

# News



**e=CS<sup>2</sup>**  
Quarterly  
Newsletter  
2ND QUARTER '08

To meet the stringent safety requirements and disaster management, it would also have a helipad for emergency evacuations. The installation of our busbar trunking systems at a prestigious building, has underscored the quality and capability of our products.



## Standing Tall

With C&S installing the busbar trunking systems at the proposed headquarters of Municipal Corporation of Delhi (MCD) proposed H.Q. **Delhi's tallest building**, the company and its client, are touching new highs, literally. The 28-storeyed institutional complex in the Civic Centre - being constructed at Jawaharlal Nehru Marg, Minto Road - is the tallest building in the Capital, standing 3.5 metres taller than Hansalaya, which used be the tallest building in the city.

According to the civic agency, the new tall building is fast becoming the talk of the town. The Civic Centre has reached a height of 91.5 metres, and is growing.

One of the most ambitious projects of the civic

body, the Civic Centre will have 28 floors. The building once completed, will stand at 101 metres from the ground level, much higher than the Qutub Minar, which stands at 72.5 metres.



Proposed HQ of MCD - Delhi's Tallest Building

We are delighted to announce another step in our quest to achieve our mission. We will manufacture medium voltage switchgear in India in association with EFACEC Group which is a Portugal-based MNC.



Mr. R.N. Khanna CMD - Addressing the Press Conference



## Micro Pro : Start Communication with ACB

The multipurpose Micro Pro Over Current Protection Release offers advanced features like Communication port (RS-485) through MODBUS protocol, Fault recording, Zone Selectivity Interlocking and Ammeter function in AH series ACB (630-6300 amps.)

Micro Pro is a true RMS sensing release, which provides highest degree of systematic protection co-ordination against overload, short circuit, ground faults and neutral protection with error-free and user-friendly setting of current & time



delay with operation check function by self-powered built-in current transformer.

It has visual indication for Fault discrimination by LEDs and self-monitoring of trip unit with blinking indication.

Micro pro is certified by

## WiNtrip DB

WiNtrip DBs were launched recently, to complete the final distribution range which includes MCB & Isolators.



For the first time, DB with a deep drawn cover is being introduced in Indian market along with various other advantages like insulated neutral link, insulated copper bus bar, earth bar & interconnecting links with lugs thus ensures effective and safe power distribution.



C&S Distribution Boards undergo a Seven Tank Phosphating process to ensure an anti-rust conditioning, superior finish and long-lasting strength.



60 micron premium quality powder coating is applied for extra smooth glossy finish.

Select models of WiNtrip DBs are in compliance of IP 42.

## 2 Pole Contactor

TC now introduces 2 Pole contactor, which is designed for specific single phase power control applications with a common frame size in various rating of 20A, 25A, 32A & 40A conforming to IS 13947-4-1 standards.

It has a long usage life of 10,00,000 operations for four different AC3 motor duty rating and dual rated coil operating in 160-260 V AC range. These two pole contactors offer several advantage like extra thick inter-phase barriers, large terminal area, electromagnets for low voltage pick-up, suitable Contact Configuration, excellent Thermal Rating & Insulation Resistance.

2 Pole Contactor has wide applications in areas such as Agriculture, Domestic Pumps, Deep Freezer, Heater Control, X Ray Machines, Welding Control, Machine Tools & Air Conditioners OEMs.





## Launch of Complete Hospitality Range in System Range

C & S Gewiss has launched a new product range in its system range of wiring devices. These new products will cater to the needs of the Hospitality industry. They include:

- 1) **LED-based Indication modules:** Using LED based illumination, complete range of hotel indicators – including 'Make my room', 'Do not disturb' and 'Room occupied' indicators. The indicators can be customized to suit a wide range of other applications. The indicators are available in black and white.
- 2) **Time delayed, energy saving master switch:** 25 Amp time delayed switch, using a card for switching. This provides an ideal energy-saving solution and has sufficient rating to be used without a relay switch.
- 3) **Volume Controller:** Electronic based variable control volume controller for in-room loudspeaker applications in hotels. Available in black and white.
- 4) **International socket:** 15 Amp international socket compliant to UK, US, European and Indian standards. Products are available in black and white and have been designed to ensure secure contacts for all modern electronic appliances.
- 5) **Shaver socket:** Multi region 110v/230v shaver socket, with built-in trip switch to ensure user-safety in wet conditions.

