1. INTRODUCTION

INDUS POWER SYSTEMS is a well reputed company in the field of design and manufacture of various LT Switchgear Panels & Bus-Ducts and having its manufacturing facility in Jeedimetla Industrial Area, Hyderabad, Telangana.

We are in the field of electrification for last 8 years and have established ourselves as a reliable and service-oriented organization providing trouble Free services to different types of industries within India.

Indus Power is committed to achieving Excellence in Engineering by applying innovative and advance technology as well as implementing total quality management. Our high-quality products, timely supplies and after sales services give us pride of place in our customer's most preferred vendor list. Over a period, we have established ourselves as one of the most reliable suppliers to our customers.

Our products are successfully and efficiently running in different sectors like:

- Cement
- Steel & Iron
- Infrastructure
- Pharma & Bulk Drugs
- Solar Power
- Hospitals
- Food Process
- Plastic
- CPWD

Every product which is manufactured is designed for the required application, and the completed products are thoroughly inspected and tested for quality before dispatch. The Company is constantly working towards improving the quality of products by taking feedback from the end user, and incorporating the latest developments in market standards and technologies in the manufacturing process.

It gives us great pleasure to mention here that we keep getting repeat orders from our valued customers as they are very happy and satisfied with the performance of our products and service support given by us.

2. ORGANIZATION

The Company has on its roles, qualified and experienced professionals with technical capability in the design and manufacture of panels. The Company is committed to the customer to supply equipment that incorporates the most practical and advanced technology.

Staff Strength

The number of Managerial and Engineering staff in the company is given below:

a) Senior Executives - 2

b) Engineers - 4

c) Administrative Staff - 2

d) Supervisors / Technicians - 5

e) Workers - 22

The Company maintains the following infrastructure as per market standards and client requirements.

Marketing

Marketing Department is manned by experts in the field, who develop Techno-Commercial proposals to suit the specific requirements of a particular project. This Department takes charge of the pre-bid and post-bid activities to ensure full satisfaction for the customer in all the Techno-Commercial requirements.

Engineering

Engineering department function is to develop specifications, systems design and detailed designs of the components for the switchgear panels and other range of our products.

Procurement

Procurement department function is to develop the final requirement consolidated list along with makes & quantity and various raw materials as per approved drawings. The procurement plan is based on the delivery time period for the supply of ordered Panels.

Manufacturing

The manufacturing facility has approximately 9,000 sq. ft. of covered space for fabrication, assembling & Powder coating of various LT Panels. The fabrication shop is provided with required facilities and machineries for sheet metal fabrication. The cut-outs for meters, relays, etc., are made on profile cutting facilities for obtaining better finish. Before the process powder coating, the panels are treated for de-greasing, de-rusting, phosphating by SEVEN TANK PROCESS as per Indian Standard Specifications.

Quality Control

Our marketing emphasis has been to build business partnership with premier organizations in India by offering quality products and services at an economical cost. The quality is tested and approved by Central Power Research Institute (CPRI).

3. LIST OF PLANT MACHINERY

- Hydraulic Unipress Press 80T (Press cum Break) : 1 No.
- Shearing Machine 2500mm. 4mm : 1 No.
- Welding Machine up 250A : 6 No's
- Surface Grinding Machine : 5 No's
- Hand Drilling Machine : 5 No's
- Bus Bar hydraulic power unit (Namsung) (Cutting/Bending/Punching : 1 No
- Chop Saw Machine (Cutting) : 2 No's
- Radial Drill Machine : 3 No's

- Fly Press Machine : 3 No’s
- 5KV H.V Tester : 1No
- 1000V Megger : 2 No’s
- Multimeter (Digital) : 8 No’s
- Vernier Calipers (Digital) : 2 No’s
- Tong Tester (Clamp Meter) : 3 No’s

4. RANGE OF PRODUCTS

- POWER CONTROL CENTERS (PCC)
- MOTOR CONTROL CENTERS (MCC)
- APFC PANELS
- POWER DISTRIBUTION BOARDS
- LIGHTING DISTRIBUTION BOARDS
- OUTDOOR KIOSKS
- VFD PANELS
- AMF PANELS
- SYNCHRONIZING PANELS
- JUNCTION BOXES
- SOLAR ACDB PANELS
- METER/ACCL PANELS
- FIRE PUMP CONTROL PANELS
- BUS-DUCTS PHASE SEGREGATED & NON- SEGREGATED
- ANY OTHER SPECIALIZED PANEL, AGAINST SPECIFIC APPLICATION.

