

# SAP E&C PLC BASED ELECTRO-HYDRAULIC SORTING MECHANISM (SAP-87)



PLC Based Electro Hydraulic Sorting Mechanism outlines the basic Principle of Hydraulic Control System, & its applications for Sorting Mechanism using PLC, electronic Proximity position sensor & electro-mechanical actuators (solenoid valves).



Photograph : Electro Hydraulic Sorting Mechanism

## ELECTRICAL CONTROL PANEL

- ❖ **PLC** Allen Bradley make Micro 830 / Pico / Eqvt.  
8 D.I., 4 D.O., Supply 24 V DC, with Programming Software & Communication Cable.
- ❖ **24V Power Supply** 24VDC, 3A Power source
- ❖ **Proximity Sensors** 1] Inductive type : 2nos., 3wire PNP type, 24 VDC, Sensing Distance: 7-10 mm,  
2] Optical Type: 2nos, 3 Wire, Sensing Distance: 10cm, 24 VDC
- ❖ **Indicating lamps** 24 V DC, On front panel for display of digital input/output status  
Amber : 10 nos., Red : 10 Nos.
- ❖ **Momentary Push Buttons** 24 V DC operated, 10nos.
- ❖ **Electrical Control Panel** :- MS Powder coated panel with switches, indicator, test Points, controller on front facia, UK 2.5 Terminal Connectors mounted on DIN rail channel, Use of 1sq mm multi-strand wire with proper insulated Lugs, Feruling & neat wire dressing & clamping. Wires & power cables are seated through 1''x1''PVC cable tray.

## HYDRAULIC SORTING SYSTEM

- ❖ **Oil Hydraulic Power Pack** MS Powder Coated Oil Tank, Capacity: 30 Ltr. with Oil Level Indicator, Oil filter & suction Strainer, Breather, Gear Pump: 3 LPM, 70 Bar,  
**Electric Motor:** 1Phase, 230 V AC, ½ HP / 3 Phase, ½ HP, 415VAC with DOL starter
- ❖ **Double Acting Cylinder** Mounting: Foot , 6 nos. ¼” connection
- ❖ **4/3 way Solenoid Valves** 3 nos, 24 V DC operated, ¼” Connection
- ❖ **Pressure Sequence Valve** 1 no. , Square Body, ¼’ Connection
- ❖ **P Manifold & T Manifold** 1 each, ¼”Connection,
- ❖ **Pressure Relief Valve** ¼” connection, 60 Kg/cm<sup>2</sup>
- ❖ **Pressure Gauge** Glycerin Filled, 0-100Kg/cm<sup>2</sup>, Dial Size: 4”
- ❖ **Blok Manifold** 1 no., ¼”Connection
- ❖ **Hydraulic Hoses** 12 nos. with Quick Release (QRC) Coupling.

## LIFTING MECHANISM

- ❖ **Chain-Sprocket** 1no.

**A Double Acting Cylinder is used for Lifting Up the Objects, thus forming a Lifting Mechanism. The Piston rod of the Double Acting Cylinder lifts the Object**

## CONVEYOR MECHANISM

- ❖ **Conveyor Belt** 1 no.
- ❖ **Roller Conveyor** 2 nos.

## SORTING MECHANISM

- ❖ **Sorting Mechanism is used to sort different Objects, such as Metallic Objects & non-Metallic Objects. A Double Acting Cylinder is used to sort the Object & push it off the Roller Conveyor.**
- ❖ **The Sorted Object is collected in a Chamber.**
- ❖ **Objects to be sorted:- Metallic & Non-Metallic Blocks, -3”(L)X3”(B)X3”(H)**

### Features:

- ❖ Compact Ergonomic Design.
- ❖ All Hydraulic components identical to those used in industry but transparent for easy grasping.
- ❖ User Friendly, Self Explanatory Systems.
- ❖ Leak proof Safety Measures, sturdy piping & Robust Construction.
- ❖ Training Manuals, mimic Charts for Operation Ease.
- ❖ System Frame with Caster Wheel Arrangement for ease in movement.
- ❖ M.S. fabricated powder coated with necessary fittings, couplings and hydraulic mountings.
- ❖ Inbuilt Safety Measures to avoid improper usage.
- ❖ Integration of Electronic, Instrumentation and Hydraulics in single unit.
- ❖ Detailed Operation & Instruction Manual

**Services Required:**

- ❖ Single Phase 230V AC / Three-phase supply of 415 V 50 Hz suitably used for direct on line starting of induction motor.

**Note:**

All descriptive matter and illustrations are intended to give only a general idea of the equipment. Detailed specifications may be altered at the company's discretion without any notice.

Manufactured/Marketed By		
<b>SAP ENGINEERS &amp; CONSULTANTS</b>		
Regd. Off.	: Shop No. 26-27,'Srushti', Survey No.82, Near Guru Ganesh Nagar, Eklavya College Road (D.P.Road), Kothrud, Pune - 411 038	
Telephone	: (020) 2538 4737	
Mobile	: 94220 88946, 95524 75082	
Fax	: (020) 2538 3544	
Email	: <a href="mailto:pravinsdeode@vsnl.net">pravinsdeode@vsnl.net</a> , <a href="mailto:sapengineerspune@gmail.com">sapengineerspune@gmail.com</a>	
Website	: <a href="http://www.sapengineers.com">www.sapengineers.com</a> / <a href="http://www.sapengineers.co.in">www.sapengineers.co.in</a>	