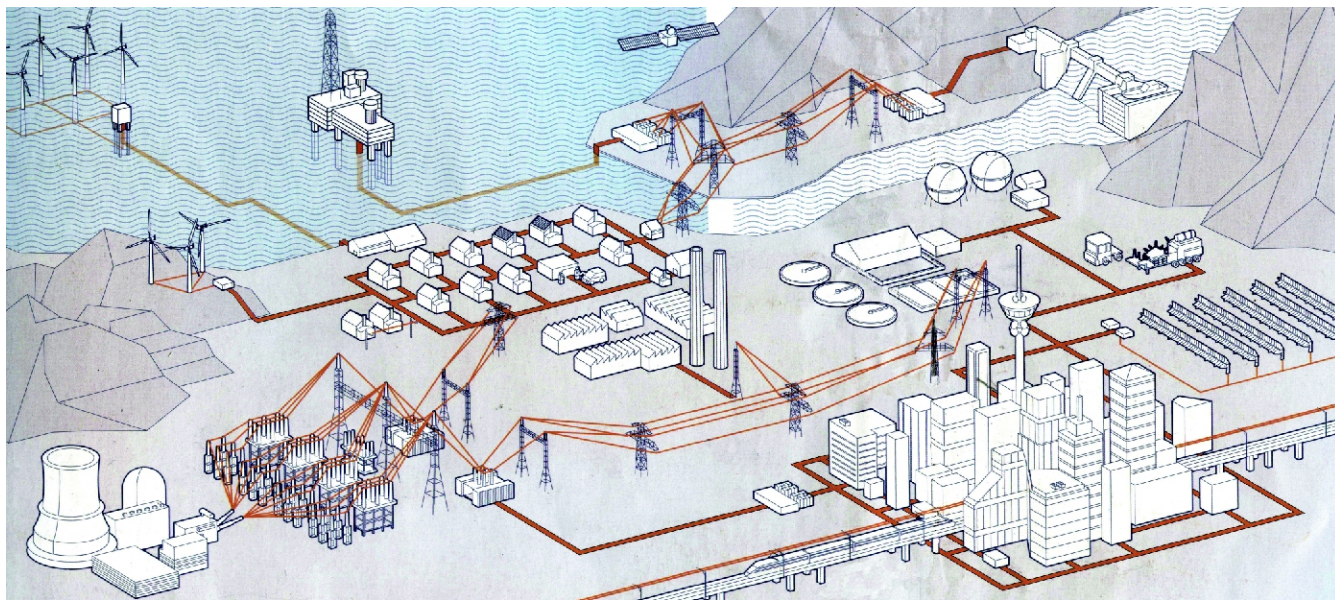


INSTRUMENT TRANSFORMERS

Right Choice for Metering and Protection of Power



- Outdoor, Oil Cooled Current and Potential Transformer upto 132KV voltage class.
- Oil Cooled Current and Potential Transformer combined upto 36KV voltage class.
- Epoxy Resin Cast Indoor Current and Potential Transformer upto 36KV voltage class.
- Low Tension Current and Potential Transformer.

Electricfield Company

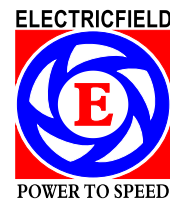
Works

75-81 Industrial Area,
Phase II, Gangyal,
Jammu-180010
Phone : 0191-2480272
Website : www.electricfield.in

Office

New Secretariat Road,
Jammu-180001
Phone : 0191-2578119
Telefax : 0191-2574844
e-mail : electricfield@hotmail.com

