

PUFFED RICE PLANT – 100 TPD

Complete Automation, Monitoring & Energy Management

1 RAW MATERIAL IN - Paddy / Rice Inward - Weighbridge - Truck Unloading - Pre-Cleaner	2 PRE CLEANING - Vibro Separator - Destoner - Magnetic Separator - Aspirator	3 SOAKING SYSTEM - Soaking Tank - Water Level Control - Drain Valve	4 DRYING SYSTEM - Hot Air Dryer - Temperature Control - Moisture Control	5 PUFFING SYSTEM - Puffing Machine - Steam Control - Pressure Control	6 SEASONING SYSTEM - Seasoning Drum - Steam Mixer - Steam Dosing	7 COOLING SYSTEM - Fluid Bed Cooler - Air Flow Control	8 PACKAGING SYSTEM - Auto Weigh Filler - Pouch Packing - Date Coding	9 LABELING & CHECK - Label Applicator - Weight Check - Metal Detector	10 FINISHED PRODUCT OUT - Carton Packing - Box Sealing - Warehouse / Dispatch
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MAJOR EQUIPMENTS

- Raw Material Hopper
- Vibro Separator
- Destoner
- Magnetic Separator
- Aspirator
- Soaking Tank
- Hot Air Dryer
- Puffing Machine
- Steam Boiler
- Seasoning Drum / Mixer
- Oil Spraying System
- Fluid Bed Cooler
- Bucket Elevator
- Weighing & Packing Machine
- Conveyor System
- Metal Detector
- Labeling Machine
- Carton Sealer
- Palletizer / Stacker

RAW MATERIAL IN

- Truck In / Gate Open
- Weighbridge
- Sample Collection
- Moisture Check
- Quality Check
- Raw Material Storage



PROCESS FLOW DIAGRAM



CAPACITY: 100 TPD (TONS PER DAY) | OPERATING HOURS: 20-22 HRS / DAY

FINISHED PRODUCT OUT

- Product Conveyor
- Weigh Check
- Metal Detector
- Carton Packing
- Box Sealing
- Palletizing
- Dispatch / Lorry Out



UTILITY SYSTEMS

- Steam Boiler
- Air Compressor
- Metal Detector
- Cooling Tower
- Water Softener
- RO Plant
- ETP (If Applicable)
- DG Set (Backup)

ENERGY METERING & POWER SYSTEM

- 33 KV / 11 KV Incoming
- HT VCB Panel
- Transformer (11 KV / 433V)
- LT Panel (PCC)
- Energy Meter
- Power Analyzer
- Capacitor Bank
- DG Synchronizing Panel



MULTIPLE I/O SUMMARY

ANALOG INPUTS (AI)

- Temperature (Dryer Inlet)
- Temperature (Dryer Outlet)
- Moisture (Dryer Outlet)
- Soaking Tank Level
- Steam Pressure (Boiler)
- Puffing Chamber Pressure
- Oil Temperature
- Air Flow (Dryer)
- Air Flow (Cooler)
- Weight (Weighbridge)
- VFD Speed Feedback
- Energy Meter (kW, kWh)
- Voltage (R-Y, Y-B, B-R)
- Current (R, Y, B)
- Power Factor

TOTAL AI: 15

DIGITAL INPUTS (DI)

- Truck In / Gate Open
- Truck Out / Gate Open
- Emergency Stop (All)
- Motor Overload (All)
- VFD Fault (All)
- Low Steam Pressure
- High Steam Pressure
- Oil Level Low
- Dryer High Temp Alarm
- Metal Detector Fault
- Weigh Machine Ready
- Carton Sealer Ready
- Door Open (Panel)
- Fire Alarm
- Water Level Low

TOTAL DI: 15+

ANALOG OUTPUTS (AO)

- VFD Speed Reference (Dryer Fan)
- VFD Speed Reference (Cooler Fan)
- Oil Spray Flow Control
- Steam Control Valve
- Soaking Tank Inlet Valve

TOTAL AO: 5

DIGITAL OUTPUTS (DO)

- Material Feed Conveyor
- Pre Cleaner Blower
- Soaking Pump
- Dryer Burner / Heater
- Puffing Machine Motor
- Steam Valve Open / Close
- Seasoning Drum Motor
- Oil Spray Pump
- Cooler Blower
- Packaging Machine Start / Stop
- Conveyor Motors (All)
- Bucket Elevator
- Carton Sealer ON / OFF
- Palletizer ON / OFF
- Alarm Buzzer / Horn
- Tower Light

TOTAL DO: 20+

INSTRUMENTATION

- | | |
|-----|--------------------------------|
| TT | TT – Temperature Transmitter |
| PT | PT – Pressure Transmitter |
| LT | LT – Level Transmitter |
| FT | FT – Flow Transmitter |
| WT | WT – Weight Transmitter |
| VFD | VFD – Variable Frequency Drive |
| EM | EM – Energy Meter |
| PM | PM – Power Meter |
| CT | CT – Current Transformer |
| VT | VT – Voltage Transformer |

PLANT HIGHLIGHTS

- ✓ 100 TPD Fully Automatic Plant
- ✓ SCADA / HMI Based Monitoring
- ✓ Real-time Data Logging & Reports
- ✓ Energy Monitoring & Cost Analysis
- ✓ Alarm & Event Notification (SMS/Email)
- ✓ Batch & Traceability Management
- ✓ Recipe Management (Seasoning)
- ✓ Preventive Maintenance Management