



END TO END PLANT AUTOMATION FOR AGILE MANUFACTURING

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OVERVIEW

We provide end to end plant automation and turnkey project execution in a wide variety of industries and processes. We combine our multi-disciplinary engineering expertise (mechanical, electrical, electronics, instrumentation, PLCs, SCADA, computers and software) with deep domain knowledge to undertake fixed price contracts for projects costing Rs 100 lacs to Rs 2500 Lacs.

Modernization of existing plants and automation of specific processes are also undertaken.

The leadership team at Autosys and Koremec have been working together for 20+ years, and have a cumulative experience of over 100 years in Instrumentation, Process Control and Automation. The team has executed over 400 projects for industry leaders and global MNCs, exceeding customer expectations every time, on performance, reliability and quality.



CONSULTING AND ENGINEERING SERVICES

We provide consulting and engineering services in areas such as

- OEE improvement, De-bottlenecking, Process Optimization, MES Software
- Material handling, Batching, Weighing, Dispensing and Dosing
- Instrumentation, Control and Telemetry
- Control and MCC Panels

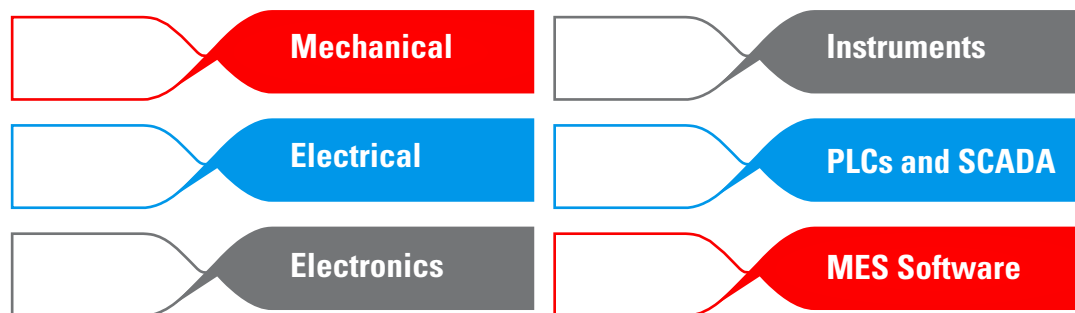
This includes Engineering, Documentation, Procurement assistance, Vendor management, Verification of supplies, Quality checks, Standards and Testing compliances, Supervision of erection and commissioning, Integration of vendors and Project management.

By engaging us, clients achieve cost reduction, improved quality and timely completion.



FIXED PRICE EPC CONTRACTS AND BOT CONTRACTS

We offer EPC turnkey contracts on fixed price basis with guaranteed performance, quality and throughput. We will source, manufacture, integrate, deliver and commission everything required for a project across multiple disciplines:



BOT (Build – Operate – Transfer) model is also offered on select verticals such as Refractories, Ceramics, Friction Material and Animal Feeds.

CAPABILITIES

- Consulting for Greenfield Projects
- Project Management & Turnkey contracts
- OEE Improvement and De-bottlenecking
- Automated Material handling (IN gate to OUT gate)
- Automatic Weighing and Batching (Grams to Tons, Solids & Liquids)
- Automatic Dosing Systems (up to 1 gram accuracy, BD upto 0.15)
- PLC / DCS / RTUs / SCADA
- Reporting and MES Software
- Networking and Remote management
- Instrumentation & Telemetry
- MCC and Control Panels.



SOFTWARE FOR AGILE MANUFACTURING

Today's business leaders demand detailed and accurate information on capacities, utilization, cycle times, supply chains and asset efficiencies. Live data and information coming from the shop floor, expertise and knowledge accumulated over the years, innovation and insights that perish fast - all these are scattered across disparate layers and levels in the organization. At each level, the people, the systems and the underlying IT software – all speak their own language. Integrating all these is challenging and expensive.

