



Automatic Storage and Retrieval System	
No of Cells	36
Feed Motors and Drives	Digital Servo
X Axis	1.5 meter
Y Axis	1 Meter
Z Axis	1.6 meter
Motion	Linear motion guideways (Two parallel guideways and 4 LM blocks for each axis)
Fixture Clamping	Through Pneumatic Gripper
Structure	Heavy Duty Aluminum Extrusions
Transfer Stations	Two Minimum Size: 350mm x 550mm each
Overall Dimensions	3050(L) x 2100 (D) x 2600 (H) mm
Electrical Supply	415V, Three Phase Supply, 50 Hz
Control System	
PLC	Siemens S7 1200
Operation	Through HMI Siemens S7 1200
Communication Protocol	Profinet / Ethernet
Accessories	
Gripper	7 KG Payload at 5 Bar (Make: Festo / SMC)
Stabiliser	2 KVA Servo Stabiliser
Indication	3 storey tower lamp
Fixtures	36 Nos
Automated Guided Vehicle (Magnetic Strip Guided)	
AGV Controller	Brushed DC Motor Controller, Dual Channel, 2 x 60A, 60V
Track Setting	Magnetic Tape roll 150' (45.7m) long by 2" (50.8mm) wide
Track Protection	Protective Tape Roll 100' (30.5m) long by 3" (76.2mm) wide.
Track Sensing	Enclosed IP64 160 mm wide magnetic track sensor with 3-axis Gyroscope, serial, USB, analog, PWM and CAN output
Overall Dimensions	800(L) x 450(W) x 750(H) mm
AGV Control System	
PLC	Siemens S7 1200
Operation	Through HMI Siemens S7 1200
Communication Protocol	Wireless
Track Sensing Cables	Cable for MGSW, OTS and FLW sensors. 8 pin female M12
Backup / Power	
Power Backup	Through 35 Amp 12V Batteries , Qty: 2
Expected Backup	4 HRS
Charging Dock	230V, Single Phase, 50 Hz
Horizontal Gantry for Industrial Robotic Arm	
Horizontal Gantry Travel: 4000mm	
Axis Motor for Horizontal Gantry	Three Phase, 750 Watt - 2.39 Nm
Linear Motion Rails for Gantry, Qty: 02	25mm size, 4 meter x 2
Linear Motion Blocks for Gantry, Qty: 06	25mm size x 6
Industrial SCADA	
SCADA for CCU	WinCC - Advance, Unlimited Tags, Version V15.1
SCADA User License	Perpetual License
SCADA Developer License	Perpetual License
OPC - UA Connectivity	NA
Industry 4.0 Ready	NA
Conveyor	
Conveyor Type	Flex Belt

Minimum Conveyor Length	3000mm
Motor	AC Motor with Gear Box
Conveyor Width (Flex Belt)	110mm
Conveyor Fixture Holding Width	220mm
Weight bearing capacity of conveyor	40 KG
Electrical Supply	415V, Three Phase Supply, 50 Hz
Delta (Fanuc) Robot	
Robot	Fanuc Delta
Robo Model	M1iA/0.5A
Robo Working Envelope	Diameter 280mm, Height 100mm
Payload	0.5 KG
No of Axes	6
Repeatability	+/- 0.02mm
iR Vision Sensor 2D	
2D Single View Vision Process	X, Y, R robot coordinates for non-moving parts
2 1/2D Depalletising Vision Process	X, Y, (Z), R robot coordinates for non-moving parts
2D Multi View Vision Process	X, Y, R robot coordinates for non-moving parts. Increased accuracy for huge parts based on more than 1 camera snap
2D Single-View Visual Tracking process	X,Y,R robot coordinates for moving parts. Supports iRPickTool to pick parts from a moving conveyor
Gaze Line Offset Vision Process	X,Y,Z,R robot coordinates and orientation according to Camera View Line for non-moving parts
Single View Inspection process	Delivers binary inspection result (PASS/FAIL). No robot coordinates
2D Calibration Free Vision process	X,Y,R robot coordinates for non-moving parts without camera calibration
3D Tri-View Vision process	X,Y,Z,W,P,R robot coordinates for non-moving parts. 3 or more 2D sensors deliver position compensation, mostly used for several robots (typically paint, sealing applications)
Barcode Reader Vision process	Deliver the string of 1D or 2D Barcode. Five types of 1D barcode (EAN-13/JAN-13/UPC-A; Code 39; Interleave 2-of-5; Codabar/NW7) and two types of 2D barcode datamatrix ECC200; Model 2 and Micro QR-Code). No position information will be delivered.
Barcode Printer and Reader	
Barcode Printer	Barcode Printer to assign barcode to ASRS fixtures
Barcode Printer	Barcode Reader to sense the status of each fixture of ASRS
Fencing Arrangement and Grouting Provision	
Fencing with minimum dimension of 1m x 1m, Qty: Minimum 24	Minimum area covered: 7m x 7m
Display sheets in 1mm SS with Vinyl stickers	10 Qty
Chemical Grouting of Robot Pedestal	Qty: 4, M14 / M16
Chemical Grouting of Horizontal Gantry	Qty: 12, M14 / M12
Grouting of Fencing Pillars	Minimum Qty: 16, M10 / M12
Grouting of ASRS	Minimum Qty: 12, M12
Central Control Unit (CCU)	
Central Control Station with Control Panel	Minimum dimensions of 800mm x 500mm x 750mm with 1200mm x 600mm MDF top
Operator panel with necessary switchgears	Operation control with Cycle Start / RESET / EMG STOP etc
PLC for ASRS Operation	S7 1200 - 1215C with dual profinet 14 DI / 10 DQ 2 AI / 2 AQ
Additional I/O Module	16DI / 16DO
Industrial 5 port unmanaged switch	SCALANCE, 5 Port
CPU with intel i5 processor and minimum 8 GB RAM	with licensed Windows 10 version
Dual Monitor stand	Spring Loaded Monitor holding arm
19 inch monitors, Qty: 02	19 inch LED, Qty :02
Wireless Keyboard and Mouse	Wireless