

News



e=CS²
Quarterly
Newsletter
1ST QUARTER '08

Our 10KA MCB range, ready to roar.

The C&S WINtrip MCB is an indigenously designed state of the art high performing Thermal Magnetic current limiting device with the ability to disconnect short circuits up to 10KA. The range is available in trip types B,C and D, for 1P, 1P+N, 2P, 3P & 4P configurations.

All operating mechanism and metal components of the WINtrip circuit breaker are specially treated for high self lubrication leading to repeat accuracy during service life. The MCBs confirm to Standards: IEC60898-1995 and IS 8828-1996 and stand guaranteed for optimum performance.

WINtrip breakers are duly tested for endurance and thermal calibration before release. We offer our customers value-engineered products fully equipped for par excellence performance. The ultimate aim of C&S WINtrip breakers is to provide total protection, energy saving and convenience. WINtrip breakers are manufactured at the newly laid fully automated Haridwar plant managed by highly experienced engineers.



Landmark Orders Executed

We achieved the landmark of being the only manufacturer of 660 MW Isolated Phase Busducts in INDIA with the execution of the following contracts for NTPC.

- 1 Executed the supplies of 24 KV, 20500 Amps Generator IPBD for 3 x 660 MW SIPAT Super Thermal Power Project of NTPC, the first super critical Power Plant of 660 MW in India with the generators supplied from Power Machines, Russia. Turbine from LMZ, Russia and Super critical boiler from Doosan, Korea...

CONTD on p 3.



660 MW Busduct testing at KEMA, Netherland

New products from C & S's research & development and engineering floors

Intelligent Motor Protection Relay

Continues to offer economical & comprehensive range of motor protection relay with Analog and Metering model & now includes a multipurpose intelligent motor controller which offers communication with in-built MODBUS.

This offers complete protection to motor providing complete safety of motor against Over current, Under current, Negative phase, Phase loss, Locked Rotor, Unbalance & Earth fault or Short circuit. Different functions can be selected from one device, e.g. Direct

starter, Reversing starter, Start delta and reactor/invertor starter.



circuit breaker downstream, which lead to low cost. Winbreak 2 CD range circuit breakers are available in one frame in rating from 16A to 160A and CS range in three frame sizes from 40A to 800A and in very high interrupting capacity available in 3 & 4 pole version.

While meeting IS13947-2/IEC60947-2 service and Interrupting rating, these MCCBs provide unmatched flexibilities by employing a wide variety of trip units including Adjustable thermal-fixed magnetic, Adjustable thermal adjustable magnetic, motor protection and also switch disconnecter apart from Standard microprocessor based electronic and Multipurpose electronic release having wide selection and adjustability of Overload, Short circuit, Instantaneous & Earth fault / leakage protection with Ammeter, communication, Zone selectivity as optional.

These multipurpose releases also provide pre-alarm indication and trip reason through LED. Standard calibration is at 40 degree C with optional 55 degree C factory calibration available for application where higher ambient temperatures are encountered.

Chorus Range of Modular Switches

Chorus is an innovative & perfectly integrated electrical system. Each piece is the result of in-depth design research, the harmony of the shape, & the fusion with

cutting edge materials. As in an orchestra, each of its elements is original & distinct, capable of creating harmony alone, combined to others to create perfection. The concord of elegance & innovation, Chorus is a creative synthesis, a technological symphony, which has been designed to embellish the surroundings & satisfy your every aesthetic, functional & security need.

Chorus has won several design awards globally, since its launch in Italy in the beginning of 2007.

Chorus accessories are available in 3 finishes – white, black and platinum. Chorus



And above all, this product offers complete information like ammeter function and also faults analysis and fault value storing.

Winbreak 2 MCCB

Winbreak 2 Circuit breakers provide superior performance in a compact housing using innovative technology with a double break contact system to speed up the switching process. In the event of short circuit, the special shape & materials selected produce repelling magnet power that pushes the contacts apart in a fraction of a sine wave. These circuit breakers thus used in cascade rated systems, allowing the use of lower interrupting



plates come in 3 designer shapes – One, Art and Lux and in over 20 colors and exclusive materials like glass, stone, metal, cork and leather.