ISO 9001 Company





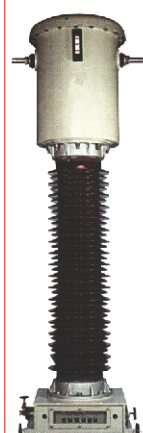
From the Desk of CEO

Company Profile



Sachdev A.P

“Electricfield Company” which emerged in Jammu (J&K State) was a professional electrical organization in the year 1968. Visualizing at the promising scenario at that point of time when the power requirement of state was partly generated through their own small hydro power house and mainly exported from Punjab, we embarked upon the journey of rendering the Professional electrical consultancy service and manufacturing in view of number of big hydro projects coming up in J&K state required diversified field of power equipments. As an Electrical Engineer having served most popular multinational company has gained in-depth experience of distribution and transmission of power equipment for a period of 12 years. As an independent entity while rendering consultancy service, we also started manufacturing small power equipments and got registered as a SSI Unit with District Industries Centre, Ministry of Industry and Commerce, Jammu in a small place to meet the urgent requirement of departments and local industries. Our quality of products was highly appreciated in whole of J&K state and was honored with prize of GOLD MEDAL by the honourable Chief Minister Jenab Sheikh Abdulla Sahib in the year 1977 Srinagar, J&K State.



We were encouraged by the senior vanguard engineers of J&K state of various departments to establish full fledged manufactured unit. Keeping in view the diversified requirement of electrical equipment we shifted to new factory at Gangyal Industrial Area in the year 1980 with a ground area of 24000 sq. feet but overall covered area of 40000 sq. feet as on today. We started manufacturing on regular basis equipment like Control and Relay Panel upto 220KV (Our Control and Relay Panel mounted with Meters, Relays and Other Control Gears are type tested IP 55 as per degree of protection as per IS 2147 by ERDA, Vadodara), Battery Charger AC/DC L.T. Switchgear Board, Voltage Stabilizer 230V to 33000 volts (10 MVA) with lowest input voltage, Instrument Transformers and Distribution Transformers and other associated products at various voltage levels. In appreciation of our performance for the manufacturing of quality products the Government of J&K State nominated our name for National Award to the Central Government of India. We were honoured for UDYOG PATRA Award by His Excellency Jenab Hidayatullah, Vice President of India in the year 1981.



In view of tough competition in the field of low voltage equipment, we once gain reemerged in J&K state to manufacture medium and high voltage Instrument Transformers upto 132 KV Voltage Level. The outdoor Instrument Transformers of 11 KV, 33 KV, 66 KV and 132 KV have been type tested by ERDA, Vadodara and CPRI, Bhopal as per IEC 44-1 and IEC 44-2 / IS : 2705/ IS : 3156. Electricfield has core competence in the development, design and manufacturing of Instrument Transformers. To achieve the quality par at excellence Electricfield has world class Indian as well imported machineries and testing equipments for in-house testing and inspection while the equipment is being passed by the customer. To make our presence nationally the National Small Industries Corporation Ltd. (A Government of India Enterprise) registered our organization vide their reference No.SIC/JMU/GP/18(22)81/06 dated 15-04-2009 for the manufacturing of various electrical equipments including Instrument Transformers (Current and Potential Transformer)

Our manufacturing activities include dry type Instrument Transformer epoxy resin cast ranging from 11 KV to 33 KV class, Current Transformer and Potential Transformer for metering and protection class of various class of accuracy and burden. The manufacturing of Instrument Transformer Outdoor, Oil Cooled and epoxy cast resin was started in the year 1992.



To meet the increasing demand of Vacuum Circuit Breaker Panel of 11 KV Voltage System being superior in performance over oil cooled 11KV Circuit Breaker and 11 KV M.O.C.B. we also started manufacturing of 11 KV Vacuum Circuit Breaker Panel with all type of metering and protection system because of its reliability and minimum maintenance during the long time of operation. The Vacuum Circuit Breaker Panel manufactured by us are type tested as per IEC 62277-100, IEC 62277-200 / IS 13118 : 1991. There about more than 200 Nos. Vacuum Circuit Breaker Panels Manufactured by us are installed at various places in J&K state for the last more than two years. These are in satisfactory operation without any complaint. Since quality of product is strong, we have started selling our products outside J&K State as well as exporting to South Asian Countries.



ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION
(Accredited by the National Accreditation Board for Testing and Calibration Laboratories, Govt. of India)
ERDA Road, Mahapuri Industrial Estate, Vaidhalla-580 010, India.
EPAIX : +91 (0265) 2642942, 2642964, 2642377, 3043128 / 29 / 30 / 31 / 33.
Fax : +91 (0265) 2636382
E-mail : erda@erda.org
Web : http://www.erda.org



TEST REPORT

SHEET 1 OF 9

NAME & ADDRESS OF CUSTOMER ELECTRICFIELD COMPANY 75-81 INDUSTRIAL AREA PHASE-II GANGYAL, JAMMU-180010	REPORT No.: LSCS/033 DATE: 02.06.2010 CUSTOMER REF. NO.: 277-03/EC/2010 DATE OF SAMPLE RECEIPT: 15.05.2010 DATED: 15.03.2010 DATE OF TESTING: 17.05.2010 to 01.05.2010
SAMPLE DESCRIPTION 132KV CURRENT TRANSFORMER Rated voltage: 132kV, H.S.V. : 145kV, Ratio: 2000-1600-1200/1-1-1-1-1-1-1. Burden: 30/30/-/-/-/- VA No. of Cores: Six, Frequency: 50 Hz., Class: 0.2/5P20/PS/PS/PS/PS, Rated Insulation Level: 275kVrms/650 kVp Rated short time current & its duration: 40 kArms for 1 Sec. With 100 kAp. Further details as per sheet No. 3 OF 9	SAMPLE IDENTIFICATION ERDA IDENTIFICATION NO. LSCS-10-033/01 SERIAL No.: EFC/3/1316/10 TYPE: Outdoor, Oil Cooled DRAWING NO.: EFC/132KV CT/0004 EFC/132KV C.T./0003
TEST DETAILS Short time current test (Cl. No. 9.6)	TEST SPECIFICATIONS IS 2705 -1992
ENCLOSURES: NUMBER OF OSCILLOGRAM : TWO NUMBER OF PHOTOGRAPH : ONE NUMBER OF TEST CIRCUIT DIAGRAM : ONE NUMBER OF DRAWINGS : TWO	
TEST WITNESSED BY: Mr. Apurva Shah. Mr. VINOD SACHDEV.	
REMARKS: The sample conforms to the requirement of standard for short time current test.	
PREPARED BY <i>Sachdev</i>	CHECKED BY <i>Vinod</i>
APPROVED BY <i>MS</i>	

TE 0447208



3



1



2

(1) 300KV, 250mA, High Voltage Test Set.

(2) Partial Discharge Measurement/Testing Equipment.

(3) Test Bench with Measurement of Automatic Ratio Error and Phase Error (Accuracy) complete with input measuring Instrument (Voltage, Current) and Burden Boxes of Appropriate, Voltage Current Ratios and Control System.



High Vacuum Controlled Heat Arrangement Chamber with Built in Duty Vacuumed Oil Filling in Instrument Transformer

PROFILE OF OUTDOOR, OIL COOLED, INSTRUMENT TRANSFORMERS

Outdoor, oil cooled, Current Transformers:

Current works on conventional electromagnetic transformer principal and used to transformer high voltage line to low standard value. The primary winding consists of copper material using primary terminal P1-P2 housed in welded tank. The Current Transformers are available in live tank as well as dead tank. The primary winding of designed turns and cross section is applied on the insulated gut. The primary winding ends are crimped for the best electrical contact and high mechanical strength. The voltage range is 11KV/33KV Combined CT/PT as well as Single Unit of 11 KV, 33 KV, 66 KV and 132 KV unearthed system (both oil cooled system).

The secondary winding of CT is prepared by winding number of Ampere turns with copper conductor suitable insulated on high grade non aging CRGO silicon steel torodial core. Major insulation of uniform thickness is applied on the torodial core with winding prepared Kraft insulating paper and tapings. This insulation is capacitively graded for voltage control to ensure uniform electricfield distribution and adequate safety. The gut is then dried in autoclave at control temperature and vacuum for certain period of time to remove the moisture. The primary and secondary terminals of CT are lowered in the tank assembly. With assembly of CT including bushings, oil is injected from the oil impregnation plant under vacuum at preferable slow motion. The CT is tested for routine acceptance tests. The CT can be provide with several metering and protection winding of desired accuracy class knee point voltage at the desired exciting current and winding resistance at 75° centigrade.

