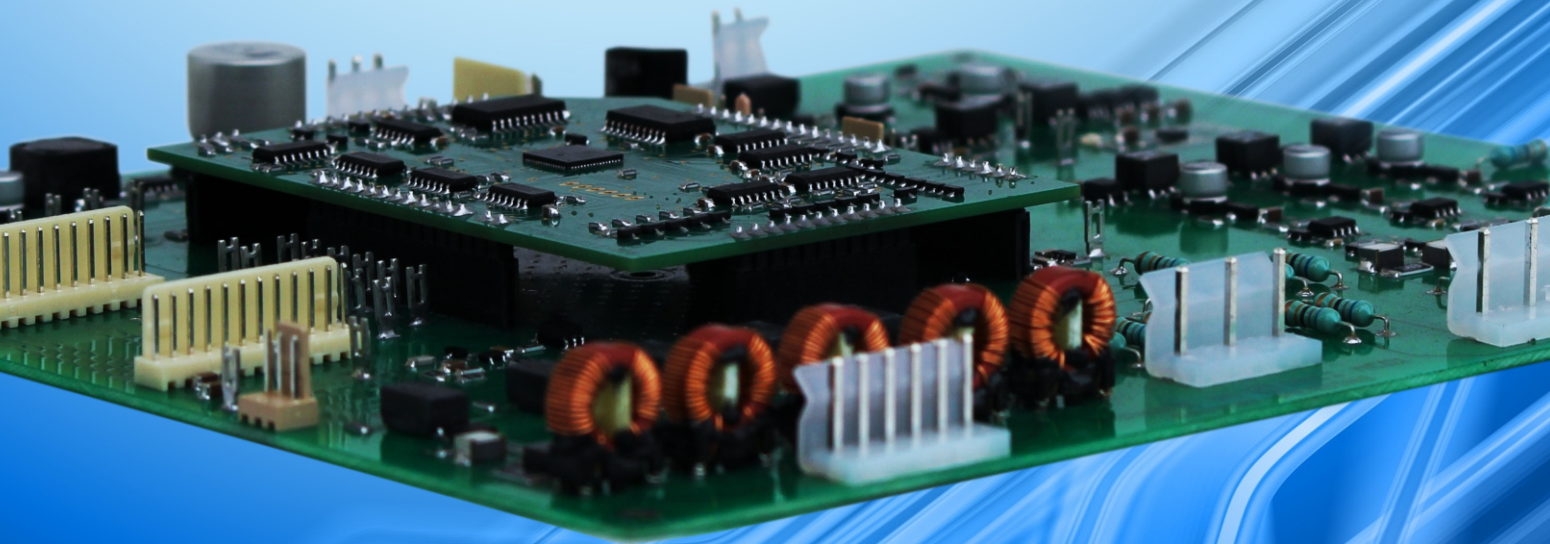


www.medielectronics.com



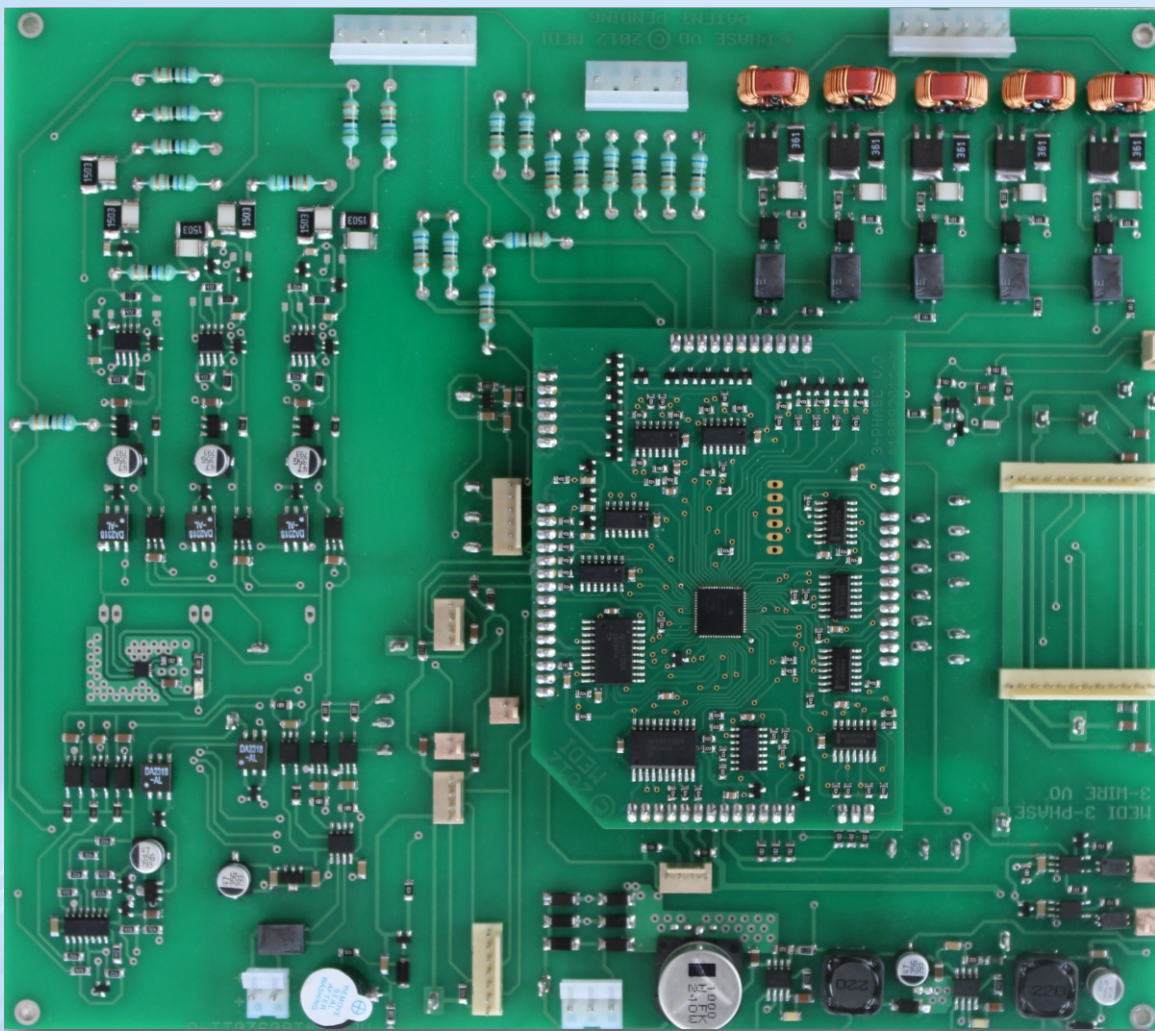
Medi 

Martin's Electronic Devices & Instruments
Research & Development in Electronics Since 1987

Martin's Electronic Devices & Instruments (MEDI) is a firm established in 1987 involved in the research and development in electronics. The main field of MEDI is development of new innovative electronic products and transferring the technology to manufacturers.