LEVEL	PEOPLE	SYSTEMS
0	Shop floor operating staff	Physical processes
1, 2	Supervisory staff	Machines, Process Control Systems, PLCs and SCADA
3	Managers, Operations	MES Software , Production scheduling and Optimization
4	Plant Management	Business Planning and Logistics, Traceability and genealogy
5	Top Management	ERP, Financial & Inventory Systems

Level 3 and 4 MES Software

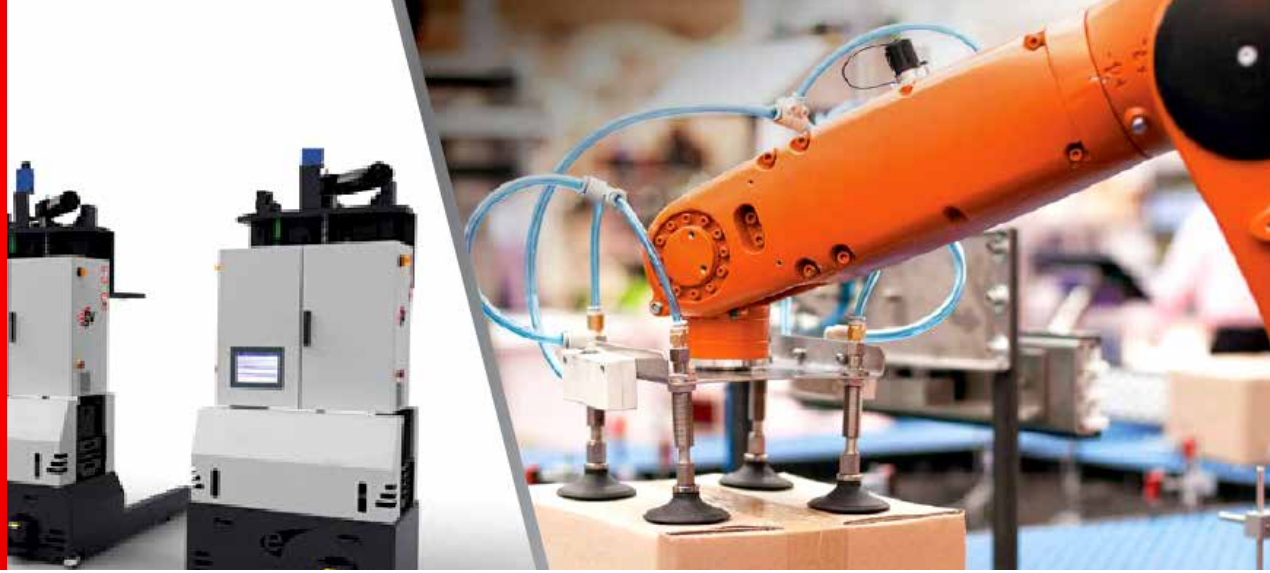
We focus on mid-level MES solutions (Level 3 and 4, between ERP and PLCs) for the manufacturing sector. Sandwiched between two seemingly incompatible worlds of machine language and business language, between operations and business leadership, we bridge this chasm with ease.

From proprietary hardware controlled imported machines, to industry standard PLCs and DCS systems, from M2M communication protocols to nation-wide networking of multiple plants, from stand-alone MES software to ERP integration – we can understand and appreciate the nuances of each system and level.

Our USP

The most expensive part of a software project in manufacturing is not the coding skills or tech skills. It is the ability and the time taken to understand the domain and the top level business drivers. Translate the operational and process requirements in to IT models. Harvest information from disparate machines and control systems. And most importantly the ability to sieve through a deluge of data, curate them in to relevant information and present them in a format that is tailor made to each level of management.

With a strong background in Industrial Automation and Turnkey project execution, We are uniquely positioned to meet these challenges and more. All projects follow and comply to ANSI / ISA 95 standards.



HUMAN TASK AUTOMATION

We focus on automating human tasks with the help of electropneumatics, robotics and automated guided vehicles (AGVs).

From simple tasks such as nailing, glazing and spray painting to complex tasks such as packing a washing machine, We can provide custom built HTA solutions for any industrial application.