Technical Specification for Current Transformer

Sr No	Particulars		Unit of Measures	36 KV			72.5 KV			145 KV		
1	Type			1	2	4	1	2	4	1	2	4
2	Applicable Standard			IS : 2705 / 1992								
3	Highest System Voltage		KV	36			72.5			145		
4	Nominal System Voltage		KV	33			66			132		
5	Insulation Level		kV/kVp	70 / 170			140 / 325			275 / 650		
6	Frequency		Hz	50 or 60			50 or 60			50 or 60		
7	Short time (Thermal) Current Rating	1 Sec 3 Sec	kA/s	-	-	-	-	-	-	-	-	40
				-	-	25	-	-	25	-	-	-
8	Short time (Thermal) Current Rating		kAp	62.5			62.5			100		
9	Rated Primary Current (Max)		A	1200	1000	800	125		62.5	2000	1600	1200
10	Rated Secondary Current		A	1/1/1A			5/5/2.89			1/1/1/1/0.57		
11	Burden and Accuracy Class		VA/Class	30 / 0.2			30 / 0.2			30 / 0.2		
12	Type of Construction			Live Tank Bar Primary			Live Tank Bar Primary			Dead Tank Bar Primary		

OUTDOOR, OIL COOLED, VOLTAGE TRANSFORMERS

Voltage transformers are used to transform high voltage system to low measurable value. The basic constructions of inductive voltage transformers have number of primary turns of super enameled copper of high conductivity on a former using automatic V.T. winding machine with insulation of various form and sizes with inter layer is provided suitable for oil impregnated paper. The high voltage winding is placed on the low voltage winding and assemble over a closed iron core maintained at ground potential. The V.T. can be provided with several metering and protection winding and can be designed to provide any desired voltage output from the secondary winding. The secondary tap can be used to obtain multi ratio secondary voltage output.

The high voltage lead is brought to the bottom tank of the V.T. at ground potential. Uniform potential gradient is obtained along with bushing by means of contoured electrodes. High quality Kraft paper is used. The paper insulation is dried under heat and vacuum and then impregnated with oil to achieve the excellent insulation as well as aging properties. The fully assembled V.T. are dried and oil filled under vacuum in evacuated heating chamber.

Technical Specification for Voltage Transformer

Sr. No	Particular	Unit of Measure	36 KV (V. T : 36-70-170)			72.5 KV (V. T : 72.5-140-350)			145 KV (V. T : 145-250-650)		
1	Type		1	2	4	1	2	4	1	2	4
2	Applicable Standard		IEC 60044.2 / IS : 3156			IEC 60044.2 / IS : 3156			IEC 60044.2 / IS : 3156		
3	Highest system voltage (Um)	kV	36			72.5			145		
4	Nominal system voltage (Un)	kV	33			66			132		
5	Insulation Level	kV/kVp	70/170			140 / 350			275 / 650		
6	Frequency	Hz	50 or 60			50 or 60			50 or 60		
7	Rated Voltage Factor		1.2 Continuous / 1.5 for 30 Sec 1.2 Continuous / 1.9 for 30 Sec								
8	Rated secondary voltage	V	100,100/?3,110,110/?3			100,100/?3,110,110/?3			100,100/?3,110,110/?3		
9	Burden & Accuracy Class	VA/Class	50/0.2 100/0.5	100/0.2 200/0.5	200/0.2 500/0.5	50/0.2 100/0.5	100/0.2 200/0.5	200/0.2 500/0.5	50/0.2 100/0.5	100/0.2 200/0.5	200/0.2 500/0.5
10	Rated Thermal Burden	VA	250			500			1000		
11	Total (Min) Creepage Distance	Mm/kV	25 31			25 31			25 31		
12	Porcelain Colour		Brown / Gray			Brown / Gray			Brown / Gray		
13	No of Windings		2			2			3		



- (1) Epoxy Cast Mixing Plant with Vacuum System
- (2) Oil Filtration Plant with Storage Tank under Vacuum



Product

Epoxy Resin Cast Current and Voltage Transformers for Medium Voltage

“Electricfield Company” manufactures indoor type epoxy resin cast current and voltage transformers for stepping down the current and voltage to the measure value. The standard values of secondary current are 1 amp or 5 amps with different class of accuracy and burden. Similarly the standard voltages are 110V and 110V/ $\sqrt{3}$ with different class of accuracy. The current and voltage Transformer together known as Instrument Transformer. The high voltage range is on the primary side for current and voltage Transformer start from 11KV, 22KV and 33KV.