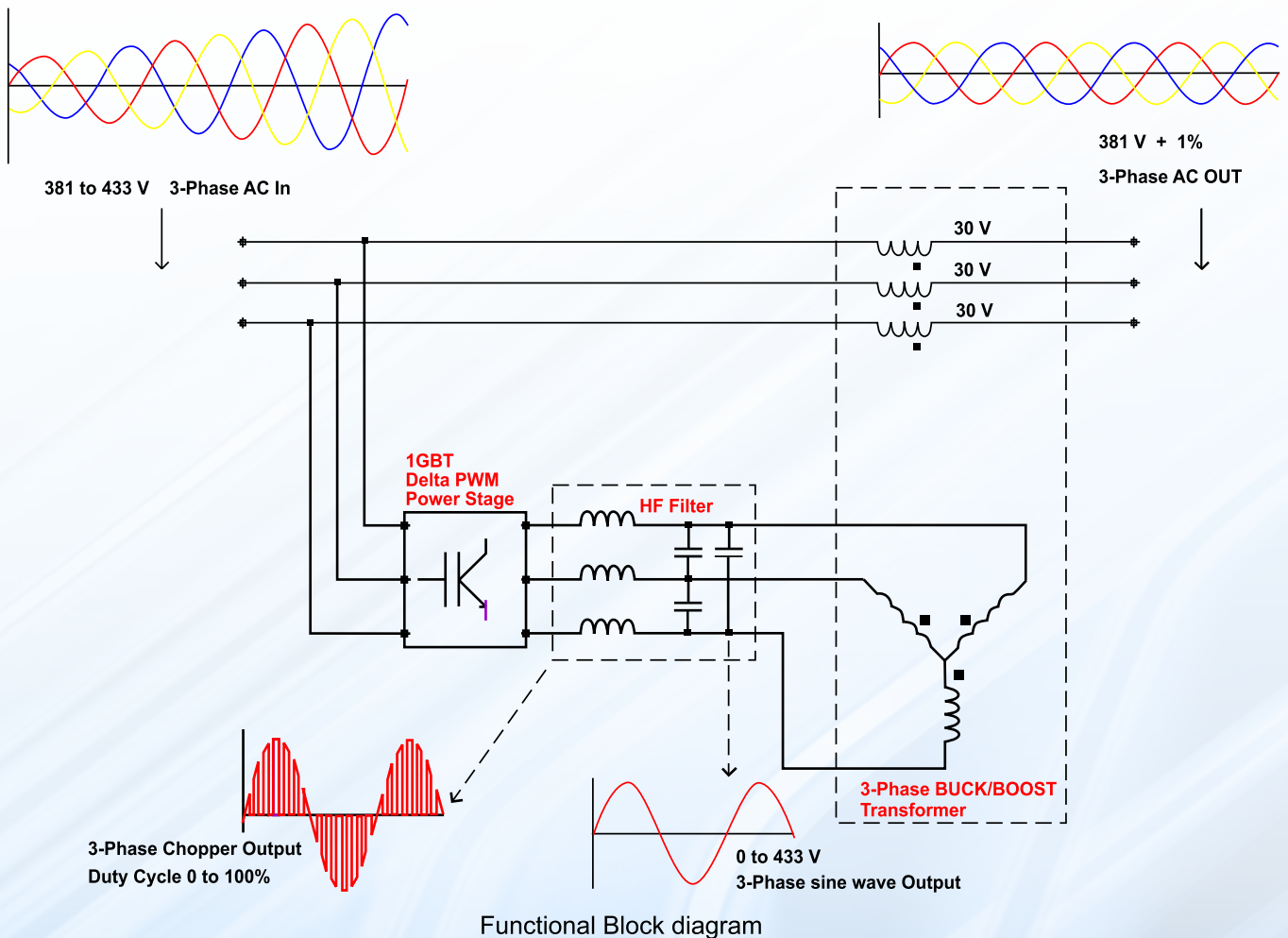
MEDI's IGBT based 3 phase 3 wire Voltage Optimizer with data logging

There are several voltage optimisation products in the market but most of them are based on obsolete technologies like SCR tap switching transformer, electro-mechanical stabilisers etc. Medi's solution is an IGBT based PWM type Energy saver by Voltage Optimisation to reduce carbon emissions and electricity bill.



Control board for MEDI's 3 phase 3 wire Static Voltage Stabilizer. 100A to 500A

This is an SMPS type 3 phase voltage optimizer where PWM is made directly in AC-to-AC switching, without any harmonic distortion. In this topology there is no need to convert the AC input to DC and again convert it back to regulated AC output. This improves the efficiency and reliability, reduces the component count. The 20KHz chopping frequency ensures absolute silent operation and pure sine wave output.