## Luminaires Technical Catalogue

**Luminaires Technical Catalogue-08** containing technical details of all C & S Gewiss Luminaires along with their applications and unique features, has been published. The catalogue also provides additional information

on illumination norms and standards, conversion ratios, lamp parameters and selection charts. The catalogue is focused at the consultant and architect fraternity and should act as a valuable guide for luminaires selection and illumination design.

## Major Orders received by C & S Gewiss

C & S Gewiss supplied Rs. 40 lakh worth of street lights to MCD securing the tender amidst stiff competition from Philips, Bajaj, Crompton and Surya. These will be supplied across various parts of Delhi.

Apart from this, C & S Gewiss has secured substantial lighting orders in the last quarter of 2007-08 from Mazgaon Docks (Mumbai), Ashoka Hotel (Delhi), Ansal Builders (Delhi, Jaipur) and Era Group (Delhi).

In addition, the team also secured major orders in switches and industrial plugs and sockets from IBM (Bangalore, Hyderabad), Oracle (Bangalore), Adani Group (Ahmedabad).

contd from cover page



Our CMD, Mr. R.N. Khanna and EFACEC Chief Executive, Mr. Luis Filipe Pereira announced the formation of a JV at a press conference in New Delhi on 31.01.08. Mr. R.N. Khanna added further that "the JV will set up its manufacturing facility at Noida, Uttar Pradesh, to meet the domestic demand of switchgear and also export them to its existing markets spread over more than 73 countries, across the globe.



Mr. R.N. Khanna & Mr. Luis Filipe Pereira



Mr. Ashok Khanna, Mr. R.N. Khanna, Mr. Luis Filipe Pereira and Mr. Joao Paulo Oliveira

The EFACEC Group too seemed bullish on the Indian switchgear market, which according to statistics, grows at 25 percent a year. EFACEC Chief Executive Luis Filipe Pereira, who was also present at the news conference said: "We have high expectations from the Indian market."

Indicating that both companies would expand their cooperation in the future, Mr. R.N. Khanna briefly elaborated on the plans to be executed together. He stated that "We will specialize in products and solutions for power management. Our wide range of electrical and electronic products will be increasingly used in generation and distribution of electricity."

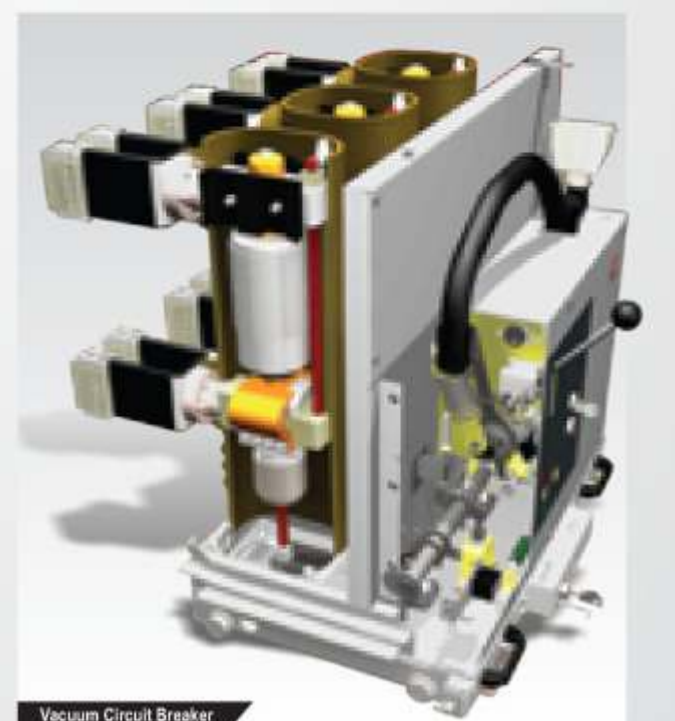
C&S Group already has 15 manufacturing units located in places like Haridwar, Pantnagar and Noida.

