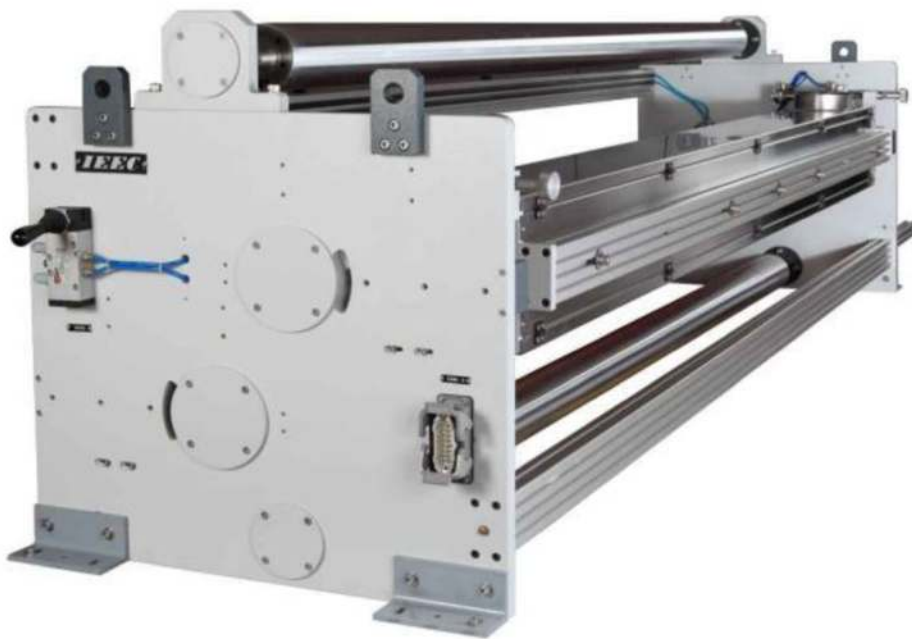


CORONA TREATMENT SYSTEM



PROPOSAL FOR CORONA TREATMENT SYSTEM

Ref : B S NEGI/PNA/2202/CT-1100-5KW/Q/1/831

Date : 09th February, 2022**Mr. B. S. Negi**

Mobile: 9909945832

E-mail: bhagwan75negi@gmail.com

CC.: Anhad Dhingra <xerceas2021@gmail.com>

Dear Sir,

Sub: Supply of Corona Treatment System

Thank you for taking interest in IEEC Corona treatment system.

We acknowledge with thanks the receipt of your email dated 08th February 2022 and subsequent talk had with our Director Mr.Rohit Deshpande regarding your requirement of corona treatment system for PVC rigid film.

As discussed and specifications provided, we take great pleasure in giving below the quotation for our High Frequency Corona Treatment System for your PVC Extrusion line, as required by you.

KEY FEATURES OF IEEC CORONA TREATER: **(EXTRUSION SHEET LINE)**

POWER GENERATOR

➤ **WET START**

WET START stands as a solution for accumulation of moisture on the electrode due to "line stoppage or high ambient humidity". A pre-settable corona power is discharge in a cyclic pattern. This wet start cycle is to be carried out during the pre-production setting period. This process ensures drying of unwanted moisture & condensation on electrode and other parts.

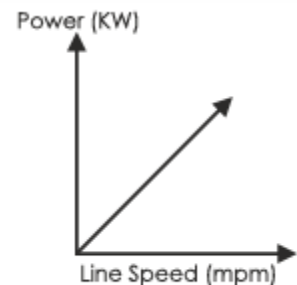
➤ **AUTO TUNING OF FREQUENCY**

With this feature the Corona Power is delivering at a highest efficiency at around 95% irrespective of the gauge variation or change of substrate additives.

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Date : 09th February, 2022**➤ PROPORTIONAL WATT DENSITY CONTROL**

With this unique system the corona power provided to the electrode automatically adjusts itself proportional to the line speed. If the operator increases the line speed the corona power increases proportionally. As such, unit area of the substrate receives constant corona treatment irrespective of the line speed.