5. TECHNICAL SPECIFICATIONS

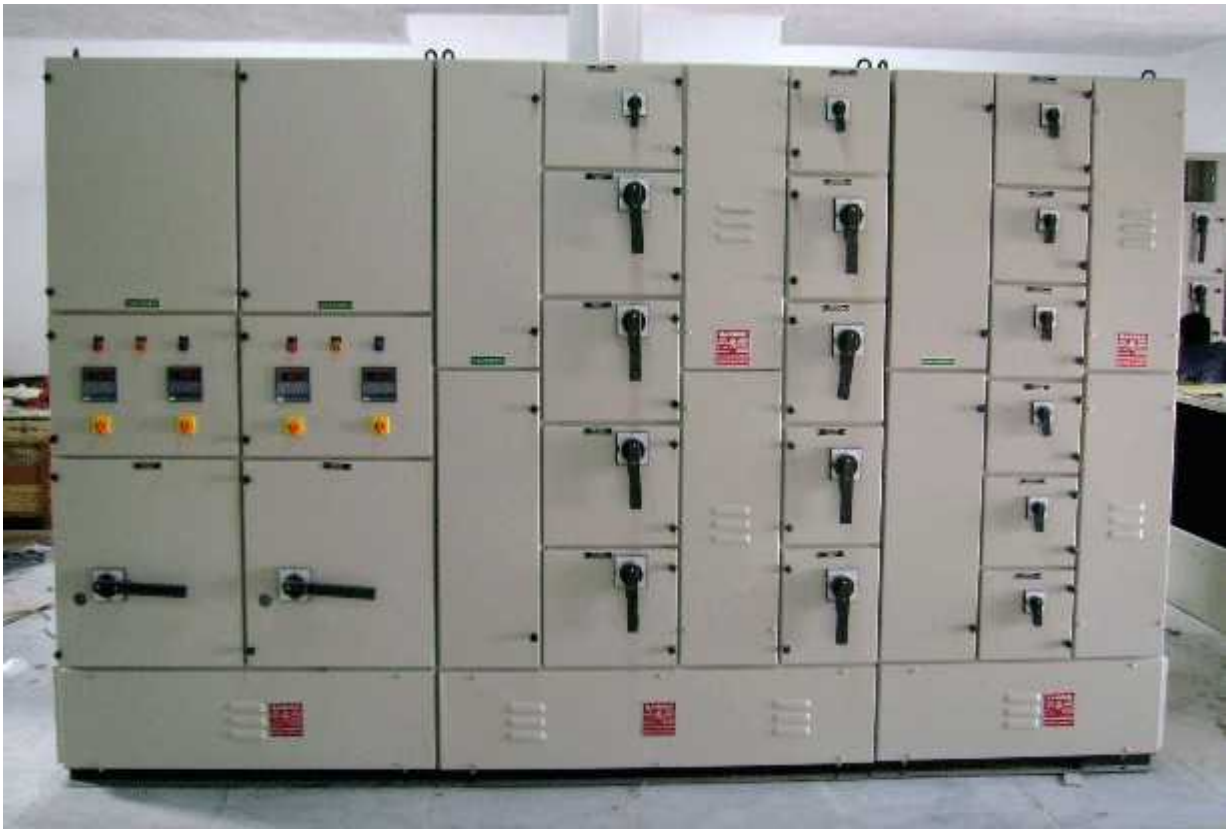
5.1. LT Panels (PCC, MCC, PDB, APFC, LDB…Etc.)

LT Panels have been successfully type tested at Central Power Research Institute, Bangalore for "Verification of Short Circuit Strength" at 50KA for 1 second as per relevant IS specification.

Panels are made out of 14/16 SWG CRCA sheet metal totally enclosed, duct & vermin proof, fully compartmentalized, cubical design and modular construction. All the doors & covers are provided with neoprene rubber gaskets to obtain the dust proof enclosure. Feeder doors are provided with concealed hinges for better aesthetic appearance. All cutouts for the indicating equipment's on the doors (like Push Buttons, Indicating Lamps, Meters & Protection Relays etc.,) are made on Power Press/ Hand Press to get better finish.

Separate horizontal/ vertical busbar chambers are provided as required. Separate vertical cable chambers at the side/ rear side of each unit chamber with adequate space are provided for the easy and maintenance free termination.

INDUS
POWER SYSTEMS



We use non-hygroscopic SMS supports for the Bus Bar for better mechanical and electrical strength and to ensure capability to withstand specified fault current.

The Bus Bars are insulated with heat shrinkable PVC sleeves and all the live parts are shrouded by Acrylic/ FRP sheet to avoid accidental contact.

Double Bus Bar system with suitable electrical and mechanical interlocks for various EB & DG incomers with bus couplers as per the system requirements are provided.

Painting Process :

After total completion of fabrication, the panel is taken for seven tank zinc phosphating metallic surface chemical treatment for degreasing, derusting and phosphating for increasing the paint adhesion to metal and then forwarded for powder coating.

The importance of de-greasing, de-rusting and phosphating process is as given below:

Normally all metal articles are subjected to oil, dirt and grease on surface. This shall be removed by Alkaline De-greasing Chemical.

To remove rust and scale formation on the metal, it should be treated with Acidic De-rusting Chemical.

The phosphating of the metal is very much desired to get Zinc coating on the metal surface to prevent corrosion from the atmosphere during drying process of metal after metal treatment.

The pre-treated and properly dried components/ equipment's will be kept in the powder coating booth and the powder will be applied to it through electrostatic coating process, maintaining a voltage of 100KV, thus forming an even uniform layer over the substrate. (recommended coating thickness – 60 microns). State of the art powder spraying equipment's which generate high voltage of 100KV, having excellent transfer efficiency of powder on to the components/ equipment's.

The coated components/ equipment's will now be kept in the oven for curing at a temperature of 190°c for 15 to 20 minutes. In this process the powder particles first melt and thermosetting will take place and a uniform protective layer will be formed on the components/ equipment's. The toughness and durability of the coated film is dependent on the proper heating of the components/ equipment's, maintaining correct baking temperature and time. The correct baking temperature and time is achieved by using the reputed thermostats and digital temperature indicators.

Tests:

Routine tests shall be conducted on the Power Control center in accordance with IS: 8623 and shall comprise:

a) Inspection of the Power Control Center including inspection of wiring and electrical operational tests where necessary.
b) Dielectric Tests with High Voltage Tester.

c) Insulation Test with 1000 Volt/ 500v Megger

d) Checking of protective measures and electrical continuity of the protective circuits.