Chorus solutions include single point control panel, desk top door entry system, sensor based switching, emergency lighting, gas detection systems, intercom system, LED indicator switches, programmable climate control and overload/leakage current protection. Chorus also gives wireless/remote solutions using RF technology and GSM technology.

Chorus is a symphony of luxurious designs, sensible conveniences and state of the art technology. Chorus automation is based on C-BUS technology and integrates the electrical and security systems of a house, providing comfort and safety in one package. Further, Chorus employs flexible architecture and its functionality can be enhanced as the needs of the house change.

High Performance O/C and E/F relay with Oscillographic Recording CSI3

- Individually Selectable Characteristics for Phase and Earth Faults:
 - Definite Time Over-current and Inverse Time Over-current.
- Selectable inverse time characteristics according to BS 142 and IEC 255-4:
 - Normal inverse
 - Very inverse
 - Extremely inverse
- Extremely wide setting ranges and fine steps for current and time settings
- Continuous self-supervision of software and hardware
- Wide operating ranges of the supply voltage (Universal Power Supply)
- Oscillographic Recording of Pre & Post fault upto 40 cycles.
- Last 10 Fault Recording with time stamp.
- RS485 communication port on rear panel
- RS232 port on the front panel
- Circuit breaker failure protection



Single board Automatic Mains Failure Relay Type EC-RXA

- Microcontroller technology
- Wide range of auxiliary supply: 7V to 35V
- Withstands a dip to zero volts of auxiliary supply for 0.1 second
- Flush mounting
- 3- phases mains supervision
- Supervision of generator voltage
- Isolated inputs and outputs
- Parameter setting using DIP switches
- Two modes: Auto and Manual
- Wide array of timer circuits for start delay, stop delay, re-cooling time, mains restoration etc.
- Eight lamps for annunciation
- Eight digital inputs
- Six solid state outputs



news about new

C&S Gewiss Launches New HID lamps

HID Sodium Vapour Lamps

SON-E / SON-T and SON-T Extra Lumens lamps 70 to 1000W "ISI" marked.

The SON lamp is a High Pressure Sodium Vapour lamp with energy saving characteristics. Ideally suitable for reducing consumption in both indoor & outdoor applications. These lamps are used widely in industries, warehouses, godowns, airports, highways, streets, flyover junctions, flood lighting, exhibitions or construction sites, shop floors etc. while providing benefits of high efficacy, long service life, reliability and fairly good colour rendering index.

Standard SON Elliptical & Tubular lamps with a luminous efficacy of upto 120lm/W. SON lamps are cost efficient and best suited for use on highways and in large areas which need continuous lighting for extended periods of time.

Extra lumens SON Tubular lamps with luminous efficiency of up to 130 lm/W and longer lamp life than standard SON lamps. Ideal for new installations, offering low installation and running costs by providing more/required light from less no of points. In existing installation, more light can be achieved keeping the electric consumption same.

These lamps are used widely in industries, urban streets, architectural flood lighting, open plan offices, shops exhibits, museum & galleries, sports complexes, hotel lobbies & sign boards.

Advantages :

- Very high efficiency hence highly energy efficient.
- Long life and low lumen depreciation.
- Very short run-up time and quick re-strike.
- An economical alternative to high pressure mercury vapour and metal halide lamps.
- Golden White light emitted by lamp gives a warm appearance and better visual comfort.
- SON-T lamps are ideal for precise optical control.
- Ideally suited for fog, dust and rainfall conditions.

