

# AMTECH News

FOR PRIVATE CIRCULATION ONLY

FEBRUARY 2012



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Controlling · Driving · Operating · Networking

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Editor :  
ATUL SUTHAR

Self-trust  
is the first  
secret of  
SUCCESS

## From the Desk of Director

### You are born unique!

Once upon a time a school inspector entered the class of standard four. He asked the students one by one, to stand up and say who they want to be in future. Then the students started telling, "I want to be Shivaji", "I want to be Vivekanand", "I want to be Newton" and so on. However one student stood up and said "I want to be Yashwant Chavan". The inspector was somewhat surprised by this answer, he had not heard till then this name. He asked the student, "I have not heard this name before. Who was Yashwant Chavan?" The student said, "I am Yashwant Chavan and I myself will be a great man in future". The inspector was very happy to see his confidence, he patted his back and told the class teacher that this boy is extraordinary and will be a great person in future. Later on that boy became the home minister and then the Deputy Prime Minister of India and was known as "Yashwantrao Chavan".

Morale: one need not become somebody else, one can become what he or she is, as everybody is born as a unique person.

Piyush Patel

## EXHIBITION AT ELECRAMA-2012



Amtech Electronics (I) Ltd. Participated in  
**ELECRAMA-2012**  
Bombay Exhibition Center, Mumbai, India  
on 18-22 January 2012



AMTECH News

## Industrial Automation

Controlling · Driving · Operating · Networking

Surprisingly simple ...

### The "AMTECH Formula"

Productivity Gain + Saving in Time = Cost Reduction

#### Integration of all Functions Into One System



This helps achieve a reduction of up to 30 % in time and money spent on programming and commissioning, because JetWeb eliminates expenses for various software licenses, for getting familiar with several systems and for programming interfaces!

#### Straightforward Integration of Devices



New devices are automatically detected and integrated into the system, which simplifies maintenance and reduces downtimes. Moreover, JetWeb technology allows quick and simple replacement of devices during operation!

#### Bringing Together Production and Corporate IT



This feature improves data flow within an organization. Just-in-time production, production changeover and monitoring are simplified because all relevant information is available at the right place and at the right time.

#### Use of Standards



The use of standards gives you flexibility and guarantees compatibility - now and in the future! For networking we make use of the standard IT protocol Ethernet TCP/IP, and of the visualization standard XML. But we also support widely used protocols, such as Modbus TCP/IP, CANopen®, Profibus-DP, or EtherNet/IP.



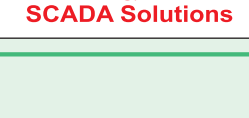
**Plant Automation**



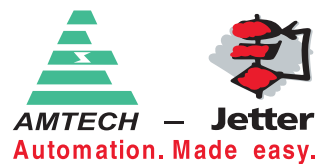
**Machine Automation**



**Line Automation**

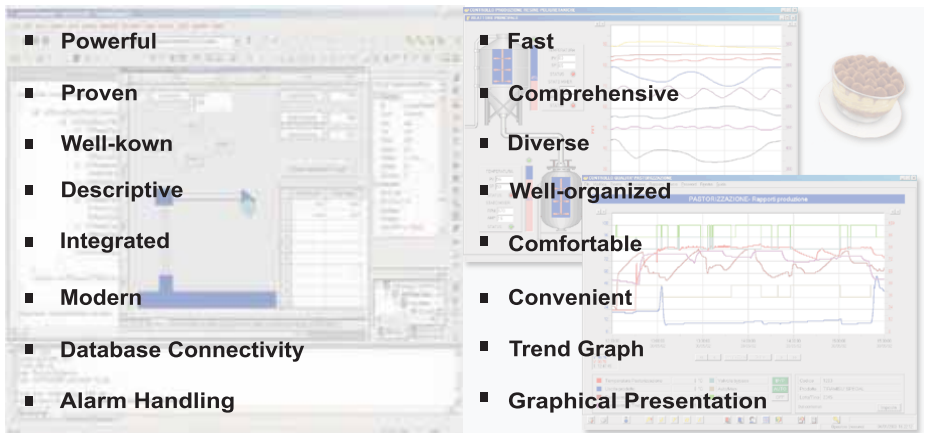


**Data Management & SCADA Solutions**



### Our Automation Solutions are :

- Powerful
- Proven
- Well-kown
- Descriptive
- Integrated
- Modern
- Database Connectivity
- Alarm Handling
- Fast
- Comprehensive
- Diverse
- Well-organized
- Comfortable
- Convenient
- Trend Graph
- Graphical Presentation



## DIGITAL TO TRULY DIGITAL...IT'S HIGH TIME TO CHANGE



DECS-400



DECS-300



DECS-200



DECS-100



GPS-BE1-11F/G



PSS-100

ENERGY AUDIT

POWER QUALITY & ENERGY CONSERVATION MANAGEMENT GROUP.