Technical Particulars:

Application Standard	:	IS-8623 Part-I
	:	IS-4237
	:	IS-375
	:	IS-13947
System Voltage	:	Up to 500V, 3Ph, 50Hz, ¾ wire system
Insulation Voltage	:	660V
Ambient Temperature	:	Up to 55°c (standard 40°c)
Continuous Current Rating	:	Up to 4000A, ACB's Panel up to 6000A Fault
withstand	:	50KA for 1 second
Degree of protection	:	Up to IP-54/IP-65 for Outdoor
Enclosure	:	14/16/10 SWG as standard
Bus-Bars	:	Aluminium E91E as per IS-5082 (Standard copper as per IS-1897 on request)
Construction	:	Standard Design – Compartmentalizes/ Cubical design and Modular construction fixed
Painting	:	Powder coating (7 tank process)
Horizontal Bus Bar Chamber	:	At Top/ Bottom or both
Vertical Bus Bar Chamber	:	Front/ Rear as per requirements.
Feeder Execution	:	Fixed/ Draw out as per requirements.
Cable Entry	:	Front cable alley/ Rear cable entry top/ bottom as per requirements.

5.2. AIR INSULATED BUS-DUCTS

The Bus Duct shall be metal clad with totally enclosed dust & vermin proof air insulated type. The Bus Duct shall be designed for operation in high ambient temperature and high humidity tropical atmospheric conditions. Means are provided to facilitate ease of inspection, cleaning and repair, for use in installations where continuity of operation is of prime importance.

The bus Ducts are fabricated from 2mm thick CRCA sheet with Louvered (if necessary) covers on both side of Bus Duct for proper heat dispensation. Bus Ducts have top and bottom covers for visual inspection/ maintenance.

The Bus Bar shall be air insulated and made of high conductivity, high strength aluminium alloy complying with the requirements of Grade E91E of IS:5082 or E.C grade copper as required.

The Bus Bar shall be suitably braced with non-hygroscopic Epoxy/SMS supports at suitable intervals to withstand the dynamic forces of short circuit at 50 KA RMS, Symmetrical for 1 second. Large clearances and creepage distances shall be provided on the Bus Bar system to minimize the possibility of a fault as per the relevant Indian Standard.

The orientation of Bus Bar shall be R-Y-B-N or Interleaved i.e, R-B-Y-N-R-Y-B.
The cross sections of Bus Bars for various ratings are calculated approximately based on 1.0/0.8 Ampere per sq. mm for aluminium and 1.6 Ampere per sq. mm for copper.

The Bus Bar shall be insulated with insulation tape or heat shrinkable PVC sleeves or painted with Matt Black Paint.

Bus Duct shall be provided Aluminium/ copper flexible at the ends for proper alignment. After every 6 meters, of straight length portion, Expansion joints shall be provided as per the client requirement for adjusting the expansion of the Bus Bars.

Tests:

Routine tests shall be conducted on the Bus Duct:

a) Inspection of the Bus Duct (physical)

b) Dielectric Tests with High Voltage tester.

c) Insulation Test with 1000-volt Megger

Technical Particulars:

Application standard	:	IS-8623 Part-II & IS-4237
Voltage	:	Up to 500V as standard product, also available for higher voltage on request
Type	:	Phase Non-Segregated type, Phase Segregated type (available for voltage ratings)
Current Rating	:	Up to 6000A
Degree of Protection	:	Up to IP-54 (For outdoor runs, weather proof canopy Will be provided over Bus Ducts of IP-54)
Conductor	:	Standard – Aluminium E91E as per IS-5082 Optional – Copper as per IS-1897 Coating/ Covering – Bare/ Matt black finish Painting/ Heating shrinkable PVC sleeves.
Earth Bus Bars	:	Two runs of appropriate size of conductors Located on opposite sides.
Special Attachment/ Provision	:	Right angles bends/ Phase crossover chamber/ Expansion joints/ Rubber Bellows/ Space heater with Thermostat (Only against special request)