The constructional feature of the Current Transformer is build with CRGO lamination in the shape of torodical core duly insulated secondary wounded and then wound with insulated sheet thick enough to meet the requirement of system voltage. After completer insulation with primary and secondary winding, it is casted with epoxy resin in prefabricated mould as per shape / design required. The voltage transformer depending upon single phase one unit or 3 phase single unit are wound with insulated sheet of appropriate thickness as per system voltage requirement. The voltage transformer coil primary and secondary epoxy resin casted in prefabricated mould without insertion of yoke of CRGO core. The entire curing of casting instrument transformers is done in HOT CURE SYSTEM with full Vacuum before mixing and after drying.

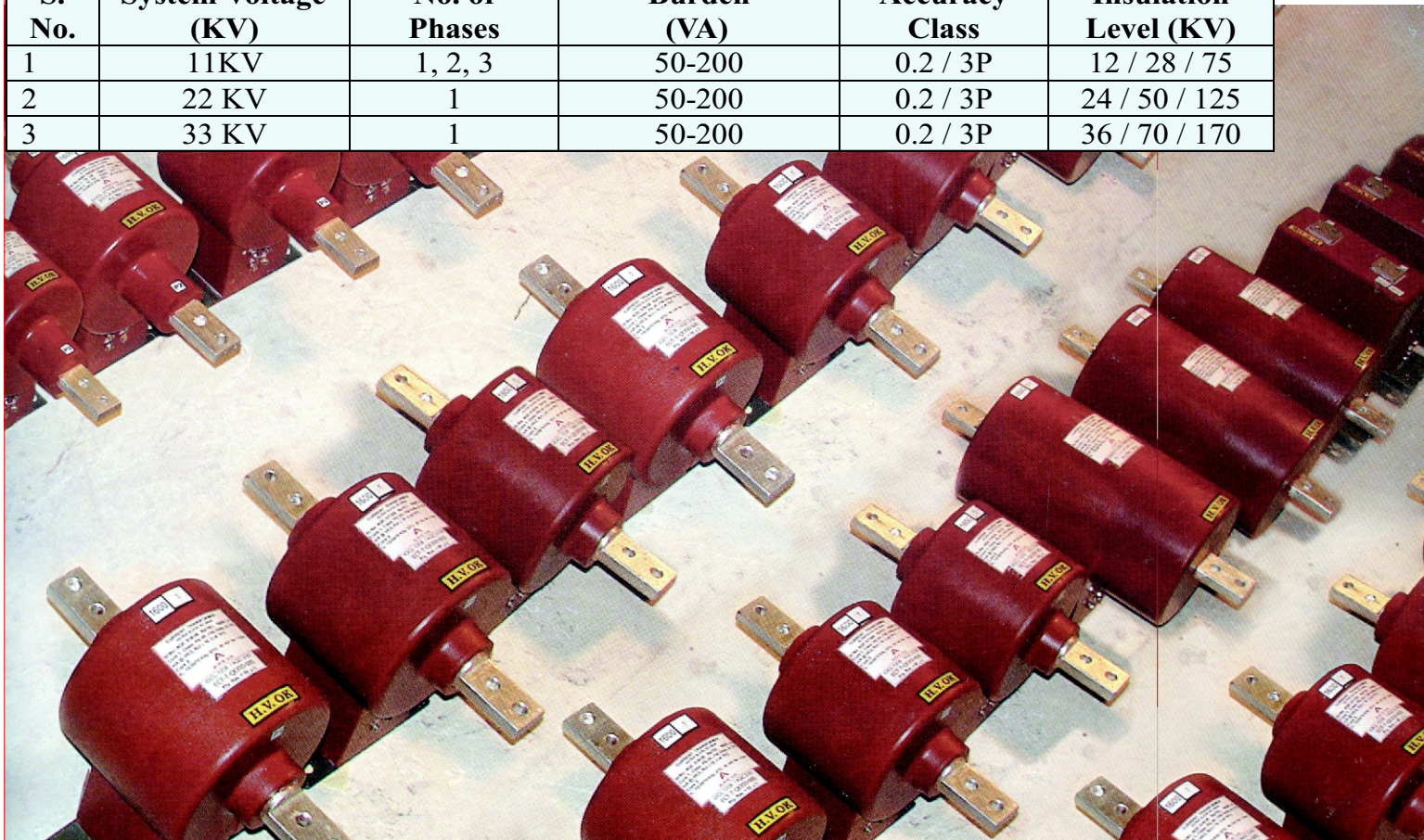
Technical Specification for epoxy resin cast Current Transformer