EFACEC is present globally in all the areas of power generation, transmission & distribution,

control & automation with its verticals including switchgear, power transformers, transportation & logistics, renewable wind, solar and wave energy, maintenance of public facilities and services & upgradation of electrical equipment. The dual objective of this JV will be to address the growing market for medium voltage switchgear and exclusively supply components and assemblies to the global medium voltage subsidiaries of EFACEC. This venture will cater to the market for primary & secondary medium voltage switchgear in India by providing products for primary distribution segment which will be used in power-plants and heavy industries. Secondary distribution products will also be used in the distribution network and in light industry and commercial real estate.



SF6 Pole Mounted Remote Controlled Switch



Vacuum Circuit Breaker



# h@ppenings

C&S sponsors  
**dubai**  
exhibition

# C&S 2008

C&S  
Cables & Switchgear  
Group  
**e-CS<sup>2</sup>**  
Quarterly  
Newsletter  
1st Quarter '08



Middle East Electricity Show - Dubai

C&S Group was once again in the international limelight when it co-sponsored and participated

Energy, this exhibition had C&S displaying a product range that covered the entire spectrum of the energy industry like Contactors, Overload Relays & Accessories, SP DC & DP Contactors, Motor Starters, Air Circuit Breakers, Switch Disconnectors, Changeover Switches, Compact Bypass Switches, Push Buttons, P/Lamps, Selectors, 1-2-3-4 way Control Stations, Busbar Systems, MCC's & PCC's, Busducts, Power System Protection Relays, MCC and Power Capacitors, among others.



in the 'Middle-East Electricity Exhibition' held in Dubai from February 10 to 13, 2008.

Supported by Federal Electricity and Water Authority of UAE and inaugurated by HE Mohammed Bin Dha'en Al Hamili, Minister of





# elecrama 2008



C&S Stall at the Elecrama - 2008

In what can be recorded as one of the most successful shows, C&S once again left its mark in Elecrama 2008, the largest show for electrical and electronic products in India. Organized by IEEMA, the event was held from January 18-22, 2008 at Mumbai Exhibition Centre with over 2000 Indian & international participants displaying the latest technological products in different categories.

The entire range of products from C&S Group - LV



Mr. R.N. Khanna alongwith Mr. D.V. Patil, Energy Minister of Maharashtra

Switchgear, Controlgear, Wiring accessories, Protection Relays, Switchboards, Terminals, Alternators, Busbar Trunking System & services of RS Components & Controls - was displayed. Besides this, what attracted a lot of visitors was a first time LIVE demonstration of numerous C&S products.

Major attractions of this exhibition were the **Intelligent panel** displaying total control & operations of ACB, MCCB & Intelligent motor controller on touch screen using MODBUS protocol, and Outdoor Bus Trunking installation displaying waterfall on products with current flowing through them.

C&S was awarded 'Certificate of Appreciation' for Best Stall in Elecrama by IEEMA Experts Committee.



C&S had recently displayed an Intelligent panel at the ELECRAMA in Mumbai. It is an excellent piece of work done by the team of C&S engineers. This intelligent panel uses MODBUS technology of data communications and command through wireless network for monitoring of various control and switching devices like Air Circuit Breakers, MCCBs & Contactors.

The user interface of this panel has a touch screen which is capable of interfacing with slaves for remote operations by Wi-Fi.

It has an ON/OFF operation of the ACB/MCCB/Starter from the touchscreen with display of settings of various devices on the touch screen. All changes done on the relay are reflected on the touch screen and the remote unit (on Laptop by Wi-Fi).

All electrical parameters for power monitoring (Voltage / Current / Power, etc) too

are available on the touch screen and remote display.

Advanced Micro-processor releases installed in ACBs & MCCBs have Zone selectivity feature, ZSI - which works with a co-ordinated system to limit fault stress.

The user interface of this panel is very simple and with the help of single line diagram, it can initiate execution of a command by clicking the particular command on the diagram. For example if ACB1 is to be opened, then OPEN command will have to be pressed. Indications of the LEDs will change in accordance with the status of the ACB.