6. LIST OF CUSTOMERS

S.No	Client/Customer Name	Location	Consultant/Contractor
1	BISLERI INTERNATIONAL	PASHAMYLARAM	
2	COCA COLA INTERNATIONAL	AMEENPOOR, HYD	
3	SRINIVASA HACHERIES	PATLOOR	
4	BHARATHI INDUSTRIES	JAGGAIAHPET	
5	GAURAV LUBRICATING PVT LTD	EAST GOODAVARI	
6	VEER PETROLEUMS PVT LTD	EAST GOODAVARI	
7	PRANEETHA MINERALS	NELLORE	
8	SHIVA SHAKTHI SOAPS	KOTHUR	
9	PRAVARSHA AGRO	SIDDIPET	
10	ZUARI CEMENTS	RAMAPURAM	
11	PSR CONSTRUCTION	BANSWADA	
12	SUPER STONE CRUSHERS	KEESARA, HYD	
13	MAHALAKSHMI PROFILES	MEDCHAL, HYD	
14	PHOENIX IT SEZ	HYDERABAD	
15	NBOS TECHNOLOGIES	HYDERABAD	
16	ATMECS IECHNOLOGIES PVT LTD	HYDERABAD	
17	GALLANT ISPAT/METAL LTD	GUJARATH	S.V CONTROL SYSTEMS, HYD
19	GAIL INDIA LTD	VIYAYPUR, M.P	S.R ELECTRICAL SERVICES, HYD
20	SAPTAGIR CHAMPHOR PVT LTD	ANANTAPUR	
21	NCL INDUSTRIES LTD	VIZAG/HYD	
22	INTEGRAL COAH FACTORY	CHENNAI	FOURTH PARTNER, HYD
23	JINDAL INDIA PVT LTD	JANGALPUR	FOURTH PARTNER, HYD
24	COLGATE PALMOLIVE INDIA LTD	SRI CITY, A.P	FOURTH PARTNER, HYD
25	SVS FOOD PROCESS PVT LTD	MEDCHAL	
26	VIJAYA KRISHNA SPICES PVT LTD	KANDUKUR, RR DIST	
27	GOLDEN FROZEN FOODS	PAHADISHAREEF, HYD	
28	SAI SAGAR FOODS	PASHAMYLARAM	
29	DIVYA SNACKS	KOTHUR	
30	HINDUSTAN COCA-COLA BEVARAGES PVT.LTD	AMMENPUR, HYD	FOURTH PARTNER, HYD
31	VSN LABORATORIES PVT LTD	JAGGAIAHPET	
32	KARTHIKEYA PHARMA – UNIT-2	JADCHERLA	
33	TEENA LABS PVT LTD	BOLLARAM	
34	TEENA BIO-LABS PVT LTD	BOLLARAM	
35	LARA DRUGS PVT LTD	CHOUTUPPAL	
36	GENERIX PHARMA PVT LTD	BONTHAPALLY	
37	SANZYME PVT LTD UNIT-1	HYDERABAD	
38	SHIMOGA HEALTH CARE	NALGONDA	

39	MSN LABS UNIT-1	SANGAREDDY	
40	SYMED LABS	BONTHAPALLY	
41	JODAS EXPOIM PVT LTD	HYDERABAD	
42	SANZYME PVT LTD UNIT-2	HYDERABAD	
43	SOLAR ACTIVE PHARMA SCIENCES LTD	VIZAG	A.P ELECTRICALS, HYD
44	SHANTHA BIOTECHNICS PVT LTD	HYDERABAD	A.P ELECTRICALS, HYD
45	SANDOZ PHARMA	HYDERABAD	A.P ELECTRICALS, HYD
46	INDUSGENE EXPRESSIONS LTD	ANANTAPUR	A.P ELECTRICALS, HYD
47	ADAMA INDIA PVT LTD	HYDERABAD	A.P ELECTRICALS, HYD
48	JAMP INDIA PHRMACEUTICALS PVT LTD	HYDERABAD	A.P ELECTRICALS, HYD
49	PROMEA THERAPEUTICS PVT LTD	SANGAREDDY	
50	GVK BIOSCIENCES PVT LTD	NACHARAM, HYD	A.P ELECTRICALS, HYD
51	NOURYON CHEMICALS INDIA PVT LTD	MAHARASTRA	FOURTH PARTNER, HYD
52	POOJA CRAFTED HOMES PVT LTD	HYDERABAD	
53	BHAVYA CONSTRUCTIONS PVT LTS	HYDERABAD	
54	PLATINUM PROPERTIES PVT LTD	HYDERABAD	
55	VKR PROJECTS PVT LTD	HYDERABAD	
56	MEGHA ENGINEERING(MEIL)	HYDERABAD	
57	SCS INFRASTRUCTURES PVT LTD	HYDERABAD	
58	STANDARD INFRATECH PVT LTD	HYDERABAD	
59	PRAJAY ENGINEERS SYNDICATE LTD	HYDERABAD	
60	ELITE VENTURES (EIPL)	HYDERABAD	
61	APARNA CONSTRUCTIONS	HYDERABAD	WINDSON POWER, HYD
62	RAJAPUSHPA PROPERTIES PVT LTD	HYDERABAD	WINDSON POWER, HYD
63	VERTEX HOMES PVT LTD	HYD/VIJAYAWADA	WINDSON POWER, HYD
64	MAGNA HOMES PVT LTD	HYDERABAD	WINDSON POWER, HYD
65	S&S GREEN PROJECTS PVT LTD	HYDERABAD	WINDSON POWER, HYD
66	SCS INFRASTRUCTURES PVT LTD	HYDERABAD	
67	NAVYA CONSTRUCTIONS	VISHAKAPATNAM	
68	TRIBENI CONSTRUCTIONS LTD	KRISHNA, A.P	
69	ARK BUILDERS	HYDERABAD	
70	DEC INFRA PROJECTS (INDIA) PVT LTD	HYDERABAD	
71	SLN PROJECTS	HYDERABAD	
72	TRACKS & TOWERS INFRATECH (P) LTD.	HYDERABAD	
73	SHAPOORJI PALLONJI & COMPANY PVT.LTD	HYDERABAD	
74	AYYAPPA INFRA PROJECTS PVT. LTD	HYDERABAD	
75	MANJEERA HOSPITALS	SANGAREDDY	
76	CAPITAL HEALTH CARE	NIZAMPET, HYD	
77	ANUPAMA HOSPITALS	KUKATPALLY, HYD	
78	Dr. NAGESH HOSPITALS	VIJAYAWADA	
79	GOVT HOSPITALS	VIJAYAWADA	