**➤ ALARM & FAULT HISTORY LOG WITH USB BACKUP FACILITY**

In an event of a tripping in our system a log file is created in the PLC with respect to the date and time. This helps the user to analyze the quality of the film produced in a particular batch. This log file can be downloaded by the user on to a USB file in .csv format which can be used for quality analysis.

From : 16/09/2017 - 16:10:42

Duration : 5 Mins

Refresh

To : 16/09/2017 - 16:15:42

Time	Description
16-09-2017 16:15:24	SPARK TRIP
16-09-2017 16:15:29	ELECTRONIC O/L
16-09-2017 16:15:32	SHORT CIRCUIT
16-09-2017 16:15:34	UND VOL/SING-PHASING
16-09-2017 16:15:38	THERMAL TRIP

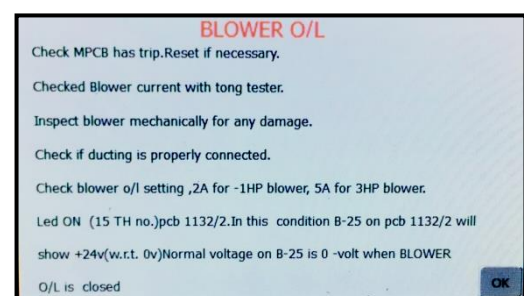
Backward

USB BACKUP

Forward

➤ TROUBLE SHOOTING GUIDE

An inbuilt Trouble shooting guide is offered in our PLC based HMI. This engages the operator to use his skills to solve the problem by himself. This also helps in reducing the down time. In an event of a fault/trip a basic trouble-shooting guide pops up on the HIM there by guiding the operator to analyze and solve the problem. We are just call away in case the problem is not resolved.



Ref : B S NEGI/PNA/2202/CT-1100-5KW/Q/1/831

Date : 09th February, 2022

➤ **FAST RAMP UP/DOWN**

IEEC corona generators are the fastest responsive generators with a power output ramp up and ramp down of 3 sec. This feature ensures precise and accurate proportional watt density control with machine line speed.



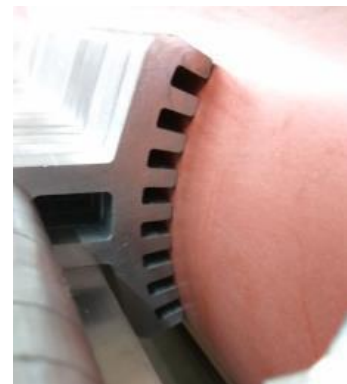
➤ **SMOOTH RECTIFICATION**

With 50 years of experience in digital power electronics, IEEC is the only brand in the market to offer smooth DC rectification in corona generators. With this feature the corona output is much smoother and linear as a result of which uniform treatment is achieved on substrates that are difficult to treat

TREATING STATION

➤ **MULTIPOINT ELECTRODE DESIGN**

This electrode design ensures better dwell time for the film under corona discharge. Also better electrical load handling capacity is achieved at higher power. Materials with higher slip content get effectively treated with this design.



➤ **PRECISE AIR GAP ADJUSTMENT**

Fine air gap adjustment can be done externally without the line stoppage. The mechanical design ensures absolutely linearity in the air gap across the web width.



Ref : B S NEGI/PNA/2202/CT-1100-5KW/Q/1/831

Date : 09th February, 2022**➤ STAINLESS STEEL ELECTRODE HEADS**

During high humidity conditions due to negative pressure there is moisture contamination inside the electrode head. Our stainless steel electrode head ensure that there is no premature arcing inside the duct due to moisture formation.

**➤ BETTER WRAP ANGLE OF THE FILM**

With Idler rollers at the entry and exit for the film, our design ensures proper wrap angle of the film on the treater roller thereby ensuring no undesirable inside treatment of the film

**IV. OUR PROPOSAL****1. Specifications Given:**

As per the specifications given by you we understand that your requirements are as under.

<u>PARTICULAR</u>	<u>DESCRIPTION</u>
MATERIALS TO TREAT	PVC RIGID FILM
MAX. TREATMENT WIDTH	1100mm
MAX. MATERIAL THICKNESS	0.1 to 6 mm
MAX.LINE SPEED	60 METERS/MIN
TREATMENT SIDES (SINGLE/DOUBLE)	DOUBLE
HOST MACHINE	Your machine
TREATMENT ENHANCED TO	>42 DYNES

2. Technical Details of the System:

As per your requirements, we understand that the following system will be best suitable for your application.

