life (5% reduction in rated kVAR near the end of life is typical)	≥130,000 hours at nominal voltage and rated current, 0% THD(V)
Rated voltage (U n)	208 V, 240 V, 380 V, 400 V, 415 V, 480 V, 600 V
Rated frequency	60 Hz, 50 Hz (option)
Insulation level	3 kV rms/15 kV crest
Interrupting rating – Maximum	50 kA AIC symmetrical at 600 V 65 kA AIC symmetrical at 480 V
Continuous overvoltage	1.1 x U n
Continuous overcurrent	1.35 x I n
Maximum allowed Harmonic current (I h)	1.05 x I n
Maximum allowed harmonic voltage (v h)	1.05 x V n
Ambient temperature range	-10° C to +40° C (14° F to +104° F)
> Highest mean: 24 hours	+40° C (+104° F)
> Highest mean: 1 year	+35° C (+95° F)
Other conditions	Consult Schneider Electric™
Altitude	≤ 1800 m (6000 ft) without de-rating
Standards	CSA C22.2 No. 190, UL 810
Paint finish	ASA 49 N1, ASA 61 N3R
Enclosure	NEMA® Type 1, 3R


## For more information

 888-778-2733

 [www.schneider-electric.us/go/services](http://www.schneider-electric.us/go/services)

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