The advantage of this development is that it is 3 phase 3-wire input, 3-wire output (delta in delta out) and works without neutral. Because the unit does not require neutral it is not dependant on the availability or the quality of the neutral line. But single phase loads can be connected from any of the phase output to the existing neutral.

Features

- Three phase three wire operation. The PWM is done directly on Phase to Phase, not on neutral to phase. Output is regulated for phase to phase voltage and hence for existing neutral to phase voltage also. So Neutral not required for the working of the unit.
- Neutral quality or availability is not effecting the output regulation or working of the unit.
- IGBT based PWM type voltage optimizer which has tight regulation and fast correction speed. Output regulation of +/- 1% impossible in conventional stabilizers.
- Direct AC-AC conversion without rectifying to DC improves the efficiency, reliability and reduces the components.
- Rapid cycle by cycle correction of output which corrects sudden fluctuation in the line voltage.
- Active clamping algorithm eliminated unclamped inductive switching and ensures spike-free operation without any snubber.
- 20KHz PWM control resulting silent operation and no distortion in output waveform.
- Only three half bridge IGBT modules required because of 3 Phase delta PWM power topology.
- Fully solid state. No moving part, hence more life and no maintenance.
- Protections / cutoff against Overload, short circuit, Over voltage and under voltage.
- Uninterrupted automatic bypass in case of hazard/failure.
- Compact size and light weight. Small buck/boost transformer size (1/7 th of the capacity for 52V buck range)
- Every hour system go to uninterrupted bypass and measure actual power, optimized power and saved power then display with date and time stamp. Wireless Zigbee communication for data monitoring and Internet connectivity.
- 381V to 433V input, 381V output 100A to 500A each phase.
- LCD for displaying all parameters

Medi 3-Phase VO Energy Saver

File Tools Help

View Setup Memory

EM6400

	Actual KWH	VO KWH	Saved KWH	Frequency (Hz)
KWH / Frqncy	5.48	5.11	0.37	50.13
Voltage In (v)	R - Y	Y - B	B - R	Avg
	422.00	424.73	426.75	424.50
Current In (A)	R	Y	B	Avg
	16.02	16.22	15.75	16.00
Active power (KW)	R	Y	B	Total
	3.49	3.35	3.42	10.26
Reactive pwr (KVAR)	R	Y	B	Total
	1.78	1.80	1.69	5.27
Apparent power(KVA)	R	Y	B	Total
	3.98	3.88	3.88	11.74
Power factor	R	Y	B	Avg
	0.89	0.87	0.89	0.88
Voltage THD (%)	R	Y	B	Unbalance Volt
	6.10	9.15	11.92	2.87
Current THD (%)	R	Y	B	Unbalance Load
	6.23	6.37	6.21	4.42
Voltage Out (V)	R - Y	Y - B	B - R	Date:
	380.94	382.00	379.38	8/12/14
Current Out (A)	R	Y	B	Time:
	18.72	18.88	18.99	18:00:00

Serial port is open

Pause

Select All

De select All

Clear All

Exit

- Over Load
- Excess Heat
- High Voltage
- Low Voltage
- Em6400 comm failed
- Bypass relay is ON
- Main relay is ON
- Temp sensor error
- Cutoff mode
- Auto Track VO mode
- Forward Phase Seq
- PWM Switching
- VO Communication OK

PC screenshot monitoring all parameters through wireless Zigbee interface



Martin's Electronic Devices & Instruments
Research & Development in Electronics Since 1987

23, 4th cross, Hutchins Road, Bangalore - 84,
 Phone:- +91 94001 51111, +91 92123 87080, E-mail: bangalore@medielectronics.net

39/2067, Manikkiri Cross Road, Pallimukku, Cochin, Kerala, India PIN 682 016
 Phone:- +91 484 2356429, 3018604, 4073297, 093886 15176, E-mail: cochin@medielectronics.net

For International enquiries:
 Email: london@medielectronics.net
 Phone: +44 74 3861 8036, +44 20 3575 1411

www.medielectronics.com