Our USP

Automating a human task is not as simple as buying a robot and fixing it. Many times, it involves integration of multiple electromechanical- pneumatic sub systems, off the shelf robotic arms, custom made grippers and handlers, presentation stacks, SPMs, AGVs and so on. Designing, engineering and integrating these sub systems require strong multi-disciplinary expertise. With a strong background in Industrial Automation and Turnkey project execution, We are uniquely positioned to meet these challenges and more.

ROBOTIC SOLUTIONS

We provide custom solutions using industry standard 4-axis and 6-axis robots that can handle pay loads of up to 190 Kg running on a single control platform. Specialized robots for painting, clean room, plastics, machine-tools, etc. are also used.

INTELLIGENT AGV SYSTEMS

AGV's or Automated Guided Vehicles are Mobile Robots that provide a cost efficient internal transport solution for industries & applications where flexibility, accuracy, reliability & safety are required. Our ability to integrate cost effective solutions using plug and play products, takes AGVs from a "nice to have" to a "must have" automated material handling solution.

SPECIAL PURPOSE MACHINES

SPMs can be developed for any application – combining mechanical, pneumatics and drives, controlled by industry standard PLCs.

APPS

APPS are the new SOFT ROBOTS that can cost effectively automate many a human task on the manufacturing floor. From a Java / embedded application that can pull data from a micro controller based OEM machine to an Android App that a QC inspector uses to fill up Quality / Defect data, there are many opportunities for APPS to improve productivity in the manufacturing sector. We combine our software capability and manufacturing domain knowledge to build apps that substitute any time consuming human task.



PARTNERS

We are an Authorized System Integrator of Rockwell Automation for PLCs, SCADA, Drives and Software. We provide MCC and Control panels incorporating switchgear components from various reputed vendors like Rockwell, Siemens, Schneider, L&T and ABB. We provide weighing solutions from world leaders such as Metler and Diniargeo.

Instruments like flow meters, level transmitters, pressure transmitters, special purpose instruments, analyzers, vibration equipment etc. are sourced from world's leading manufacturers, as per project/customer requirements.

WEIGHING, BATCHING AND MATERIAL HANDLING PROJECTS

- Accurate and precise dosing of liquids / powders as low as 1 gram within time limits
- Weighing under dynamic conditions with stirrer and vibrating tank in formulation systems
- Mobile weighing
- Weigh feeders
- Batch weighing with screw feeders and Vibro feeders
- Monorail weighing
- Weighing with compliance to S88 Standards
- FDA regulated traceability standards in batching and weighing
- Batching and dosing of difficult to flow materials with very high / very low bulk density
- Custom design of multi-speed feeders after determining flow characteristics of materials

INSTRUMENTATION, CONTROL AND TELEMETRY PROJECTS

We have extensive experience in control and instrumentation projects related to Infrastructure, Water and Waste-water.

- Reservoir monitoring and control
- Canal automation
- Lift and piped irrigation
- Industrial water pumping & transmission
- Water treatment & distribution
- Effluent treatment
- Sewage pumping & treatment



The technical expertise includes:

INSTRUMENTS	CONTROL	TELEMETRY	IT
Flow, Level, Pressure, Analyzers (Flow up to 1600 mm dia)	Motors, Valves, Actuators, VFD Drives, MCC & Control Panels, PLCs Dual Redundant systems	GPRS-2G-3G, RF-Radio, VSAT, Fibre, Remote networking of PLCs (300+ locations)	Web/Cloud, SCADA, Servers, Networks, Large and Matrix Displays

EXPERIENCE WITH OIL AND GAS INDUSTRY

One of the large projects executed by us, is for an Oil and Gas MNC. The scope includes complete Design, Engineering, Documentation, Supply, Installation and Commissioning of the Instrumentation package for their ETP project inside their refinery complex. The project complies with ATEX and CCOE standards.