<u>PARTICULAR</u>	<u>DESCRIPTION</u>
<u>MACHINE MODEL:</u> For 1100mm:	RFI/5-127-120SL-1HM-D

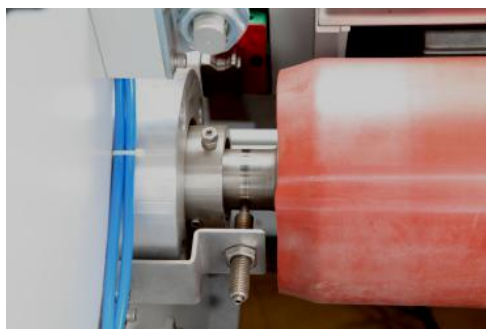
Ref : B S NEGI/PNA/2202/CT-1100-5KW/Q/1/831

Date : 09th February, 2022[CLICK HERE FOR VIDEO PRESENTATION](#)**DESCRIPTION:**

- IEEC make solid state **5 KW** Micro Controller based Fully Digitalized Corona Treater Generator model **RFG5** generally as per attached **Annexure A**.
- **SUITABLE HEAVY DUTY TREATING STATION WITH FINE GAP ADJUSTMENT FACILITY AS PER FOLLOWING SPECIFICATIONS:**



IEEC **1100mm** Treat Width Treater Station with suitable Electrode Magazine Assembly, which is easy to remove for cleaning and servicing. The Magazine will have **6 point discharge Aluminium Electrodes for fixed width treatment**, a pneumatically actuated retract feature to easy thread up, and a safety interlocking feature to prevent the Treater from running when the electrodes are retracted.



The treater ground rolls are dynamically balanced and has an electronic zero speed switch and grounding brush to prevent premature bearing failure. The Treater rollers will be of **approximately 120mm Diameter with Silicon Sleeves**.

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IEEC HOUSE", 72 BCD, GOVT. INDUSTRIAL ESTATE, CHARKOP, KANDIVLI(W), MUMBAI. (INDIA)

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- Email : pramod.arage@ieecpe.com; info@ieecpe.com • www.ieecpe.com •
- GSTIN No.: 27AAACP2508H1ZO • CIN:U32108MH1972PTC016080 •

Ref : B S NEGI/PNA/2202/CT-1100-5KW/Q/1/831

Date : 09th February, 2022

Roller Length will be approximately 1270mm (Face Length).

Two Idler Rollers for entry and exit will be of approximately 100mm diameter and face length 1270mm for easy threading of the film through the Treater roller.

OZONE EXTRACTION BLOWER (OEB-1)

- 1. 1 HP, 0.75 KW** Motor 3-Phase 415 Volts 50 C/s TEFC with direct driven Impeller supply complete with Inlet and outlet adaptor to connect to customer's flexible ducting with interlock mechanism to switch off the Generator in the event of Blower trip.
- 2. Aluminium Die Casted Housing** with corrosion proofed impeller. All blower components will be powder coated.
- 3. Flow Capacity 400 CFM @ 7½" WGP.**
- 4. Mains Voltage:** 3-Phase 415V
- 5. Frequency:** 50 HZ.

CONTROL CABLES WITH HEAVY DUTY CONDUIT:

Control Cables will be provided inside Heavy Duty Conduit to safeguard cables from damage and ensure long life.

SILICON SHEATHED SS BRAIDED HT CABLE

Preinstalled between the Output Transformer and the Electrode of the Corona Station which is silicon insulated, Flexible, Multi-strand SS Braided Cable with Double Silicon sheathed Insulating Sleeve.

HEAVY DUTY PLUG SOCKET CONNECTORS

Heavy Duty Plug Socket Connectors are non-interchangeable and hence ensure proper connection.

It offers ease in installation and maintenance.

