



## BE (Solid State) Voltage Stabiliser

### Data Sheet

Watford Control stabilisers are designed and built in compliance with the Low Voltage and Electromagnetic Compatibility European Directives regarding CE marking requirements. The products are built with suitable quality components and the manufacturing process is constantly verified in accordance with the Quality Control Plans which the Company applies in compliance with the ISO 9001:2008 Standards. In order to obtain better performance, the products described in the present document can be altered by the Company at any date and without prior notice. *Technical data and descriptions do hold therefore any contractual value.*

The BE range offers the advantage of true solid state, low distortion, inductive power control. Based on the original patented Watford twin transductor design, providing the reliability of solid state control without the use of power semiconductors in the supply lines which can be easily damaged by voltage spikes or current surges, as is the case with solid state tap changers.

All our stabilisers are manufactured under strict quality controlled procedures approved to ISO 9001:2008 and ISO 14001:2004. Every stabiliser or regulator complies with the latest European EMC directive to ensure that the quality and reliability of our products can be assured. We can confidently claim to have manufactured far more AC Voltage Stabilisers/Regulators than anyone else in the UK and sold them worldwide. There are now hundreds of thousands of Watford Control units in service in some of the toughest environments on earth.

#### Standard Features:

Rated Power (Kva)	Single and Three Phase models with ratings from 10Kva to 400Kva
Input variation range	Available with a wide selection of Input ranges from $\pm 10\%$ to $\pm 30\%$
Output Voltage range	Low Voltage: 100VAC-127VAC (L-N) 173VAC-220VAC (L-L) High Voltage: 200VAC-254VAC (L-N) 346VAC-440VAC (L-L)
Output accuracy	$\pm 0.5\%$ accuracy maintained over the full range of input voltage variations from zero to full load irrespective of power factor
Supply Frequency	47/60Hz
Speed regulation	Correction times vary according to model size, typically 3 cycles (0.06 Seconds) for the smaller models and 15 cycles (0.3 Seconds) for the larger ones.
Efficiency	better than 94% with up to 96% on larger models.
Admitted load variation	Up to 100 %
Admitted load imbalance	100 %
Cooling	Natural air ventilation (aided with fans over 45°C)
Ambient temperature	-25 °C +45°C (. Derate by 2% per each additional degree °C up to 70 Degree °C)
Storage temperature	-25 °C +60°C
Max relative humidity	95%
Admitted overload	Ten times the rated current up to 2 seconds. Five times up to 30 seconds. Twice up to 300 seconds.
Harmonic distortion	Less than 2.5% THD
Colour	RAL 7035
Protection degree	IP21 (Other ratings up to IP66 available)
Installation	IP21 Suitable for indoor use only.
Audible Noise Level	Less than 40dB at 1metre distance
Low internal impedance	Capable of sustaining high surge currents.
Power Factor	Any Power factor lagging to 0.95 leading, above 65% of full load there is a slight shift in the Input voltage range as the power factor deviates.

Optional features:

Input Circuit Breaker	Up to 1250Amps (Three or Four Pole available)
Output Circuit Breaker	Up to 1250Amps (Three or Four Pole available)
Manual bypass Switch	Available as a separate switch or built into the Stabiliser.
Over/under voltage protection	Usually offered in conjunction with a motorized Output circuit breaker top open in case of fault and close when back in operational limits., can be offered as a standalone item wired to volt free contacts.
Class I input surge arrestors	Available as an option.
Integrated PFC system	Available on all models as an optional extra.
Total Protection	Input/output and Bypass Circuit Breakers with under/over voltage protection as well as phase sequence and phase failure. (Motorized Output Breaker)
EMI/RFI filters	Available upon request.
Output Surge Suppression	Class II Suppressors Fitted to all Solid-State Stabilisers as Standard.
Static Balancer	Creates a Neutral reference point for the internal components, this is required if the Input is a three wire Delta connection.
Isolation Transformer	Fitted to the Input or the Output of the Stabiliser.

Schematic