S. No.	System Voltage (KV)	Secondary Ratio	Highest System Voltage (KV)	Current Amps	Accuracy Burden	Insulation Level (KV)
1	11KV	1A or 5A	12	10-2000A	0.2 to 1.0 5VA to 30VA	28 / 75
2	22 KV	1A or 5A	24	10-2000A	0.2 to 1.0 5VA to 30VA	50 / 125
3	33 KV	1A or 5A	36	10-2000A	0.2 to 1.0 5VA to 30VA	70 / 170

Note: Various indoor models have been tested for fault level upto 31.5 KV for 3 Secs.

Technical Specification for Epoxy resin cast voltage Transformer

S. No.	System Voltage (KV)	No. of Phases	Burden (VA)	Accuracy Class	Insulation Level (KV)
1	11KV	1, 2, 3	50-200	0.2 / 3P	12 / 28 / 75
2	22 KV	1	50-200	0.2 / 3P	24 / 50 / 125
3	33 KV	1	50-200	0.2 / 3P	36 / 70 / 170



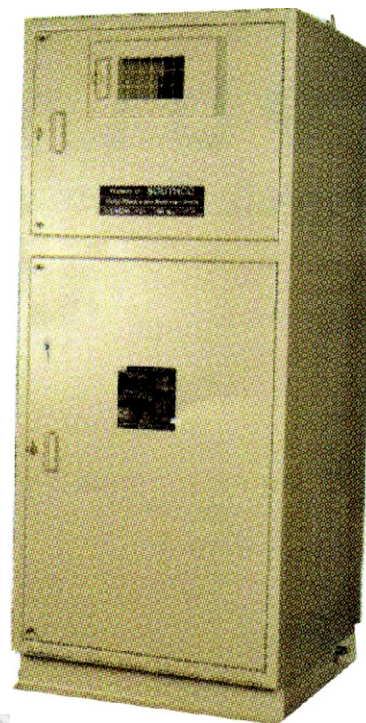


Product

COMBINED METERING UNITS 11 KV AND 33 KV

“Electricfield Company” is manufactures both indoor type and outdoor cubicals along with Trivectro Meter for measurement of power consumption right from incoming time. The cubical are divided in two parts (bottom and top). The bottom part is fitted with current transformers and potential (dry or oil cooled) along with the provision for accommodating the high voltage input / output cable and top portion is fitted with energy meter (cubical fitted with glass case for recording the reading from outside the cubical without opening the door).

The company has been a major supplied to industrial units requiring power at medium voltage and power development department, telecommunication like Airtel, TATA Indicom, Reliance, Aircel, Vodafone and many others for the measurement of power consumption in J&K state. The units manufactured by the company are approved by the Power Development Department after these have been type tested and subsequently tested at our works as routine test, including accuracy test for meters as well as the while CT/PT unit. The surface of the cubical is chemically tested and then powder coated for aesthetic appearance and durability against adverse climatic condition round the year.



- (1) NC Amada Press Brake 100 Tons
- (2) CNC Amada Turrent Punch Press
- (3) SEW NC 3100 Shearing Machine
- (4) Assembly Shop for Insulation Dust Proof

- (5) 132KV Current Transforming Insulated Coils
- (6) Machine Shop for Winding Dust Proof
- (7) Dust Proof Cabins for Assembly Shop
- (8) Current Transformer Ready for Desatch

- (9) Store



Panoramic view of Shop Floors



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Works

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