Intelligent Panel

# C&S<sup>2</sup>

C&S  
Cables & Switchgear Group  
e-CS<sup>2</sup>  
Quarterly  
Newsletter  
100 COURSE 10

## showcase INTELLIGENT panel

### Operational Sequence

The touchscreen will display the mimic diagram with appropriate command created for operating corresponding devices through PLC. The command code is sent over MODBUS from touch screen and appropriately turns on the output which is fed to shunt coil of the breaker for

opening and to closing coil for closing the breaker.

Similarly, a breaker on button which when pressed, will turn on the breaker after receiving the signal from the PLC and it will send the input to PLC, when the breaker is closed and PLC will

send the signal to touchscreen. The OFF button will be enabled only after receiving the breaker ON signal.

Feeder tripping information/current parameters can be communicated to predefined mobile phones via SMS through GSM module connected on one of Relay with RS 232 port.

The Master display touch screen will send the command to communication module of the ACB Micro-pro relay which has the last 16 fault trip histories. All these can be also accessed on the touchscreen or at remote location (laptop).

# intec coimbatore

INTEC is the most awaited trade fair by the industrial fraternity. Held in Coimbatore, South India, it has a reach that is truly international. Since 1988, it has been a biennial affair presenting the very best in technological advancements, giving an insight into the ever changing global industrial scenario. It provides an ideal platform for new business opportunity for Industrial products. It has over 2 lakh business visitors with participation from numerous foreign countries.



C&S Stall at the Intec - Coimbatore



# expanding frontiers

## DUBAI Office

C&S is set to electrify the international circuit by opening its regional office in Dubai. This is in keeping pace with the increasing demand for C&S products in the Middle East and Gulf countries.

C&S has already established a solid ground in Dubai with its LV components and Bus Risers in the skyscrapers of the city that is one of the biggest construction markets in the world. Our upcoming office will aim to expand customer base and improve customer satisfaction with enhanced services and efficient delivery of products.



## C&S Himoinisa switches on commercial production

We are delighted to announce that the state-of-the-art manufacturing facility of our generator plant at Pantnagar, the 50:50 Joint Venture of C&S Company and Himoinisa, S.L. Murcia Spain, has started commercial production. The breathtaking view of its production is adding another feather in the cap of C&S

for its manufacturing capability. With the operationalization of this plant, C&S has once again reiterated that it is one of the leading manufacturer of world-class products and services for power generation, transmission and distribution of electrical power.



Inside View of C&S Himoinisa unit - Pantnagar

## Busduct Unit - Haridwar.

Controls & Switchgear Group took another stride, when its busduct unit at SIDCUL, Haridwar with a covered area around 40000 sq. ft. had commenced production in October 2007. At this state-of-the-art plant, some of the facilities like



C&S Busduct unit- Haridwar



Inside View of Busduct Production



Inside View of Busduct Production

downdraft painting booth and heating chamber with latest automatic Tig/Mig welding & laser cutting machines, are second to none, in the global business environment.

The Division has since then, executed major orders of IPBD & SPBD for several customers of repute.