80	CANCER HOSPITAL & RESEARCH INSTITUTE	GWALIOR, M.P	FOURTH PARTNER, HYD
81	OMEGA HOSPITAL	KARIMNAGAR	VENKATESWARA ELEC., HYD
82	MALLAREDDY NARAYANA HOSPITAL	SURARAM, HYD	VENKATESWARA ELEC., HYD
83	ANKITH POLY SACS	MADHYA PRADESH	
84	SRI VENKATESWARA POLYMERS	NANDYALA	
85	BHARATHI POLY YARN PVT LTD	MEDCHAL	
86	MARITO POLYMERS INDIA PVT LTD	NUZIVEEDU	
87	AXON POLYMERS	JADCHERLA	
88	RK POLYMERS	GUNTUR	
89	BRIDGESTONE INDIA PVT LTD	MAHARASTRA	FOURTH PARTNER, HYD
90	SANGIR PLASTICS PVT LTD	GUJARAT	FOURTH PARTNER, HYD
91	PREMIER SOLAR SYSTEMS PVT LTD	HYDERABAD	
92	SIRUS SOLAR	HYDERABAD	
93	MYTRAH ENERGY (INDIA) PVT LTD	HYDERABAD	
94	SOLON INDIA PVT LTD	HYDERABAD	
95	AVGNI ENERGY SYSTEM INDIA PVT LTD	HYDERABAD	
96	FOURTH PARTNER ENERGY PVT LTD	HYDERABAD	
97	NOVUS GREEN ENERGY SYSTEMS LTD	HYDERABAD	
98	FREYR ENERGY	HYDERABAD	
99	PURENERGY PVT LTD	SANGAREDDY	
100	CRIDA	HYDERABAD	
101	A G OFFICE	HYDERABAD	
102	IIIT KURNOOL	KURNOOL	
103	AIRPORT	VIJAYAWADA	
104	CVRDE	CHENNAI	
105	NFC	HYDERABAD	WINDSON POWER, HYD
106	NRDF	VIJAYAWADA	SAFETECH SYSTEMS, HYD
107	NIMH	HYDERABAD	SAFETECH SYSTEMS, HYD
108	ANU	GUNTUR	SAFETECH SYSTEMS, HYD
109	TSIDCL	NIZAMABAD	INTEGRATED ENGINEERING, HYD
110	RWS&S (JCNR WATER SUPPLY PROJECT)	ANANTAPUR	INTEGRATED ENGINEERING, HYD
111	KODICHRLA LIS	NIZAMABAD	INTEGRATED ENGINEERING, HYD
112	DIPP – NID PROJECT	VIJAYAWADA	JOSHITHA INFRATECH, HYD
113	TSIIC – T.HUB PHASE-II	HYDERABAD	HIFLY ELECTRICALS, HYD
114	IICT	HYDERABAD	A.P ELECTRICALS, HYD
115	IIIT (DATA CENTER)	HYDERABAD	GRID2CHIP, HYD
116	IIT, HYD	SANGAREDDY	HARSHITHA INFRA, HYD

7. CPRI TEST CERTIFICATES

CPRI

TEST REPORT

Central Power Research Institute

(A Govt. of India Society)
P.B.No. 8066, Sadashivanagar Post Office,
Sir C.V. Raman Road,
Bangalore - 560 080 (INDIA)

CENTRAL POWER RESEARCH INSTITUTE
(Member of STL)

CPRI

TEST REPORT

Test Report Number	SC170130	**Dated**: 17th February, 2017
Name & Address of the Customer	M/s. Indus Power Systems, 5-55, Plot No. 376, Dullapally Road, IDA, Jeedimetla, Phase – V (Extn.), Hyderabad – 500 055, Telangana, India.	
Name & Address of the Manufacturer	M/s. Indus Power Systems, 5-55, Plot No. 376, Dullapally Road, IDA, Jeedimetla, Phase – V (Extn.), Hyderabad – 500 055, Telangana, India.	
Particulars of sample tested	Low-voltage switchgear and controlgear assembly – LT Panel	
Condition of the sample on Receipt	New	
Type	Indoor, cubicle	
Description of test sample	415 V 4000 A LT Panel	
Serial Number (s)	IPS/001	
Number of samples tested	One	
Date (s) of test (s)	09th February, 2017	
CPRI sample code no(s).	SC17S0042	
Particulars of tests conducted	Verification of the short-circuit withstand strength	
Test in accordance with Standard / specification	Sub-clause 8.2.3 of IS 8623 (Part 1):1993 / IEC Pub 439-1 (1985) (Reaffirmed 2013)	
Sampling plan	Not applicable	
Customer's requirement	50 kA rms for 1.0 s & 105 kA peak on phase bus-bars	
Deviations if any	Nil	
Name of the witnessing persons		
Customer's representative	Mr. Y. Naresh Reddy, Supervisor	
Other than customer's representatives	None	
Test subcontracted with Address of the laboratory	None	
Documents constituting this report (In words)		
Number of sheets	Five	
Number of oscillograms	Two	
Number of graphs	Nil	
Number of photos	Two	
Number of test circuit diagrams	Two	
Number of drawings	Two	

(Sakthivel. P)
Test Engineer

(Swaraj Kumar Das)
Joint Director

SHORT CIRCUIT LABORATORY
P.B.NO.8066, SADASHIVANAGAR POST OFFICE
SIR C V RAMAN ROAD, BENGALURU - 560 080 (INDIA)
Phone : +91 (0) 80 - 23607824 Fax : +91 (0) 80 - 23607824

Test Report Number: SC170130 **Dated**: 17th February, 2017

Description of sample tested (ratings as assigned by the manufacturer)