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Date : 09th February, 2022**EHT TRANSFORMER (TX-RFG5)**

EHT Transformer suitable for above Corona Generator will be specially designed in compact Cast Aluminium tank, having primary and secondary coil which are made from LITZ WIRE with imported 'U' core dipped in special EHT grade dielectric Gel and Excess temperature protection using thermal switch. The transformer is absolutely maintenance free.

3. ADDITIONAL BENEFITS:

- **AUTO WATT DENSITY CONTROL**

With this unique system the corona power provided to the electrode automatically adjusts itself proportional to the line speed. **If the operator increases the line speed the corona power increases proportionally.** As such, unit area of the substrate receives constant corona treatment irrespective of the line speed. Another interesting feature is variations in electrode gap, thickness of substrate and supply of voltage do not have any effect on the level of corona treatment.

- **Glazed Ceramic Insulators** with maximum tracking distance against leakage current and humidity.
- **Supply of 10 Meter Cable** from Generator to Transformer and Transformer to Treating Station.
- **Electrodes open pneumatically** for easy threading of the web.
- Rotation Sensor to monitor that the roll is rotating (zero speed sensing) before Corona can be switched ON.
- Safety Limit Switch to ensure electrodes are in position before Corona can be started.
- The Treater is painted with **corrosion resistant paint** and has exhaust flue connections for connecting the Ozone Extraction Blower.
- Corona Treater Roller with Heavy Duty Extended Shafts & Bearings for free movement of the roller but without the driven arrangement.
- Corrosion Proof Cross Members.

4. PLEASE NOTE

The Dyne Values achieved depends upon the quality of the material, and type of the material to be treated hence can-not be guaranteed.

5. YOUR FINANCIAL INVESTMENT:

Your Financial Investment for the above proposed System will be as under.

<u>MACHINE MODEL</u>	<u>COST IN RUPEE</u>
<u>For 1100mm:</u> RFI/5-127-120SL-1HM-D @.....	Rs. 8,65,000 Each Ex-works, Kandivali, Mumbai

Ref : B S NEGI/PNA/2202/CT-1100-5KW/Q/1/831

Date : 09th February, 2022**TERMS & CONDITIONS FOR SALES**

Offer Validity	:	30 Days from offer date
GST	:	Goods Service Tax as applicable at the time of delivery. Currently 18% - HSN CODE. 847720 GST NO. 27AAACP2508H1ZO DT. 28/06/17
Freight charges	:	On freight to pay basis. If freight paid by us additional GST will be applicable @ 18% OR as applicable at the time of delivery.
Packing charges	:	3% of the basic Value(GST @ 18% also applicable on packing)
Transit insurance	:	To be covered by you.
Bank Charges	:	Additional 3% Bank Charges for any type of Bank Guarantee to your account
Payment terms	:	33% advance along with Purchase Order and balance against Proforma Invoice.

INSTALLATION & STARTUP

Commissioning/Installation will be done by our Authorized Service providers M/s. Electric Corporation of India, on chargeable basis.

Charges Rs.7500/- per day/ per person plus GST as applicable.

Other Charges "To and Fro" air fare/ train fare between Mumbai and the place of commissioning / installation plus GST as applicable.
Lodging & Boarding for their engineer's stay at the place of commissioning/installation plus GST as applicable.
However, it will be billed at the rates applicable at the time of actual commissioning/installation.

DELIVERY PERIOD:

Within 6-8 weeks from the date of receipt of your commercially & technically clear order. The delivery indicated above is only estimated time of delivery. However, we will make all possible efforts to arrange for the delivery as per your stipulated delivery period.

However, we will not be liable for any damage, direct or indirect, sustained or occasioned by the reason of late delivery. Further, in no case, late delivery shall constitute a valid ground for rejecting the goods supplied. Further, this time of delivery is subject to 'force majeure' and all other circumstances beyond our control.

GUARANTEE / WARRANTEE: AS PER ATTACHED ANNEXURE -B**FORCE MAJEURE:**

We shall not be liable for any failure to perform our obligations where such failure is as a result of Acts of Nature (including fire, flood, earthquake, storm, hurricane or other natural disaster), war, invasion, act of foreign enemies, hostilities (whether war is declared or not), civil war, rebellion, revolution, insurrection, military or usurped power or confiscation, terrorist activities, nationalization, government sanction, blockage, embargo, labour dispute, strike, lockout or interruption or failure of electricity.