# power march

## harvesting orders over Rs 100 crore in Jan-Mar'08



Dummy Copy

### Partial List of Major Orders (January-March 2008)

Sr. No.	Client	Equipment	Project	Order Value (Rs. in Lacs)
1	Bhushan Energy Ltd.-New Delhi	Swgr & Busduct Package	2x150 MW, Bhushan Energy Power Plant, Meramandali	973.00
2	Lanco Infrastructure Ltd, Gurgaon	Swgr & Busduct Package	2x507.5 MW Nagarjuna TPP, Amarkantak	924.07
3	BHEL-Hyderabad	LV Swgr Package	2x120 MW Siddharganj, Bangladesh and Damanjodi (Orissa)	705.62
4	BGR Energy Systems	LT Switchgear Package Ltd. Chennai	1 x 500 MW Kakatiya TPS	630.19
5	Reliance-Mumbai	PMCC, MCC & MLTP	2x250 MW Parichha TPP	507.74
6	Sterling & Wilson Electrical Pvt. Ltd.	Sandwich (CU) Bus Trunking	Spaze Commercial Complex, Sohna Road, Gurgaon	162.35
7	Elect Systems Engineers Pvt. Ltd.	Sandwich (CU) Bus Trunking	Gujarat Shipyard	160.00
8	Siemens Ltd.	Sandwich (LA) Bus Trunking	Suzuki Powertrain India Ltd., IMT Manesar, Gurgaon Tata Motors Ltd., Jamshedpur	153.40
9	Power & Instrumentation (GUJ) Ltd.	Air Insulated BBT(CU)	Sun & Sand Hotel, Nagpur	126.03
10	Mas Project Engineers Pvt. Ltd.	Sandwich(AL) Bus Trunking	Alpha G Corp. Ltd. (Shopping Mall) Amritsar	112.00
11	Reliance	LT Swgr Package	Yamunanagar	108.96
12	BHEL-Ranipet & WB	ACP Panels	Kothgudam-VI Apgenco, Chhabra & Mejia TPS	107.00
13	E Power Engg.	Sandwich(AL) Bus Trunking	Triton Square IT Park, Chennai	89.89
14	Shiv Electricals	Sandwich (CU) Bus Trunking Air Insulated BBT ( CU)	Nirmaan Bhawan, New Delhi	85.00
15	Rohini Industrial Electricals Pvt. Ltd.	Sandwich(AL) Bus Trunking	S E Forge Ltd., Coimbatore	69.00
16	Subhash Projects & Marketing Ltd.- Kolkata	LT Emergency, Aux. Panels	Sawai-Madhopur Project	64.00
17	JSC Soemi, Russia	Air Insulated BBT(AL)	JSC SOEMI, Russia	62.00
18	ABB Faridabad	LT Swgr Package	Giral TPS	52.75
19	BHEL Noida	LT Swgr Package	Sural Lignite	41.95

### Adding Shine to Bhushan Energy

The Rs.11.64 crore order received from Bhushan Energy, is for LT panels and Busducts for 2x150MW Power Plant at Meramandali, Angul, Orissa. As the first order from Bhushan, this project is significant, as a testimony of our credentials and capabilities. They have preferred our ACBs, over competitive products.

This order was won against stiff competition from some giant multinationals and local panel builders who are their existing suppliers.

This order assumes even more importance as Bhushan Steel is on the course for a 5000MW Power Plant and 12 MTA Steel Plant at the same location. This would enable us to gain a foothold in the lucrative steel plant business, in the days ahead.

# C&S 2008

C&S  
Quarterly Newsletter  
JANUARY '08

## Power in Power Corridors

This order marks yet another dimension to our capabilities and the acceptance of our products in the mission-critical applications of the power corridors of India. Our project division had secured this order from CPWD. After overcoming stiff competition from numerous reputed brands, C&S Group succeeded in bagging this prestigious order for augmentation of electrical sub-station at North Block and South Block. This sub-station feeds power to critical departments like PMO, Defence, Finance, Home and other Ministries of Government of India.

The work order is for augmentation of a sub station with 2000KVA/11/0.433KV Transformer for North Block, New Delhi. The scope of work includes providing, installation and commissioning of 2000KVA/11/0.433KV dry type cast resin transformers, LT Panels, Bus Trunking, LT Cables, earthing work & safety equipment, etc.

Another work order for upgradation of electrical sub station including HT equipment, Transformer, LT panels etc. at South Block, New Delhi. Its scope of work included providing, installation and commissioning of 2000KVA/11/0.433KV dry type cast resin transformers, LT Panels, Bus Trunking, HT Panels, LT Cables, earthing work & safety equipment, etc.

It is a well-known fact that quality and reliability of product is of prime importance in such applications. By securing this order C&S has once again proved that it is one of the best in the field of electrical controls, switchgears and power management products.

Partial inspection of the above work has begun and work will be completed by April-May 2008 - well before the date of completion, stipulated in the tender.





## Protection Coordination

The selection of switchgear ensuring suitable discrimination between upstream & downstream is most important and plays a crucial role in ensuring continuity of service in a given electrical network.

The primary purpose of a circuit protection is to prevent damage to series-connected equipment and also to minimize the area and duration of power loss.

The first consideration is whether an air circuit breaker or moulded case circuit breaker is most suitable and the next is the type of system to be used. The major two types are: Discrimination and Cascading .