HARMONIC AUDIT



DECS-200



- Microprocessor-based design
- True RMS sensing, single or three phase
- 32Vdc, 63Vdc, and 125Vdc outputs at 15Adc
- 0.25% Voltage Regulation Accuracy
- Setup from front panel HMI or by PC with Windows® setup software included
- 20 standard stability selections
- User customizable stability selection
- Paralleling compensation
- Under frequency compensation or V/Hz Ratio Limiter
- Soft start buildup
- Field Current Regulation Mode (Manual Mode)
- Auto tracking between operating modes & between two DECS-200 units
- Minimum Excitation Limiter (Internally generated or customizable)
- On and off-line Maximum Excitation Limiters
- Stator Current Limiter
- Var and Power Factor Controllers
- Exciter Diode Monitoring (EDM)
- Sequence of Events Recording
- Oscillography



DECS-200N



- Multiple microprocessor-based design
- True RMS sensing, single or three phase
- ±0.25% Voltage Regulation Accuracy
- Up to 20 Adc continuous
- Built-in 6 SCR power bridge
- Negative field forcing
- Highly compact design
- High initial response
- Soft start buildup
- Var and PF operating modes with Autotracking
- Autotracking between operating modes & between dual DECS-200Ns
- On and off-line Overexcitation Limiter
- Customizable Underexcitation Limiter
- Stator Current Limiting
- UF compensation or V/Hz Ratio Limiter
- Field flashing control provisions
- Paralleling provisions
- Generator Protection
- Exciter Diode Monitoring (EDM)
- Oscillography and Sequence of Events Recording
- Voltage Matching
- 5 Programmable output contacts
- Modbus™ protocol via RS-485 communications

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## THE FACE OF THINGS TO COME... IN EXCITATION CONTROL

# CUSTOMER'S VOICE



## AKAISH MECHATRONICS LIMITED

AML/TSV/11-12  
15<sup>th</sup> Dec.'2011

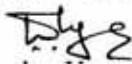
### To Whom It may concern

This is to certify that M/s. Amtech Electronics (I) Ltd. , Gandhinagar has supplied to us "**AMTECH**" make AC VFD (VT and Easy series) from 3 HP to 50 HP in CNC machine and in Crane (Hoist, LT & CT) applications since last 8 years.

The 100% success rate is maintained in all kind of applications because of very good products and after sales services.

We wish all the best to entire Amtech Family.

For Akaish Mechatronics Ltd

  
Tushar Vyas  
Sr. Manager (P & S)

cc.- M/s Amtech Electronics (I) Ltd  
E-6, GIDC,  
Gandhinagar.

A Maintenance Service Provider Company of Elecon Group  
Regd. Office : Anand Sojitra Road, Vallabh Vidyanagar - 388 120, Gujarat, India.  
Tel : (02692) 230168, 231125, Fax : (02692) 236508



*Five Star Microbase Coating (India) Pvt. Ltd.*

ISO 9001 - 2008 Company

Date: 22/11/11

### To whom so ever Concern

We appreciate herewith excellent performance of AC VARIABLE FREQUENCY DRIVE supplied by Ms. Amtech Electronics (I) Ltd, Gandhinagar AXPERT-VT240s model for rating range from 5HP to 75HP with motor selection options for Transport Hoist and Travels forward/reveres and Blower Fan application.

M/s. Amtech Electronics (I) Ltd is capable of providing quality drives. The delivery of spares and after sales service has been excellent. We are satisfied with after sales supports provided by M/s. Amtech Electronics (I) Ltd.

For M/s. Five Star Microbase Coating (India) Pvt Ltd.