HID Metal halide Lamps

MH-E, MH-T & MH-BT

Single ended E27/E40, Double ended Rx7s and Single ended G12

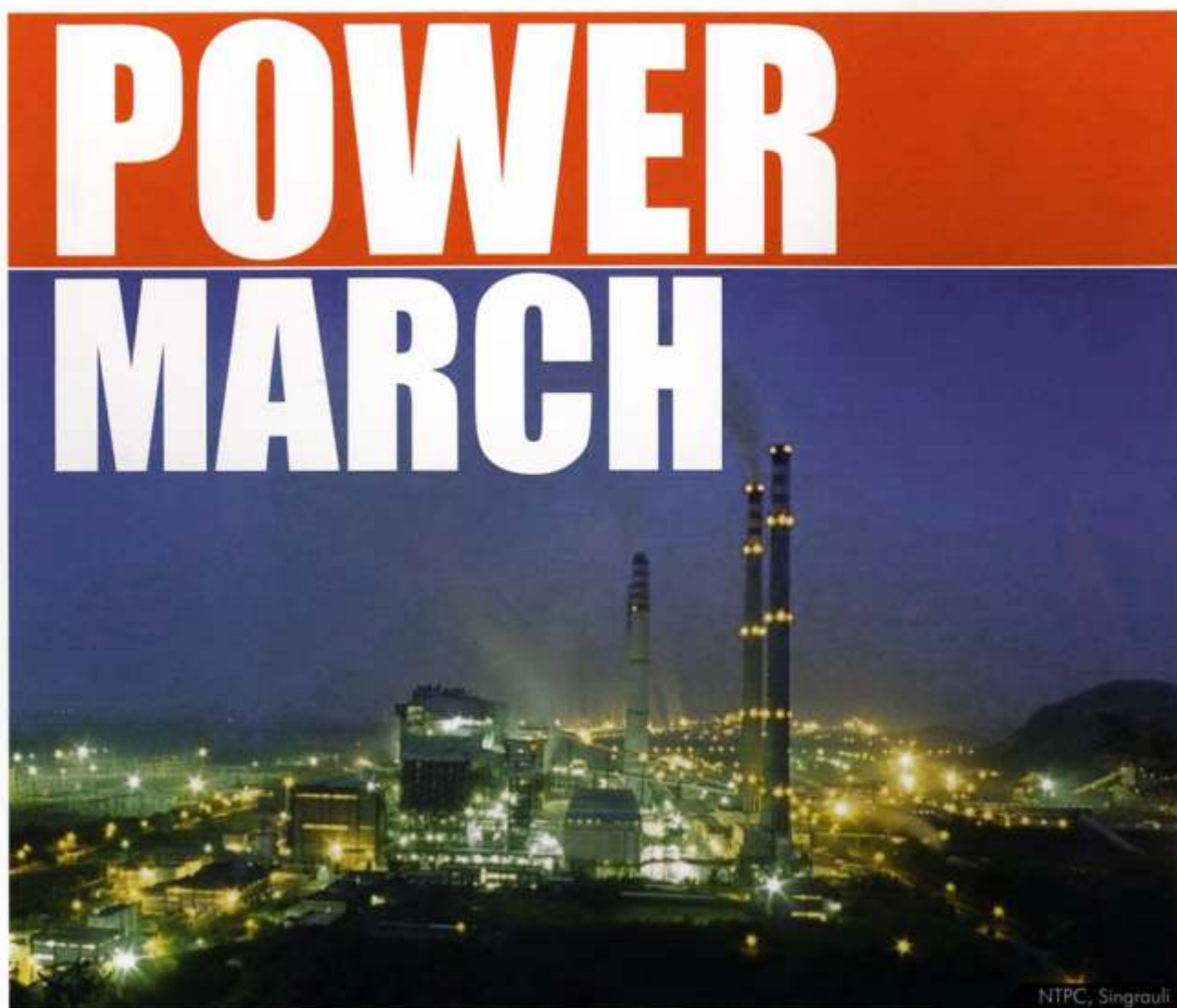
70 to 1000W Day white (DW), Neutral white (NW) & Warm white (WW) in Colour temperatures 4000 K to 5200 K

HID metal halide lamps Superior light output, excellent lumens maintenance, free from UV radiations, good colour rendering CRI > 70 shows true life colours. Double ended MHIT lamps facilitate beam controls because of their compactness and precise geometry. Blue/Green/Red coloured lamps are also available in 150W DE (Rx7s) and 400W Tubular version.



Advantages :

- High efficacy hence energy efficient.
- Long life and low lumen depreciation.
- High colour stability over the entire life time.
- An economical alternative to high pressure mercury vapour lamps.
- Choice of colour temperature gives better appearance and visual comfort.
- DE & G12 lamps are ideal for precise optical control.
- Special Quartz jacket absorbs harmful UV radiations.