### Discrimination

Main objective of discrimination is continuity of service. Discrimination implies co-ordination of the operating characteristics of two or more over current protection devices in such a manner that fault appearing at a given point in a network is cleared by the protection device installed immediately upstream of the fault, and by that device only. According to IEC60947-2, the discrimination can be defined as follows:

#### Total discrimination (total selectivity):

Over-current discrimination where, in the presence of two over-current protective devices in series, the protection device on the load side affects the protection without causing the other protective device to operate.

#### Partial discrimination (partial selectivity )

Over-current discrimination where, in the presence of two over-current protective devices in series, the protection device on the load side affects, the protection up to given level of over-current, without causing the other protective device to operate.



#### No discrimination (No selectivity )

In case of a fault, main and branch circuit breaker open.

The primary purpose of discrimination in an electrical distribution network, is to clear the fault immediately on its occurrence by the device closest to the location of fault. It must ensure that only the faulty section is isolated and healthy circuits are not isolated due to fault in other feeder or circuit. Therefore, safety is combined with continuity of service and also fault is easily located.

### Methods to Apply discrimination

There are various methods to achieve discrimination. Improving discrimination normally comes down to restraining tripping of upstream as opposed to the circuit breaker downstream. The same can be achieved by following methods:

1. Current discrimination: Creating difference between the magnetic thresholds .
2. Time discrimination: Using time delay by tens of hundreds of milliseconds tripping of upstream breaker .Frequently used for circuit breaker with device of utilization of Category B like ACB .
3. Energy-based discrimination: Using more unique discrimination method by detection of number of current waves or form of these waves. This solution consists of using more advanced trip criteria other than just the values of time and current . This technique is mostly used with device of utilization of Category A like MCCB . However MCCBs are required to be very fast acting and exceptional current limiting devices in order to use this method .This method allows one to achieve Total discrimination between upstream & downstream breakers.

**Winbreak2 MCCB uses this technique to offer total discrimination between upstream and downstream MCCB and the suitable selection table is available in the technical catalogue.**

4. Zone selective interlocking (ZSI): This method employs transmission of data between the trip units of the circuit breakers at the various levels. The operating principal can be described as :
  - A trip unit detects the fault and then sends the signal to upstream breaker which applies the set time delay and ignores its present short-time and/or earth fault delay and clears the fault with no intentional delay.
  - The trip unit of breaker located immediately upstream of short circuit does not receive any signal and thus reacts immediately.

Thus, ZSI is a system designed to reduce stress on electrical system components during short circuit or earth fault conditions. This also reduces the tripping time and damages caused by fault and interferences to the power supply system.

**C&S Winbreak 2 MCCB with ETM release & AH series ACB with new Micropro Multipurpose microprocessor offers this unique feature as optional choices.**

Selection of type of discrimination in an electrical network depends on the type of devices and location in the installation. Different methods can be combined between two devices, in order

to obtain the best availability of electrical energy .

### Cascading

Cascading is an important method to achieve superior results with considerable savings due to reduced requirement of devices used downstream of an electrical network . It is used to enhance savings and simplify selection of protection devices by using breaker with standard devices. This method provides enhanced breaking capacity with a breaker placed downstream of a limiting breaker. The current limiting breaker thus helps the breaker placed downstream by limiting short circuit current. This technique can be extended to several consecutive devices even if in different feeders, but all breakers must be installed downstream of current limiting circuit breaker .



Standards permit use of this technique , on condition that the amount of "let through" energy by limiting the breaker is greater than that which all downstream breaker and components are able to withstand .However ,standards specify that the upstream device must have breaking capacity greater /equal to assured short circuit currents at the installation point. Therefore, for downstream breaker ,breaking capacity (cu )to be considered as the Icu enhanced by co-ordination.

Installation of single limiting CB results in considerable simplifications and saving for the entire downstream installation:

- Simplified SC current calculations
- Simplification of choice of devices downstream using manufacturer cascading table
- The use of lower duty switchgear & appliances thus lower cost.
- Space saving since light duty equipment generally is less voluminous, thus again saving.

**WINbreak 2 MCCB provides superior performance and its special shape & materials selected, produce repelling magnet power that pushes the contacts apart in a fraction of sine wave under short circuit condition and thus these MCCBs used in cascade-rated system, allow the use of lower interrupting circuit breaker downstream, which leads to low cost of installation.**