EXPERIENCE WITH LARGE SCALE PLC / DCS / RTU PROJECTS

We have experience in handling various makes /models of PLCs / DCS / RTUs involving following different type of communications

- Ethernet IP/ Device net / Modbus TCP-IP
- Profibus, Profinet
- RTU communication
- Modbus RTU, ASCII, 485/RS232/422
- Wireless telemetry, VSAT, GSM, GPRS
- Automatic SMS and Email integration

PLC applications

- Weighing and Batching
- Instrumentation in Chemical, Oil and Gas
- Material Handling
- Heating and furnace control
- OEM solutions
- Safe area applications, ATEX / CCOE certified systems
- Material tracking / traceability



SOME OF THE SAMPLE PROJECTS ARE LISTED BELOW

Raichur Power 2 X 800 MW

Induced Draft Cooling Tower and Water Treatment Plant (IDCT and WTP)

Mainilad Philippines

Technology Upgradation and Capacity Addition for RO Plant

Ramco Industries

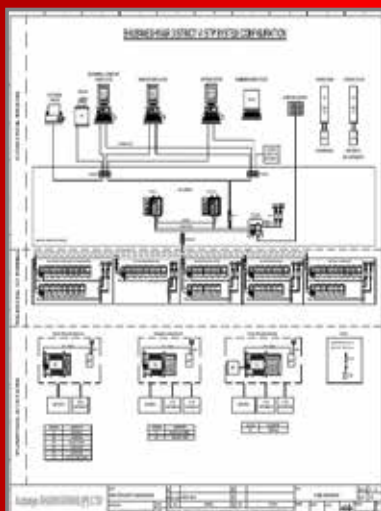
Roofing sheet manufacturing plants – 9 locations across India

Orissa Water Board

48 MLD Sewage Treatment Plant with 48 pumping stations

Chennai Metro Water

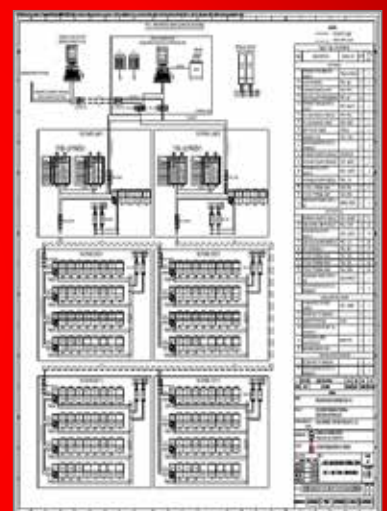
Data acquisition, Telemetry and Centralized Monitoring of Reservoirs, Water Treatment Plants, Water Distribution Systems and Sewage Pumping Stations



BHUBANESHWAR DISTRICT VI STP SYSTEM CONFIGURATION



BOARD MANUFACTURING COMPLETE PLANT AUTOMATION (5000+ I/Os)



INDUCED DRAFT COOLING TOWER CONFIGURATION



PANEL MANUFACTURING

Apart from manufacturing panels for our own projects, We also undertake outsourced contract manufacturing of CPRI certified panels for large OEMs and EPCs.

- MCC panels, Drive panels, Drawout MCCs, Intelligent MCCs
- Control panels, PLC desks, RTU, MMI and SCADA panels
- DG Sync panels, APFC panels, LT and MV panels



PRODUCT DIVISION

Our product division is focused on providing standardized products for many applications such as :

- Fibre dosing for Roofing Sheet, Concrete and Cement industries
- Preform dosing for friction material industry
- Bagging machines for open mouth bagging of 25 to 75 Kg Bags
- Jumbo bag filling machines
- Bag placer automation for automatic pick, open and place of bags at 240 Bags per hour.
- Lorry loading systems.



EXECUTION TEAM

More than 90% of our employees have technical / engineering background in disciplines such as Electronics, Instrumentation, Software and Mechanical.

The following are the various processes that we follow in executing a project.

- System Study
- Design Engineering & Detailed Drawings
- Procurement
- Manufacturing / Integration
- Inspection & Testing
- Installation
- Commissioning
- Training
- Service & Annual maintenance contracts

AUTOSYS - KOREMEC RELATIONSHIP

Koremec is an associate company of Autosys focusing on Consulting, Software and Robotic Solutions.

We are proud to have worked with the following clients





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