NTPC, Singrauli

C&S is playing an important role in the building of the Indian power sector. Its Busduct division, and LV Switchboard division have served and continue to serve our nation's power plants, with pride.

major orders executed during the year 2007

S. No.	Client	EQUIPMENT	Project	Order Value (Rs. in Lacs)
1	Lanco Infratech Ltd., Hyderabad	LT Switchgear Package	2x300 MW Amarkantak TPS, Korba, Chattisgarh	1241.00
2	Reliance Energy Ltd., Mumbai	LT Switchgear Package	2x300 MW TPS, Yamunanagar, Haryana	920.00
3	NTPC, Noida	LT Switchgear Package & LT Bus Duct Package	3x660 MW Super Thermal Power Project, Barh, Bihar	3100.00
4	Jindal Stainless Ltd.,	LT Switchgear Package & LT Bus Duct Package	2x125 MW Power Plant at Duburi, Orissa	524.16
5	Gunnabo India Ltd., Mumbai	Annunciator & Starter Panels	ISRO Shri Harikota Range Project	45.26
6.	HPCL, Vishakhapatnam	LT Switchgear Package	VRCEP - HPCL Vizag Refinery Project	156.35
7	NTPC, Noida	24 KV, 205000A IPBD	3x660 MW Sipat STPS	1290.00
8	NTPC, Simhadari	24 KV, 19000A isolated phase busducts	2x500 MW STPP	850.00
9	Alstom Power India Limited, Gurgaon	LT Switchgear Package	UTRAN TPS	662.00

major orders booked during the year 2007

S. No.	Client	EQUIPMENT	Project	Order Value (Rs. in Lacs)
1	ABB Ltd., Faridabad	LT Switchgear Package	1x250 MW Suratgarh Project	582.00
2	BHEL Pem, Noida	LT Switchgear Package	2x125 MW Sural Lignite Power Plant Expn. Unit-5	512.00
3	Punj Lloyd Ltd., Gurgaon	LT Switchgear Package & Generator and MV Busduct	2x250 MW Chabra TPS, Rajasthan	1656.00
4	Alstom Power India Ltd., Vadodara	LT Switchgear Package	8x250 MW NHPC Subhansiri Hydro Power Project Arunachal Pradesh	1440.00
5	VA Tech Wabag Ltd., Chennai	PMCC, MCC, ASB & MLDB	Locl Panipat Naptha Cracker Project	140.00
6.	BHEL Bangalore	MCC & PDBs	Neelanchal Ispat Nigum Ltd. Orissa	88.00
7	Reliance / BSES Ltd., Delhi	Distribution Boxes	Distribution Boxes for Urban Electrification Project	290.00
8	NTPC	24 KV, 19,000A Generator Busduct & 11 KV/7.2 KV Busduct	4X500 MW Korba/Dadri/Farakka	1900.00
9	Sulamaniya, Iraq	Generator Busduct	4XFR-9E Machines of GE/BHEL	590.00

expanding export frontiers

C&S – India's largest exporter of industrial switchgear, continued to make strides in international business in 2007. Several new accounts were opened the world over. C&S entered the **Russian market** for the first time in a big way. C&S also signed a major brand labeling deal for its contactors with a fortune 500 company worth **US\$ 20 million**. It commenced supplies of its Switch Disconnectors & Switch Disconnector Fuse Units to the **worlds largest manufacturer of AC Drives** in Finland. Its contactors were exported to **China** for the first time for critical applications in Windmills and in Elevators. C&S won several prestigious projects for its busbar trunking, in the middle east and gulf regions. These included the **Dafna Residential Tower, Westbay 44 Tower**, and most prestigious **SHK Falak Twin Towers** in Doha, and the famous **Port Saeed** in Dubai.



To keep up with this growth C&S also invested in a brand new, state of the art **manufacturing facility in the Noida SEZ**, dedicated to serve our international customers.

C&S also won a prestigious supplier excellence award from the Fortune 500 – Eaton Corporation, USA. The letter announcing the award read as follows

"There are a select few of our suppliers who have embraced a habit of excellence.

