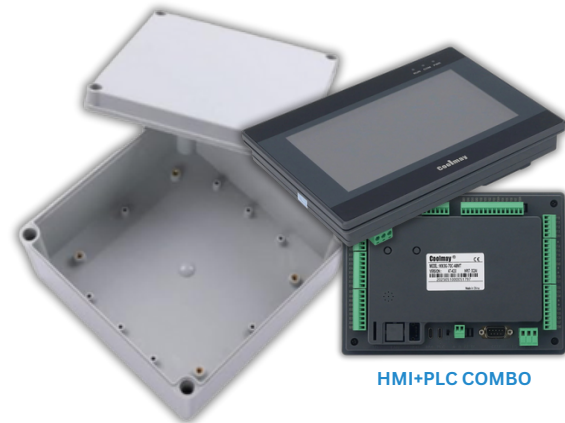




Automation Control Panel





- **Schneider PLC & HMI** – proven reliability, good service support in India.
- **Robust build:** industrial enclosures (IP54 / IP65 / IP66 depending on requirement), stainless steel or food-grade paints, hygienic finish for F&B.
- **Power protection:** built-in surge protection, isolation transformers, UPS (for critical pharma/F&B lines) to ensure uptime.
- **Communication & Connectivity:** Ethernet, Modbus TCP, Modbus RTU, Profinet (if needed), OPC UA / MQTT for IIoT / remote monitoring.
- **IO types:** digital (inputs/outputs), analog (4-20 mA, 0-10V), RTD / thermocouples, high speed counters, specialty IO (pH, conductivity).
- **Safety & Interlock:** Emergency stops, overload protection, interlocks, contactors, safety circuits.
- **User interface:** HMIs with recipe management, alarm screens, trend graphs, data logging, multilingual support.
- **Hygiene / Compliance:** For food & pharma, smooth surfaces, sealed doors, easy wash-down, compliance-friendly materials.
- **Documentation & Support:** Wiring diagrams, IO lists, PLC programme structure, FAT (Factory Acceptance Test), SAT (Site Acceptance Test). For pharma: validation documentation, traceability.

| Industry / Product Line | Typical Machines & Panels Covered | Key Differentiators |
|------------------------------------|--|--|
| Food & Beverages Series | Cup-Cone filling machine, Bottle making machine, Candy making machine, Continuous Freezing (CF) machine | Food-grade design, hygienic stainless steel enclosures, recipe control, wash-down resistant, compliance with FSSAI/HACCP |
| Pharma Series | Liquid filling, Labelling machine, Capping machine, Rubber inspection machine, Tablet packing machine, ETO (Autoclave machine) | GMP/cGMP compliant, pharma documentation (IQ/OQ/PQ), validated control systems, high reliability, traceability features |
| Packaging Industry Series | Bag filling machines | Accurate dosing, weight monitoring, conveyor synchronization, robust PLC/HMI solutions |
| Renewable Energy Series | Biogas plants, Process panels, Biodiesel plants | Integration with process sensors, safety interlocks, explosion-proof design where required, SCADA/remote monitoring |
| Engineering Industry Series | Keyway machine, Drill machine, Pipe bending machine, Copper plate bending machine | Heavy duty motor starters & VFDs, interlocks, precision motion control, modular panel designs |
| Wood Industry Series | Edge bending machine, Cold press, Auto panel saw | Multi-motor coordination, safety interlocks, precise heating/pressure control, reliable production automation |
| Water Management Series | ETP/STP plants | pH/ORP/flow/level monitoring, auto dosing, blower & pump control, PCB compliance data logging |
| Laser Industry Series | Laser cutting machine, Marking machine | High-speed IO handling, precise motion & beam control, operator safety interlocks, HMI recipe storage |
| Hydraulic Industry Series | Miscellaneous hydraulic press & forming machines | Pressure/temperature monitoring, proportional valve control, safety interlocks, ruggedized panels |
| Motor Winding / Unwinding Machines | Coil winding, rewinding, tension control systems | Closed loop torque & speed control, synchronized winding/unwinding, high-precision process management |
| Railway Industry Series | All kinds of track testing machine panels | Rugged design, portable/field use enclosures, vibration resistance, compliance with railway safety standards |
| Special Purpose Machines (SPM) | Customized panels (Hydraulic pressing machines for garbage like polythene, cardboard, etc.) | Tailor-made automation, integration with customer's mechanical design, cost-effective but reliable control |



