



TO BE A WORLD CLASS COMPANY IN INDUSTRIAL AUTOMATION



CONCEPTS TO SOLUTIONS

MELSS Automation Limited (MAL) provides cost effective solutions to a wide range of Industrial Automation applications. They can be broadly classified in to the following categories:

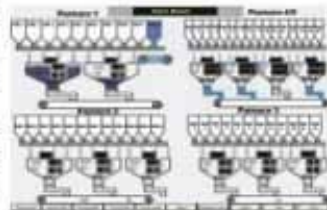
Material Handling Automation



One of the most critical components of any Industrial Automation solution is material handling. From simple silos, conveyors, bucket elevators and pneumatic conveying systems to complex systems and special

purpose machines that require custom design, MAL experience in this area is wide and deep. MAL is also well known for its innovative solutions to handle materials that have difficult flow characteristics, whether they be solids, liquids or gases.

By innovatively combining mechanical ingenuity, electronics intelligence and human supervision, MAL provides cost effective solutions with optimum labour-capital ratio, to suit the unique needs of each customer.



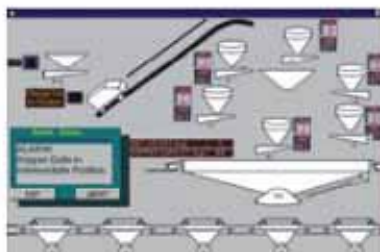
Some examples:

- Complete material handling automation for Sand plant in Foundry; Ferro-alloy plant; Coffee plant; Abrasives plant; Animal-feed plant
- Conveyor to monorail and monorail to conveyor - material transferring system
- "Very Small Quantity" material retrieval system
- Mobile conveyors with flexible swivel, tilt and X-Y-Z movement
- Synchronized turning mechanism for wind mill blade assembly
- Special purpose machine for handling and stacking wet Boards

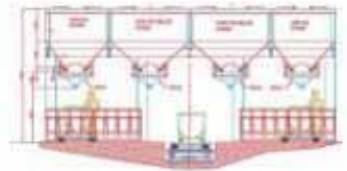
Automated Weighing and Batching

MAL has extensive experience in automated weighing and batching systems. By seamlessly integrating weigh

tanks, storage silos, automated material transfer systems, level sensors and electronic hardware MAL can set up a completely automated batching plant for any industry.



From simple 2 or 3 ingredients to processes where 34 ingredients are automatically batched within a small floor space of 540 SFT (with storage of 2 tons per ingredient), MAL has 100s of successful installations in this area, many of which are multiple repeat orders from same customers.



MAL has executed batching plants from 5 Kg to 100 Tons, with cycle times as low as 45 seconds and accuracies down to +/- 20 grams. All systems comply to S88 Standards.

While the core intelligence of the system is built around industry standard PLCs, MAL provides customized PC based man-machine interface to monitor and manage the batching plant, with features such as recipe management, raw material codification and MIS reports.

Monorail Weighing

This is one of the unique innovations of MAL. First developed for the tea industry to weigh wet green tea leaves coming in to the factory, MAL has implemented monorail weighing systems for many other industries. The system is not only capable of



calculating the weight per hanger, it can intelligently monitor the rate of flow of material in to the downstream process and automatically re-route the monorail path to parallel

production lines. This is to ensure that the material inputs are balanced across multiple lines of production. The material transfer in to (filling) and out of

(tipping) the monorail can also be automated and the system can be linked to upstream and downstream control systems. MAL monorail weighing system is model approved by the Indian Weights & Measures Department.



PLC based Control, Instrumentation and SCADA



MAL executes complex C&I / SCADA systems for many industries using industry standard PLCs, field transmitters, field switches etc.

Some Examples:

- Furnace and kiln control systems
- Water treatment plants
- Cooling towers; Boilers
- Sewage and effluent treatment plants
- Process control for tea, sugar and food processing plants

The MAL SCADA software developed on a PC platform, provides complete monitoring, mimicking and animation of the plant process, alarms and annunciations, data logging, trend graphs, MIS reports etc.