Evidence of this is their differentiated performance and superior productivity.

This elite group

represents the top 0.05% of Eaton's supply base! **We are pleased to announce that C&S has achieved such outstanding status.**

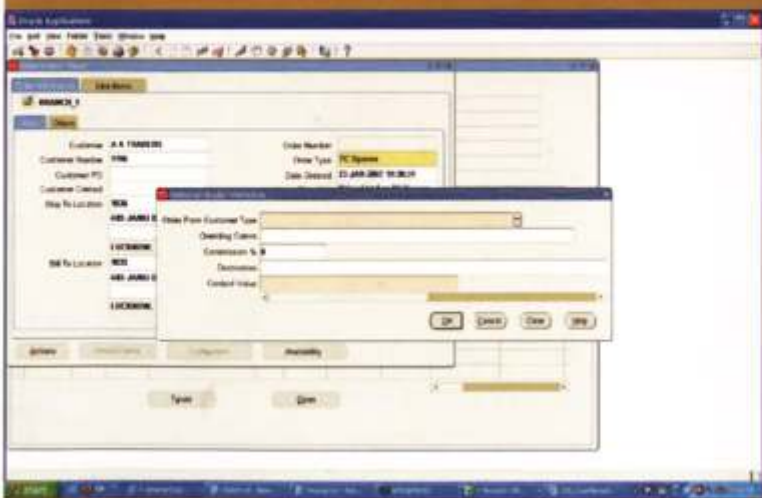
Congratulations! We place the utmost importance on the partnership we have with your company, and as a result wish to present you with the Eaton Corporation's Premier Supplier Award."



Assembly line at SEZ, Noida

Information on finger tips

ORACLE



C&S has invested nearly 2 crore rupees in the state-of-the-art Oracle ERP system. This system will benefit our dealers and end customers in numerous ways. They shall be able to see real-time information on order status, credit check, documents & after-sales service status. Moreover it will allow C&S to function in a more efficient & effective manner overall. The ERP system ensures C&S is ready to cope with the tremendous growth in operations, product lines and number of employees, by helping to manage the logistical complexities involved.

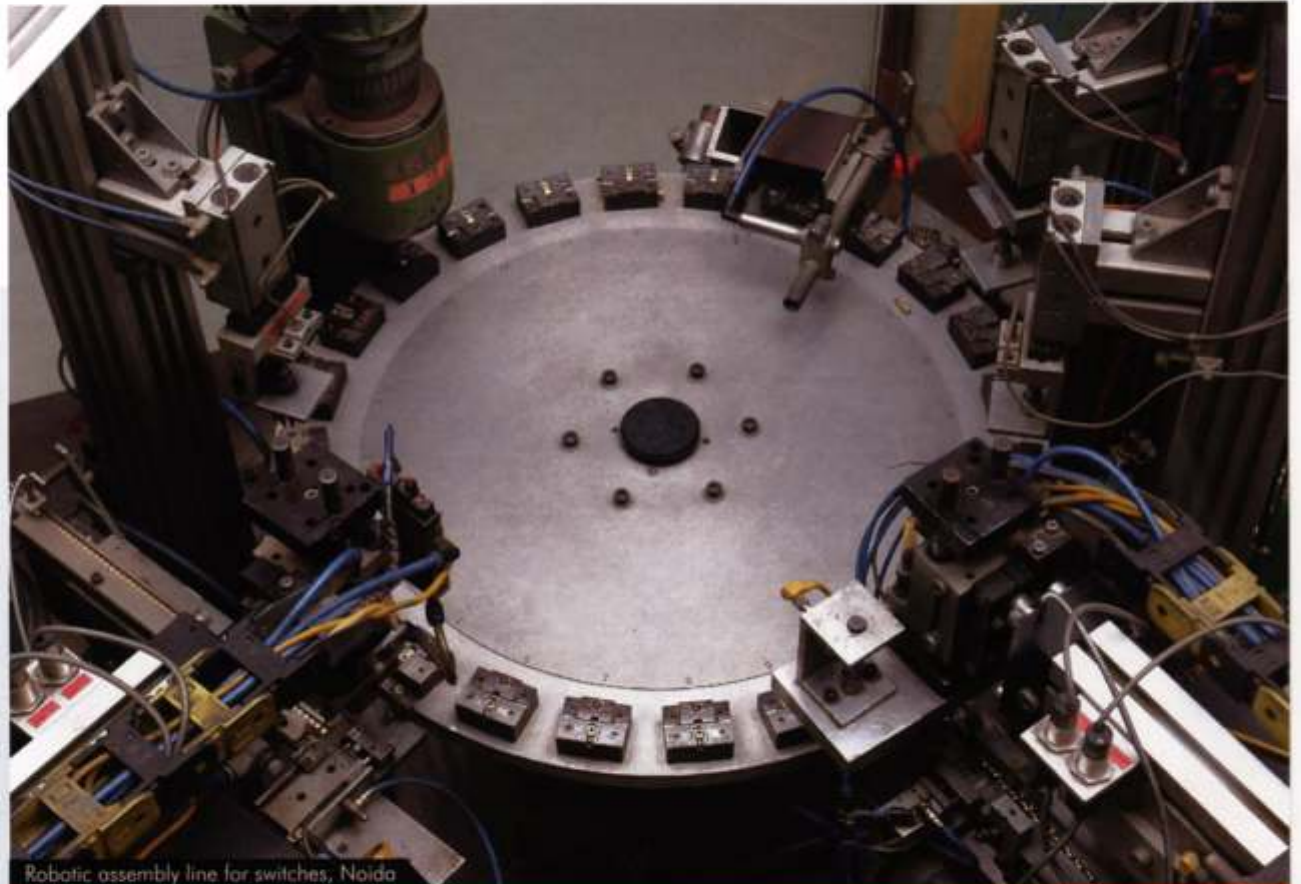
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Landmark Orders Executed