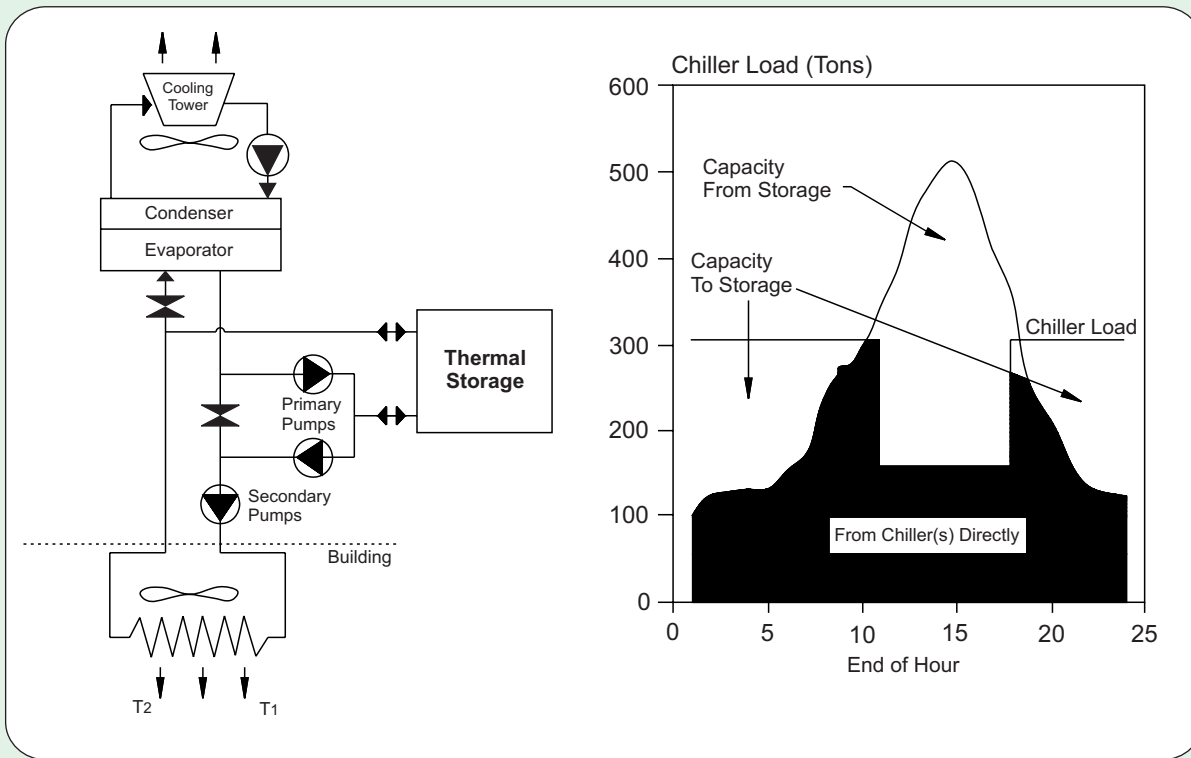


Managing Director

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## VFD Vs Thermal Storage for Chilling Plant

A chiller plant has to work in the varying atmospheric conditions. A plant designed for full load, seldom runs near the full load and when plant is running at partial load, its efficiency is badly getting affected. A chilling plant can be made to run at full load by providing Thermal Storage System.



An Electric Power Research Institute's (EPRI) Commercial Cool Storage Field Performance Monitoring Project (RP-2732-05) Report states that the storage efficiencies of tanks significantly decrease if tank walls were exposed to sunlight and outdoor ambient conditions and/or had long hold times prior to discharging. Other than this, the Thermal System has following disadvantages

1. Pipes and surface heat losses
2. Additional pumping power required to store/circulate the chilled water
3. Regular maintenance is required

VFD is an ideal option to this problem, which modifies the chiller characteristics and tuned it to system requirement, which saves a lot of power and which has natural dynamic response without use of storage system.

**Consult AMTECH now to save your chiller power.**

“You question, we answer”

## How to Calculate the Motor Power for Overhead Crane?

1 Tone of load is required to lift up.

Load of Crane = 0.25 T

The raising and lowering of load is done at 5 m/min.

So, the power required by load =  $[1250 \times 9.81 \text{ (N / kg)} \times 5 \text{ (m/min)}] / (60 \times 1000) \text{ kW}$ .  
= 1.021 kW

Efficiency of gears = 0.95

Motor Load = 1.075 kW

Service Factor = 1.2

Motor Rating = 1.3 kW

Nearest Motor Rating Available = 1.5 kW = 2 HP

**Note:** This is a sample calculation only. Actual rating requires many factors to be taken in to consideration like Ambient Temperature, Friction Factor, Torque Factor, Number of Starts - Stops per Hour, Duty Cycle, Load Holding Time etc...