Control and MCC Panels

MAL can design, fabricate and supply control and MCC panels complete with inbuilt electrical switchgear, process instruments, recorders, annunciators, mimic panels, consoles and operator interfaces. Design, testing and documentation of these panels confirm to ANSI and ISA standards.



Mini-ERP for Manufacturing SMEs

Using the insight and experience of working with various manufacturing industries for over 2 decades, MAL has been able to develop and deploy custom built Mini-ERP packages for many of its customers in Sugar, Distillery, Ferro Alloy and Animal Feed Industries. MAL also has the experience of interfacing its process automation and production management modules to industry standard ERPs like BAAN and SAP.

The MAL Mini-ERP includes purchase, inventory, sales, assets, accounting interface and customized report generation modules. The highlight of MAL Mini-ERP is its ability to seamlessly collect and assimilate information from the production processes through special interfaces to automation systems and machines.

MAL also specializes in providing industry specific modules such as **E-Cane**. E-Cane is an enterprise wide cane management solution meant for sugar industries with one or more factories, wide spread cane collection points and contract farming arrangements with 1000s of farmers.

Standard Products



In addition to providing customized solutions on a project basis, MAL also sells and supports the following standard products:

- Tank and bin weighing systems
- Electronic weighbridges from 20 tons to 100 tons
- Standard monorail weighing kits
- Weight indicators and Batching controllers

All our products are model approved by the Indian Weights and Measures department.

Represented Products

MAL also represents many foreign principals for the sales and support of products related to industrial automation: Some of them are listed below:

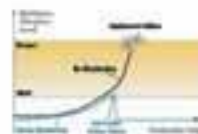
HARDY INSTRUMENTS Weight Indicator www.hardyinst.com

Hardy's weight indicator is specially meant for in process weighing of agitating and vibrating equipment. The unique Waversaver technology from Hardy filters dynamic vibrations without sacrificing on the resolution or accuracy of weighing.



HARDY INSTRUMENTS Condition Monitoring Systems www.hardyinst.com

Hardy offers vibration and tension monitoring systems for applications such as turbines, pumps etc. Statistical analysis is done and the maintenance department is informed of the condition of the equipment, so that timely preventive maintenance could be undertaken.



L Weight Indicators and Controllers www.leon-engineering.com

Leon offers battery operated low cost weight indicators with high resolution and accuracy. The unique "one digital junction box for each load cell" concept from LEON, allows the user to transmit the weight signal from the field to the indicator through a digital RS 485 communication bus. Drifts are compensated and corner variations are avoided. Leon also offers low cost batching controllers and bagging / packing controllers.



ADLINK TECHNOLOGY INC. Data Acquisition systems www.adlinktech.com

Adlink offers data acquisition cards, industrial computers, PXI /cPCI based systems and machine vision products for vision based measurement and analysis.



About MAL

MELSS Automation Ltd, a subsidiary of MEL Systems and Services Limited and an associate of the USD 1.5 billion Murugappa Group, has been a pioneer in Industrial Automation Solutions since 1982. Over the last two decades, we have acquired expertise and specialized knowledge in many industries and processes. But what makes us stand out, is our deep commitment to support and the values and principles that we have inherited from our parent group.

Our Core Competence : Understanding customers' manufacturing process, Conceptualizing automation needs, and Providing cost effective solutions.

Our Expertise : Design and Engineering, Sourcing and Vendor Management, Hardware and Software Development, Project Management, Offsite and Onsite Integration of Mechanical, Electrical, Electronics, Instrumentation, Computers and Software Systems.

Process and Domain Knowledge : Over 600 project installations in Tea, Coffee, Sugar, Food Processing, Animal/Poultry feed, Ferro Alloys, Steel, Abrasives, Refractories, Chemicals, Pesticides, Light Engineering and Auto Component industries.

For further information please contact us. Our Application Specialists will assist you with the right solution



MELSS Automation Ltd

(A Subsidiary of MEL Systems and Services Ltd)

123 Developed Plots Estate, Perungudi, Chennai - Pin 600096, India .

Tel : +91 44 2496 1911. Telefax : +91 44 2592 0488.

E-mail : mal@melss.com. www.melssautomation.com

Branches in Delhi, Mumbai, Hyderabad, Bangalore, Coimbatore