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Ref : B S NEGI/PNA/2202/CT-1100-5KW/Q/1/831

Date : 09th February, 2022**INSTRUCTIONS:**

1. We would request you to kindly consider the validity of this proposal for 30 days.
2. In case a Bank Guarantee is required by you, 3% of the guarantee value will be levied will be borne by you.
3. As per amendment to the Income Tax Act, it is incumbent on IEEC to Collect Tax at Source, presently at the rate of 0.075% of the Tax Invoice amount. This is applicable with effect from 1st October 2020 billings and in an event the total turnover exceeds Rs. 50 lakhs in aggregate per year. We will charge the equivalent amount in the tax invoice and pay the same into the Government Treasury and issue Tax Collection Certificate .Kindly note that the Tax collection will be only on your companies aggregate turnover exceeds Rs 50 lakhs and will apply from beginning.
4. Please inform us your GST Number and its effective date.
5. The prices quoted are based on the prevailing manufacturing costs and are subject to increase or decrease depending upon any change in the manufacturing costs in relation to costs of raw materials, excise-duty, labour charges, costs of imported components, import duty, rate of exchange and Govt. Licensing Policy regarding import of components, etc.
6. Please send us 33% amount i.e. Rs.....as a deposit by a demand draft or Bankers Cheque payable at Mumbai in the name of 'IEEC POWER ELECTRONICS PVT. LTD'. For the balance amount we shall send you proforma invoice and the same should be paid by a demand draft payable at Mumbai. No up country cheques will be accepted.
7. Please inform us the name of Transport Company through whom the Supply is preferred.
8. Please note we will not cover the insurance for the above mentioned material. You will require to insure the material at your end. We shall intimate you despatch particulars by a Email/Fax so as to enable you to cover the insurance.
9. Please note Insulation Sleeves, Insulation Coating, Polyester Films, Lamps, Transformer Oil, Ceramic Tube Electrodes, H.T. Wire, Magnetic Powder Kit, Photocell, Thermocouples, LDR, PT/100, Thermistor, STR Probes, fuses, Frictionless Air Cylinder, Brushless DC Motor, spares supplied do not carry any guarantee.
10. Please Note, we will send copies of documentation, the Transporter copy with the transporter and remaining will be sent either by courier or Registered A/D.
11. Please note, if above copies get misplaced by courier or in post, we are not responsible for the same.
12. During warranty period if any service is rendered then, lodging and boarding for our engineer will be borne by you.

We hope our offer will meet with your approval and look forward to the pleasure of receiving your valued order, which will receive our closest attention.

Thanking you and assuring you of our best services at all times.

Yours faithfully,

For IEEC Power Electronics Pvt Ltd

PRAMOD ARAGE

(Sales Manager – Key Accounts)

+91 9324916010

Ref : B S NEGI/PNA/2202/CT-1100-5KW/Q/1/831

Date : 09th February, 2022

ANNEXURE – A

TECHNICAL SPECIFICATION FOR IEEC HIGH FREQUENCY MICRO CONTROLLER BASED FULLY DIGITALIZED CORONA TREATER GENERATOR WITH IGBT

OUR MODEL RFG5

Mains supply

415V AC \pm 5%, 3-Phase, 4-Wire

Mains frequency

50 Hz \pm 5%

Approximate Power

5 KW

Output Frequency

15 KHz to 50 KHz

Inverter

Using latest IGBT technology

Corona Output

a) Constant Power at same speed.

b) No influence of supply voltage

General description of the Generator

- Generator can be interfaced with a PC to print out the logged data as well as the history of faults and tripping. **(Read Only)**

- The **4.5" Colour Touch screen HMI** will be used to control Auto watt density control & all other operating parameters can be set with the keypad on the **HMI**.