In 2007, we have successfully carried out the type tests for short circuit current rating of a very high value of 267 KA for 1 second with a peak current of 794 KA for Delta Busduct at KEMA-NETHERLANDS.

2 Quiet proudly we also wish to inform that we have executed the supplies of IPBD's for India's second largest 3 x 660 MW Power Plant at BARH Thermal Power Plant located near Patna-Bihar.

The C&S LV Switchgear component manufacturing facilities in Noida have been enhanced considerably in 2007 in capacity as well as in manufacturing technology. A completely **automated magnet manufacturing machine** was imported from Switzerland and has now been installed. This has resulted in a 5-fold increase in productivity in contactor magnet manufacturing. C&S also installed several mechanical measurement machines including a Mitutoyo 3D **Coordinate Measuring Machine (CMM)**. A completely new line of **computerized overload relay calibration benches** has been installed and also 100% computerized test benches of air circuit breakers has been installed. A **25KA source** for ACB calibration has also been installed. Several load banks with computerized control have been added for



Robotic assembly line for switches, Noida

facility upgrade



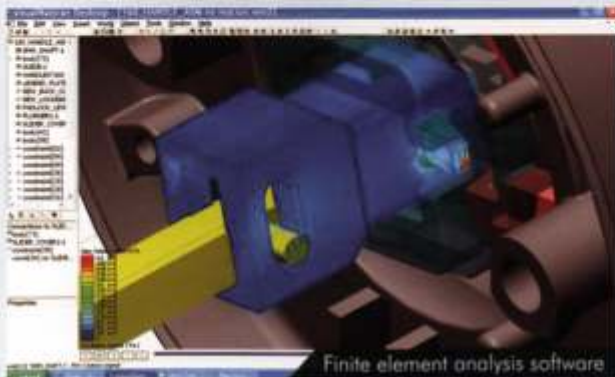
CNC coil winding machine (Meteor, Switzerland), Noida