Test sample	Low-voltage switchgear and controlgear assembly – LT Panel
Type	Indoor, cubicle
Serial number	IPS/001
Rated voltage	415V
Rated insulation voltage	660V
Rated current	4000A
Rated frequency	50 Hz
Number of phases	Three & neutral
Rated short-time withstand current & peak withstand current	50 kA rms for 1.0 s & 105 kA peak on phase bus-bars & 30 kA rms for 1.0 s & 63 kA peak on neutral bus-bar

Documents attached to this report

Oscillogram number(s)	SC170130.S02 & SC170130.S03
Photo number(s)	SC170130.PB1 & SC170130.PA1
Test circuit diagram number(s)	CRTL/SC/STC-04A & CRTL/SC/STC-02A
Drawing number(s)	IPS/16-08-2016 SHEET NO 1 OF 2 & IPS/16-08-2016 SHEET NO 2 OF 2

Test Engineer

SHORT CIRCUIT LABORATORY
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Test Report Number: SC170130 **Dated**: 17th February, 2017

SCHEDULE OF TESTS

VERIFICATION OF THE SHORT-CIRCUIT WITHSTAND STRENGTH (SUB-CLAUSE 8.2.3)

TEST CONDITIONS

Source	Short-circuit generator
Phase	
Test on phase bus-bars	Three
Test on neutral bus-bar	Single
Frequency	50 Hz
Test sample	
Condition before test	In clean & new condition; end of horizontal bus-bars connected to source.
Body/Enclosure	2.0 mm thick CRCA sheet; isolated from earth and connected to the source neutral through a fine-wire fuse (FWF) of diameter 0.1mm and length of 50 mm in series with a 2.0 ohms resistor
Test details	
Test circuit drawing number	
Test on phase bus-bars	CRTL/SC/STC-04A
Test on neutral bus-bar	CRTL/SC/STC-02A
Short-circuit applied	On the end of the vertical bus-bars
Short-circuit point	Grounded

Test results

Test on: Horizontal and vertical phase bus-bars of the panel

Oscillogram Number	Current (kA)		Duration (s)	Observations
	Peak	RMS		
SC170130.S02	110.7 (R-phase)	R – 49.97 Y – 49.12 B – 49.13 Average: 49.41*	1.10	**During test:** No abnormality **After test:** Fine-wire fuse intact

* Equivalent to 51.82 kA rms for 1.0 s

Test on: Neutral bus-bar of the panel with nearest phase bus-bar as return conductor

Oscillogram Number	Current (kA)		Duration (s)	Observations
	Peak	RMS		
SC170130.S03	66.00	30.25	1.10	**During test:** No abnormality **After test:** Fine wire fuse intact

Test Engineer

SHORT CIRCUIT LABORATORY
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Phone: +91 (0) 80 - 23607624 Fax: +91 (0) 80 – 23607824

Test Report Number: SC170130 **Dated**: 17th February, 2017

VERIFICATION OF THE DIELECTRIC PROPERTIES

Condition of the sample: As after the verification of the short-circuit withstand strength test

Test procedure	Observations
A power frequency voltage of 2.5 kV rms for 60 s was applied between	
1. All live parts connected together and enclosure	Withstood
2. Each pole and all the other poles connected to enclosure	Withstood

Physical Inspection

Bus-bars : No visible external damage or deformation
Supports : Intact

Remarks: The sample tested complies with the sub-clause of the standard referred to.

Test Engineer

SHORT CIRCUIT LABORATORY
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CENTRAL POWER RESEARCH INSTITUTE

CPRI

TEST REPORT

Test Report Number: 008EATDIP17S0008 **Dated: 11.01.2017**

Name & Address of the Customer	:	M/s. Indus Power Systems, 5-55, Plot No. 376, I.D.A Jeedimetla, Dullapally road, Phase-5 (extn.), Hyderabad-500055, Telangana State.
Name & Address of the Manufacturer	:	M/s. Indus Power Systems, 5-55, Plot No. 376, I.D.A Jeedimetla, Dullapally road, Phase-5 (extn.), Hyderabad-500055, Telangana State.

Particulars of sample tested

Condition of the sample on Receipt	:	New
Type	:	Indoor/Outdoor
Description of test sample	:	LT Power Distribution Panel
Serial Number	:	IP65–IPS/003
Number of samples tested	:	One only.
Date (s) of Test (s)	:	10.01.2017 & 11.01.2017
CPRI sample code no(s)	:	EATDIP17S0008

Particulars of tests conducted

Test in accordance with Standard / specification	:	IP 65 Category 2 Test, as per IS/IEC 60529 : 2001 Standard. Clause 11.5, 13.4 and 14.2.5.
Sampling Plan	:	Not applicable
Customer's requirement	:	1. IP 65 Category 2 Test, as per IS/IEC 60529 : 2001 Standard. Clause 11.5, 13.4 and 14.2.5. 2. Visual observation for entry of dust IP6X Category 2 Test and water IPX5.
Deviations if any	:	-Nil-

Name of the witnessing persons

Customer's representative	:	Mr. Y. Naresh Reddy, Supervisor.
Other than customer's representatives	:	None
Test subcontracted with address of the laboratory	:	None

Documents constituting this report (In words)

Number of sheets	:	Three only
Number of oscillograms	:	-Nil-
Number of graphs	:	-Nil-
Number of photos	:	-Nil-
Number of test circuit diagrams	:	-Nil-
Number of drawings	:	Three only, Drawing No.: IPS/GA/IP65/2016, Sheet 1 of 3 to Sheet 3 of 3.