## Power Quality

“ Protect your equipment & minimize downtime with our quality solutions. ”

Amtech's Power Quality Solutions', offer you the synergy of multiple benefits - energy conservation, enhanced operational efficiency and reliability through a dedicated range of products and services.

### Products:

- Passive Harmonic Filter
- Active Harmonic Filter
- Active Front end Converter
- Harmonic Reactor
- Static Harmonic Converter
- EMI/RFI Filter
- Sinus Filter



Passive Harmonic Filter



Active Front end Converter



Active Harmonic Filter

### Services:

- Harmonic Audit and Solution to comply with global standards IEEE-519:1992, G5/4-1, GB/T 14549, IEC 61000-3-2,-3-4
- System design, optimization & pay-back analysis
- Consultancy for Power Quality improvement
- Installation and commissioning of harmonic filters
- Training on Power Quality Management
- Energy Audit & solutions by experienced BEE certified professionals



“ One stop solution for Quality Power ”

## TITLE : ENERGY SAVING IN BOILER ID FAN

**INDUSTRY** : Sugar  
**APPLICATION** : Boiler ID Fan.  
**MOTOR RATING** : AC Induction Motor, 3 Phase  
**RATING** : 160 KW      **VOLT** : 415 +/- 10%  
**RPM** : 1460      **Hz** : 50 +/- 5%  
**AMP** : 277A

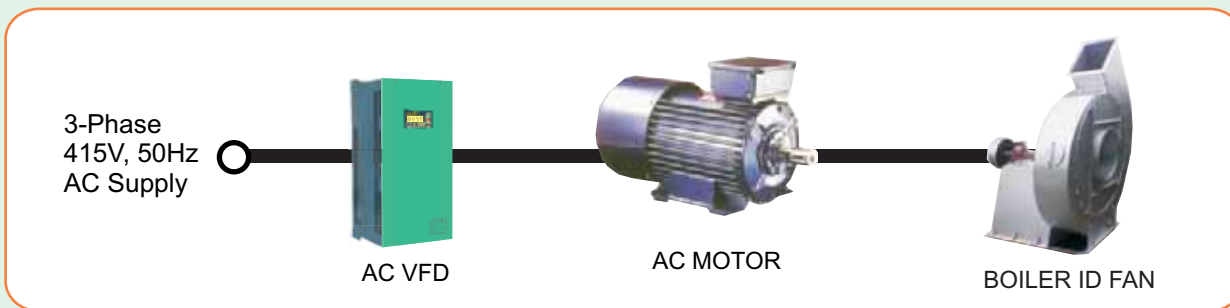
**PREVIOUS SYSTEM** : 1. Motor was running on star/delta starter  
2. Flow control through damper.

**PROBLEM OBSERVED** : 1. Motor Maintenance is high due to star/delta starter.  
2. Energy loss because of damper control

**PRESENT SYSTEM** : AXPERT EAZY 160 KW drive used in place of star/delta Starter

	<u>Power Consumption-KW</u>	<u>FREQ.</u>
Previous system (without drive) :	110 KW	50 HZ
Present system (with drive) :	71 KW	40 to 42HZ

**SYSTEM BLOCK DIAGRAM** :



**MERITS OF NEW SYSTEM** : 1. Energy saving due to flow control by AC VFD.  
2. Easy control by AC VFD instead of damper control.

**ECONOMIC ANALYSIS** :

1. Power Consumption without VFD	: 110 KW/hr
2. Power Consumption with VFD	: 71 KW/hr
3. Energy saving per day	: 936 KWH
4. Tariff rate rupees	: Rs. 3.5 /unit
5. Rs. Saving per day	: Rs 3276/-
6. Rs saving /crushing Season (120 days)	: Rs.3,93,120/-
7. Payback period	: 1 Crushing season

# PRESENCE ACROSS THE GLOBE

## Regional Offices

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**LEGEND :**

- Head Office
- ▲ Branch Office
- Dealer
- System Integrater
- | Resident Engineer
- Global Distribution

**From**  
Works & Regd. Office :



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**To** **Book-Post**