Online grinding machine (IMATCC, Switzerland), Noida



ACB Magnetic trip analysis on 25 KA current source, Noida



Finite element analysis software

continuous electrical endurance testing of all products. Almost 20 new sophisticated **CNC injection and compression molding machines** have been added. The toolrooms have been further strengthened with the addition of 2 new EDM wire cut machines from **Sodik, Japan**. Most molds have been converted to hot runner / runnerless type. 6 state of the art **CNC coil**

winding machines from METEOR, Switzerland have been installed. These are only some highlights, in addition to these, hundreds of other jigs, fixtures, modern assembly benches, printing machines and test and calibration equipment were added to the facilities in 2007. R&D facilities were also upgraded with new software for engineering analysis



New CNC compression moulding machine, Noida

C&S makes big strides in Uttarakhand



BBT Paint shop, Haridwar

The C&S group already has 9 manufacturing facilities in the NCR region. Now C&S is expanding its manufacturing footprint into the state of Uttaranchal, in Haridwar, and in Rudrapur. More than **50 crores** has been invested in Uttaranchal, and the land occupied is around 25 acres.

In Haridwar C&S had already established some years ago, its manufacturing facilities for the C&S Gewiss range of modular plate switches, luminaires and industrial plugs and sockets. Now 3 additional facilities have been built in Haridwar, and a fourth one for Busducts is under construction.

HARIDWAR

Busbar Trunking:

As India's pioneer in busbar trunking systems, C&S's brand new facility in Haridwar for this product, has a capacity to produce **8 KM of busbar trunking per month**. This facility is equipped with sophisticated CNC machines for shearing,

punching and bending of sheet metal and also has a fully **automated five**

stages converzized spray

phosphating

process to

ensure

proper

cleaning & surface preparation of all galvanized sheet metal components to have the strong adhesion before subjecting to powder coating. Powder coating plant is specially designed to accommodate components of lengths upto 3 meters. Further, to achieve accuracy & higher productivity **semi automatic Laser cutting** is employed to cut the polyester insulation required for sandwich bustrunking.

Miniature Circuit Breakers:

C&S has also now inaugurated its state-of-the-art MCB, RCCB & DB manufacturing plant in the Haridwar complex. This facility has a range of hi-tech equipment for injection molding, assembly and testing and calibration. MCB manufacturing has commenced after thorough testing and ISI marking having been obtained.



CNC injection moulding machines (Demag) Haridwar



Sheet metal processing, Haridwar

powder paint coating plant with online spray phosphating system and advanced assembly/testing facilities to produce up to 12,500 Generating Sets per year together with associated Control Panels. The commercial production will start in February 2008. This plant comes under C&S's JV company - C&S Himoinsa Ltd which is a joint venture with **Himoinsa Spain**. Himoinsa S.L. founded in 1982 is the **world's 3rd largest** manufacturer of Generating Sets and Power equipment. The company is specializing in Silent Diesel Generating



Inside view of C&S - Himoinsa Plant, Rudrapur

LV Switchboards

The LV switch board manufacturing plant in Hardwar has been further enhanced with a complete fabrication and powder coating facility.

RUDRAPUR

In Rudrapur, C&S inaugurated in July, 2007 one of the largest Diesel Generating Set manufacturing units

in the country spread over a 10 acre plot of land with almost **1,50,000 sq.ft.** of covered area in the first stage. The plant is totally air cooled and houses the state-of-the-art **CNC sheet metal Turret Punch Press networked to Press Brakes from Amada**, Japan and a large **automated**



Totally computerized MCB magnetic calibration test, Haridwar

Sets – both silent and open skid types from 2.5 kVA upto 3000 kVA. A tie up for engines has been secured with **Ashok Leyland**, which through this arrangement also enters the power generating segment, for its engines in a big way for the first time.



C&S - Himoinsa Plant, Rudrapur

being a part of india's IT success



FLEX, Bangalore

C&S has made a remarkable stride in distribution, control and protection of electrical power in the IT sector in India.

A large number of projects have used C&S products, ranging from its busbar trunking, which has been used in practically every major IT project in the country, to its sophisticated MCCBs and ACBs with communication facility, and also its C&S Gewiss range of switches and sockets, and industrial plugs and sockets.