(GUJJALA B.BALARAJU)
Test Engineer

(A.R RAVIKUMAR)
Head of Division

CENTRAL POWER RESEARCH INSTITUTE

CPRI

Test Report Number: 008EATDIP17S0008 **Dated: 11.01.2017**

TEST RESULTS:

Sl. No.	PARTICULARS		OBSERVATIONS
	TESTS CONDUCTED	REFERENCE CLAUSE	
1.0	IP 6X Category 2 Test, IS/IEC 60529 : 2001 Standard.	**Clause No.11.5 and 13.4** Protection against Ingress of solid foreign objects – Dust Protection Test.	No entry of dust found observed inside the "LT Power Distribution Panel" Enclosure.
2.0	IP X5 Test as per IS/IEC 60529 : 2001 Standard.	**Clause No.11.5 and 14.2.5** Protection against harmful ingress of water – Hose jet of water using nozzle of dia. 6.30 mm, water flow rate 12.5 Ltrs/min ± 5% and at 3 m distance.	No entry of water found observed inside the "LT Power Distribution Panel" Enclosure.

Test Engineer

ELECTRICAL APPLIANCES TECHNOLOGY DIVISION
CENTRAL POWER RESEARCH INSTITUTE
PROF. SIR C. V. RAMAN ROAD, SADASHIVANAGARA P.O.
BENGALURU – 560 080, INDIA

CENTRAL POWER RESEARCH INSTITUTE

CPRI

TEST REPORT

Test Report Number: 009EATDIP17S0009 **Dated: 11.01.2017**

Name & Address of the Customer	:	M/s. Indus Power Systems, 5-55, Plot No. 376, I.D.A Jeedimetla, Dullapally road, Phase-5 (extn.), Hyderabad-500055, Telangana State.
Name & Address of the Manufacturer	:	M/s. Indus Power Systems, 5-55, Plot No. 376, I.D.A Jeedimetla, Dullapally road, Phase-5 (extn.), Hyderabad-500055, Telangana State.

Particulars of sample tested

Condition of the sample on Receipt	:	New
Type	:	Indoor/Outdoor
Description of test sample	:	LT Power Distribution Panel.
Serial Number	:	IP54–IPS/002
Number of samples tested	:	One only.
Date (s) of Test (s)	:	10.01.2017 & 11.01.2017
CPRI sample code no(s)	:	EATDIP17S0009

Particulars of tests conducted

Test in accordance with Standard / specification	:	IP 54 Category 2 Test, as per IS/IEC 60529 : 2001 Standard. Clause 11.5, 13.4 and 14.2.4(b)
Sampling Plan	:	Not applicable
Customer's requirement	:	1. IP 54 Category 2 Test, as per IS/IEC 60529 : 2001 Standard. Clause 11.5, 13.4 and 14.2.4(b). 2. Visual observation for entry of dust IP5X Category 2 Test and water IPX4
Deviations if any	:	-Nil-

Name of the witnessing persons

Customer's representative	:	Mr. Y. Naresh Reddy, Supervisor.
Other than customer's representatives	:	None
Test subcontracted with address of the laboratory	:	None

Documents constituting this report (In words)

Number of sheets	:	Three only
Number of oscillograms	:	-Nil-
Number of graphs	:	-Nil-
Number of photos	:	-Nil-
Number of test circuit diagrams	:	-Nil-
Number of drawings	:	Three Only, Drawing No. IPS/GA/IP54/2016, Sheet 1 of 3 to Sheet 3 of 3.

(GUJJALA B.BALARAJU)
Test Engineer

(A.R RAVIKUMAR)
Head of Division

CENTRAL POWER RESEARCH INSTITUTE

CPRI

Test Report Number: 009EATDIP17S0009 **Dated: 11.01.2017**

TEST RESULTS:

Sl. No.	PARTICULARS		OBSERVATIONS
	TESTS CONDUCTED	REFERENCE CLAUSE	
1.0	IP 5X Category 2 Test, IS/IEC 60529 : 2001 Standard.	**Clause No.11.5 and 13.4** Protection against Ingress of solid foreign objects – Dust Protection Test.	No entry of dust found observed inside the "LT Power Distribution Panel" Enclosure.
2.0	IP X4 Test as per IS/IEC 60529 : 2001 Standard.	**Clause No.11.5 and14.2.4(b)** Protection against ingress of water – Spray nozzle, water flow rate 10 Ltrs/min ± 5% and at a distance of 0.5 m.	No entry of water found observed inside the "LT Power Distribution Panel" Enclosure.

Test Engineer

ELECTRICAL APPLIANCES TECHNOLOGY DIVISION
CENTRAL POWER RESEARCH INSTITUTE
PROF. SIR C. V. RAMAN ROAD, SADASHIVANAGARA P.O.
BENGALURU – 560 080. INDIA

8. CREDENTIALS

ON GOVT. APPROVED LIST

D.E.C. INFRASTRUCTURE & PROJECTS (INDIA) PRIVATE LIMITED

(FORMERLY KNOWN AS M/s. DAS ENGINEERING CO.)

Regd. Off. : # 2-1-434/1, Street No. 4, Nallakunta, Hyderabad - 500 044. Telangana

Ph : 040-27666305, 66682513. e-mail : dasenggco@yahoo.co.in

ENGINEERS ✦ CONTRACTORS

(Certified by ISO 9001:2015)

Date : 03.Nov.2018
Place : Hyderabad.