- The **HMI** incorporates features such as

a) Fault Analysis

b) Troubleshooting Guide

c) Graphical Trends

d) Alarm & Audit history with USB backup

- The **HMI** will display all the running parameters such as

a) Inverter Frequency

b) Link Voltage

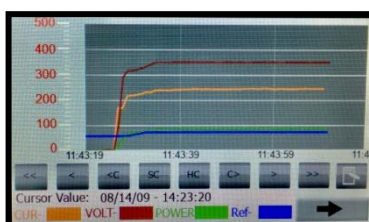
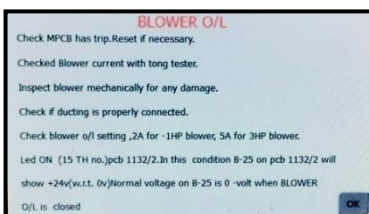
c) Link Current

d) Inverter Power

e) Machine Speed

f) The display will also indicate fault tripping such as

▪ Under Voltage	▪ Electronic Overload.
▪ Single Phasing	▪ Off Tune Trip
▪ Zero Speed	▪ Spark trip
▪ Electrode Assembly Open.	
▪ Ozone extraction Overload.	
▪ Thermal trip for Heat Sink & HT Tank Oil	



Time	Description
13 Jun 2018 12:23:54	ZERO SPEED TRIP
13 Jun 2018 14:20:58	SPARK TRIP
13 Jun 2018 16:03:28	ELECTRONIC O/L
13 Jun 2018 16:09:16	SPARK TRIP
13 Jun 2018 16:34:20	ELECTRONIC O/L

Ref : B S NEGI/PNA/2202/CT-1100-5KW/Q/1/831

Date : 09th February, 2022**Controls**

- a) The HMI will register the last tripping and fault that has occurred and display alarm signals and indications.
- b) In Auto Mode the power of the System will be set automatically depending upon the line speed. (Auto Watt Density Control) (% Power Set acting as Auto watt Power Set)
- c) % Power / Auto watt
- d) Corona Start/Stop/Reset
- e) Auto/Manual Control selectable by Keypad of MMI.

Protections

- a) Under voltage.
 - b) Single Phasing.
 - c) Electronic Overload
 - d) Zero Speed
 - e) Spark Gap.
 - f) Electrode Assembly Open
 - g) Ozone extraction overload trip.
 - h) Thermal trip for Heat Sink & HT Tank Gel.
 - i) Off tune trip.
- Audio / Visual
45°C maximum

Alarm

Maximum Temperature

Ref : B S NEGI/PNA/2202/CT-1100-5KW/Q/1/831

Date : 09th February, 2022**ANNEXURE-B****GUARANTEE / WARRANTY**

Guarantee / Warranty for the Corona Treater will be for a period of 12 months from the date of invoice against any manufacturing defect. The provisions of our product guarantee/warranty are as under:-

1. The instrument will perform in full accordance with applicable specifications.
2. If, within the Guarantee/Warranty period, it is found, after examination by us, not to meet this standard then it will be repaired free of cost by us. The repair will be carried out by our official repairer **IEEC POWER ELECTRONICS PVT.LTD.** The transportation to & fro cost and lodging & boarding would be borne by the purchaser. Any component failure due to manufacturing defect will be replaced free of charge after inspection.
3. This guarantee/warranty shall only apply if the instrument is used properly as per 'Directions for Use' supplied by us. Any defect caused by accident, misuse, neglect, alteration or modification, of which we shall be the sole judge will automatically terminate our obligations under this guarantee/warranty.
4. All vaccumatic & semiconductor devices, meters, lamps, cables, Insulation Sleeves, Ceramic Coating, Transformer Oil, Ceramic Tube Electrodes, Ceramic / PTFE Insulators, H.T. Wire, fuses, Brushless DC Motor & spares shall be beyond the scope of this guarantee / warranty.
5. On part or product not manufactured by **IEEC POWER ELECTRONICS PVT.LTD** the guarantee/warranty is limited to the extent as given by the supplier of such parts or products.
6. If any part / product fail due to manufacturing defect then it will carry a guarantee. If it fails due to bad handling or due to the supply voltage variation then it will carry no guarantee and it will be replaced on chargeable basis.
7. This guarantee/warranty is in lieu of all other guarantees expressed or implied and in no event will be liable for any loss or consequential damage.