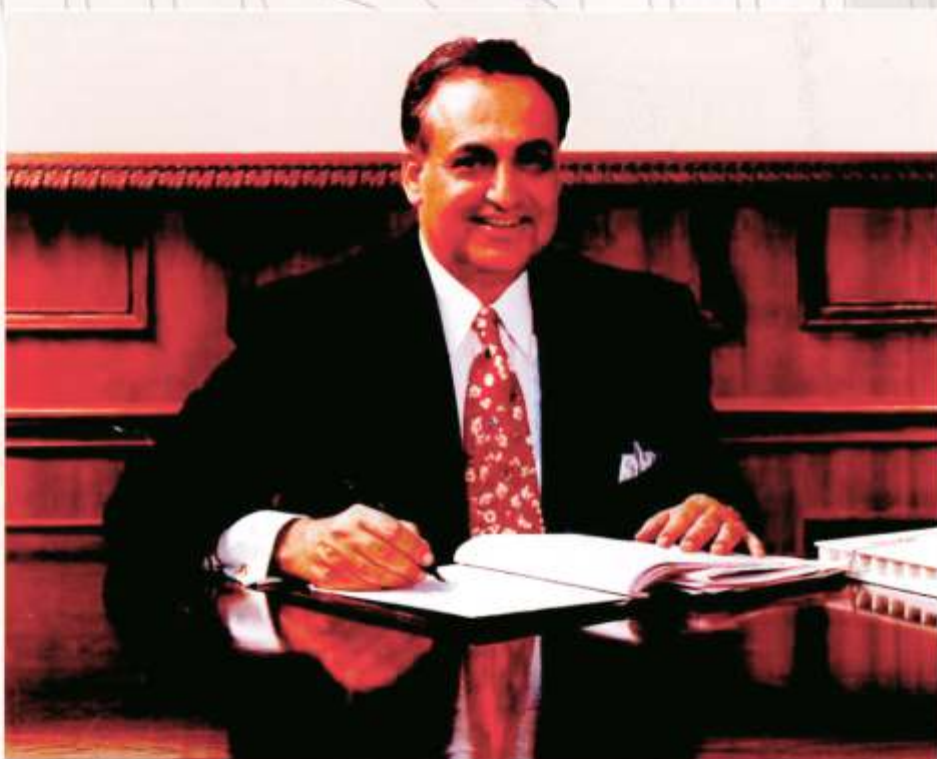
Some notable projects where C&S has supplied equipment have been

1. HCL Technologies, Noida
2. C-DOT, Delhi
3. Airtel data center, Delhi
4. ECCI technology park, Chennai
5. TCS, Bangalore
6. Phillips innovation campus, Bangalore
7. Ascendas IT park, Chennai
8. WIPRO Technologies, Pune
9. Dell Computers, Chandigarh
10. Polaris, Hyderabad
11. Satyam computers, Hyderabad
12. Astrong, Chennai
13. Perot System, Noida
14. Persistent systems, Pune
15. Cadance design center, Noida



Infosys, Bangalore

our vision & mission



Mr. R.N. Khanna, Chairman cum Managing Director, C&S Group

VISION

- C&S shall be the most trusted, respected and preferred brand, for electrical and electronic equipment that finds application in power generation, distribution, control and final consumption.
- In its major businesses C&S shall not only command a domestic market share ranging from 12% to 50% or more, but be known widely as the company "closest to its customers."
- C&S products shall be used to manage power in India's biggest industries, in its highest buildings, in its most critical infrastructure and in millions of its homes.
- The C&S name shall be recognized widely as a benchmark, and shall serve as a role model and an inspiration to other Indian engineering products companies.
- C&S shall be cited as a company that played an important role in making "Made in India" a label that is trusted and respected the world over.

MISSION

- To create a unique alchemy of outstanding products, operational excellence, path breaking customer service, and compelling marketing.
- To create and relish a vibrant workplace where employees are empowered, cared for, developed, and most of all, provided unlimited opportunity to discover their full potential.
- To continuously enhance our core technologies, and develop new world class technologies and products to expand our offering to customers.
- To consolidate and strengthen our position as India's largest exporter of Industrial power distribution and control equipment.
- To earn a healthy return on investment for the shareholders.
- To everyday experience, the sheer joy of delighting our internal and external customers, and to relish the thrill of participation in India's infrastructure boom.