TO WHOMSOEVER IT MAY CONCERN

This is to certify that M/s. INDUS POWER SYSTEMS JEEDIMETLA, HYDERABAD is the one of our suppliers for supply of various LT Panels (PCC, PDB & Meter panels etc..) up to 4000A Rating since 2015. They have supplied Panels in time and their performance is satisfactory.

For D.E.C Infrastructure & Projects (India) Pvt.Ltd.

MD. Riyazuddin
Head – Electrical

D.E.C Infrastructure & Projects (India) Pvt. Ltd. HYDERABAD

BANGALORE BRANCH :
No. 9/9, Industrial Suburb, Ward No. 10, Mahalakshmi Layout,
BANGALORE - 560 086. Ph : 080-23474317, 32486495

A P ELECTRICALS AND ENGINEERS

Date : 30.01.2021
Place : Hyderabad.

TO WHOM IT MAY CONCERN

PERFORMANCE CERTIFICATE

This is being given to certify that LT Panels ratings of 4000A PCC Panels, MCC Panels, VFD Panels & Bus-Ducts Supplied by ***M/s. INDUS POWER SYSTEMS, HYDERABAD*** *for our projects (i.e Adama India Pvt.Ltd, Indus Gene Expressions, IICT Hyd, Shantha Biotech, Sandoz Pharma, Jamp Pharma, GVK Biosciences...Etc.) are working satisfactorily till date. We are happy with their services & support.*

We wish them all success.

For A. P Electricals & Engineers

A.P. ELECTRICALS & ENGINEERS

Authorized Signatory

GSTIN : 36ABGFA1363B1ZZ
Corporate Office : Plot No. 3, Sanjeevaiah Housing Society, Sikh Village, Near Tadbund Hanuman Temple, Secunderabad - 500 009. (T.S.)
Email : info@apeeonline.com Website : www.apeeonline.com
Ph. No. 040-27890212, +91 8121095556
Hyderabad | Vizag | Bangalore | Mumbai

INTEGRATED ENGINEERING

Date : 31.December.2020.

TO WHOMSOEVER IT MAY CONCERN

This is to certify that M/s. INDUS POWER SYSTEMS, HYDERABAD have supplied various LT incomer Panels & 150HP Starter Panels with P.O : IE/AP/PO/022/J034-1,J040,J043/20-21/R0 , JCNR Drinking water supply projects. All the panels have been Supplied, Commissioned & running satisfactorily. We are happy with their services in maintaining delivery schedule & support in execution of the all Panels.

For INTEGRATED ENGINEERING

INTEGRATED ENGINEERING HYDERABAD

C.Y. Gangi Reddy
Managing Partners

Plot No-416, Vivekananda Nagar Colony, Kukatpally, Hyderabad, Telangana, India-500072
ieplgroup@gmail.com, www.ieplgroup.com, +91 8499080006, +91 8008222003. GST No-36AAFFI1759K1Z3

JOSHITHA

Date: 11.10.2020

TO WHOM IT MAY CONCERN

PERFORMANCE CERTIFICATE

This is certified that **M/s. INDUS POWER SYSTEMS, HYDERABAD** have supplied LT PCC Panels, Synchronizing Panel, APFC Panels & various PDB Panels for our NID Project, Vijayawada. All the Panels have commissioned & their performance in general is satisfactorily. We are happy with their services in maintaining delivery time & support.

For JOSHITHA INFRATECH PVT.LTD.

JOSHITHA INFRATECH PVT. LTD.

M. Narendra Rao
GM Projects

Joshitha Infratech Pvt. Ltd.
Flat No. 502 & 602, Uday Elite Building, Jayabheri Pine Valley Colony, Gachibowli, Hyderabad, Telangana 500032, INDIA
Ph : +91 40 23000561, Fax :+91 40 23000516, E-mail : Email: infra@joshithagroup.com | www.joshithagroup.com
Corporate Identity Number : U45400TG2010PTC068990

WINDSON POWER & CONTROL SYSTEMS PVT. LTD.

ELECTRICAL ENGINEERS & CONTRACTOR

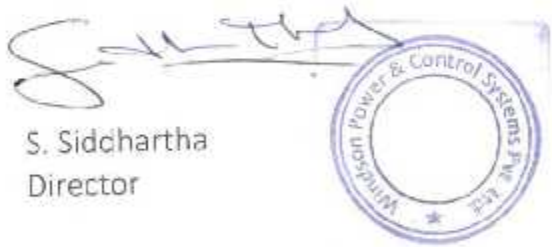
H.No. 17-30/A/1, Dharmapuri Colony, Uppal, Hyderabad, Telangana - 500 039.
Mobile : +91-98663 74252 E-mail : windson.projects@gmail.com
GST No. 36AAACW1819N1Z1

Date : 13.Jun.2019
Place : Hyderabad.

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the L.T Panels having the ratings of 2500A PCC Panels, Outdoor Feeder Pillar Panels & Bus-Ducts Supplied by M/s. INDUS POWER SYSTEMS, HYDERABAD for our different projects like NFC, Aparna Constructions, Raja Pushpa Greendale, Magna Majestic Meadows & Vertex Homes are working satisfactorily till date without any breakdown by its own. They have supplied Panels and their performance is satisfactory.

For Windson Power & Control Systems Pvt. Ltd.



S. Siddhartha
Director