Process Automation
Control Panel



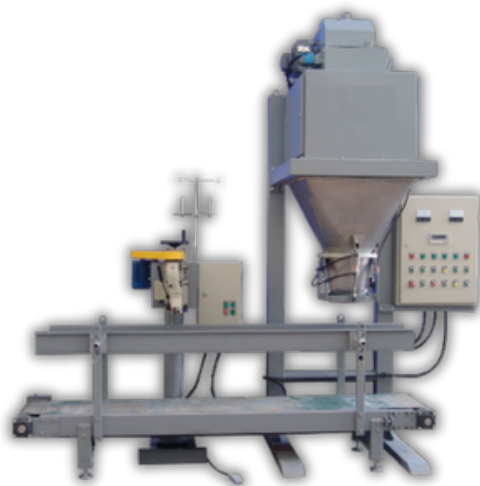
Liquid Filling Machine
Control Panel



Bio Gas Plant
Control Panel



Cup-Cone Filling Machine
Control Panel



Bag Filling Machine
Control Panel



Bottle Making Machine
Control Panel

Technical Specifications

| Parameter | Typical Value / Options |
|---------------------------|---|
| PLC CPU | Schneider Modicon M200 / M221 / M340 depending on IO and complexity. You can expand the IO with Expansion Module. |
| HMI | Schneider Easy Harmony HMIs (4-7-10 inch) touchscreen, color, multi-lingual |
| Digital Inputs | 24 V DC, up to e.g. 32 / 64 / 128 DI depending on panel size |
| Digital Outputs | Relay / Transistor, 24 V DC or 230 V AC depending on load |
| Analog Inputs | 4-20 mA / 0-10 V / RTD / Thermocouple (Pt100, etc.) |
| Analog Outputs | 4-20 mA / 0-10 V |
| Power Supply | 230 V AC / 415 V three phase (as required) with internal DC 24 V / 5 V supplies |
| Enclosure | IP54 / IP65 / Food-grade stainless steel / Powder coated mild steel / Flameproof Enclosure. |
| Ambient Temperature | 0-50 °C (standard), with option for -20 to +60 °C if needed |
| Humidity | Up to 95% RH non-condensing |
| Cooling / Ventilation | Natural ventilation / forced air / air-conditioned panels for heat sensitive PLC or VFDs |
| Size / Mounting | Wall-mount / floor / skid mounted; custom-made to size |
| Safety Standards | CE / IEC / IS / BIS; Food contact safe materials if applicable; Pharma: GMP / cGMP guidelines |
| Certifications (optional) | IP rating, UL / CE marking, HACCP compliance for F&B, FDA / GMP for pharma, HACCP etc. |

| Machine | Usage / Application |
|------------------------------------|---|
| Cup-Cone Filling Machine | Automatic ice cream filling and capping operations with recipe-based controls. |
| Bottle Making Machine | Controls heaters, blowers, hydraulic & pneumatic units in PET preform blowing. |
| Candy Making Machine | Automation of cooking, forming, cooling, and wrapping processes. |
| Continuous Freezing (CF) Machine | Temperature and flow regulation for ice-cream continuous freezing and mixing. |
| Liquid Filling Machine | High accuracy dosing, pump/motor synchronization, no-bottle-no-fill logic. |
| Labelling Machine | Precision label application with conveyor synchronization. |
| Capping Machine | Torque & speed controlled capping with interlocks. |
| Rubber Inspection Machine | Automated defect detection & sorting control. |
| Tablet Packing Machine | Blister/sealing automation with servo/stepper drives. |
| ETO (Autoclave Machine) | Temperature, pressure, and sterilization cycle control with safety logging. |
| Bag Filling Machine | Gas production monitoring, blower/pump automation, safety interlocks. |
| Process Panels | Oil & gas critical process monitoring with high safety. |
| Biodiesel Plant | Automation of reactors, pumps, heating, dosing, and filtration units. |
| Keyway Machine | Motion control for keyway slot cutting. |
| Drill Machine | Automated drilling cycles with depth/torque monitoring. |
| Pipe Bending Machine | Precision hydraulic bending control with safety interlocks. |
| Copper Plate Bending Machine | Accurate angle bending with hydraulic & PLC logic integration. |
| Edge Bending Machine | Automated trimming, gluing, and edge finishing. |
| Cold Press | Control of pressing cycle, temperature, and safety interlocks. |
| Auto Panel Saw | Cutting automation with conveyor and blade synchronization. |
| ETP/STP Plants | Monitoring pH, turbidity, flow, auto dosing of chemicals, blower/pump control, PCB compliance data logging. |
| Laser Cutting Machine | High-speed motion & cutting control with CNC-like precision. |
| Laser Marking Machine | Recipe-based marking control for batch/serial codes. |
| Miscellaneous Hydraulic Machines | Pressure/flow regulation, interlocks, safety shutoffs. |
| Motor Winding / Unwinding Machines | Automated coil winding/unwinding with tension control, torque monitoring, and synchronization. |
| Track Testing Machines | Rugged automation panels for field testing of railway tracks with vibration-resistant design. |
| Special Purpose Machines (SPM) | Hydraulic Pressing Machines (Garbage like Polythene, Cardboard, etc.) – Waste compaction cycle automation, hydraulic control, safety interlocks, overload protection. |

Here are two sample configurations to illustrate how panels could be specified:

Medium-Scale Food Filling Line Panel

- Schneider PLC: Modicon M200 with 24DI/16DO (You can expand the IO with Expansion Module)
- HMI: Schneider Magelis 10-inch
- IO: Analog sensors for level (4-20 mA), temperature, flow; digital for motor starters, solenoids, proximity switches
- Power supply: 230 V AC → 24 V DC
- Motor control: Contactor + VFD (for pumps / conveyors)
- Enclosure: SS304, IP65 front door, food-safe gaskets
- Communication: Ethernet + Modbus RTU backup
- Features: Recipe selection, alarm history, cleaning mode, spill detection

Pharma Tablet Coater Machine Panel

- Schneider PLC: Modicon M241 / M241 redundant (if needed)
- HMI: 12-inch touch, with pharma compliance (sealed screen, easy to clean)
- IO: Temperature, humidity sensors; digital interlocks; speed control; coating pan motor control; heater elements
- Power: 3-phase supply, fused, surge protection; backup power for critical IO
- Enclosure: SS316 where needed; IP65 / IP66; hygienic interior; easy access for service
- Documentation package: URS / FAT / SAT / IQ / OQ / PQ supporting documents

Ordering / Options

- Custom panel sizes
- Choice of enclosure materials & ratings
- Options for remote I/O modules (if field distance is large)
- Backup power / UPS inclusion
- Optional remote connectivity / IoT modules
- Spare part kits
- After-sales support & maintenance contracts