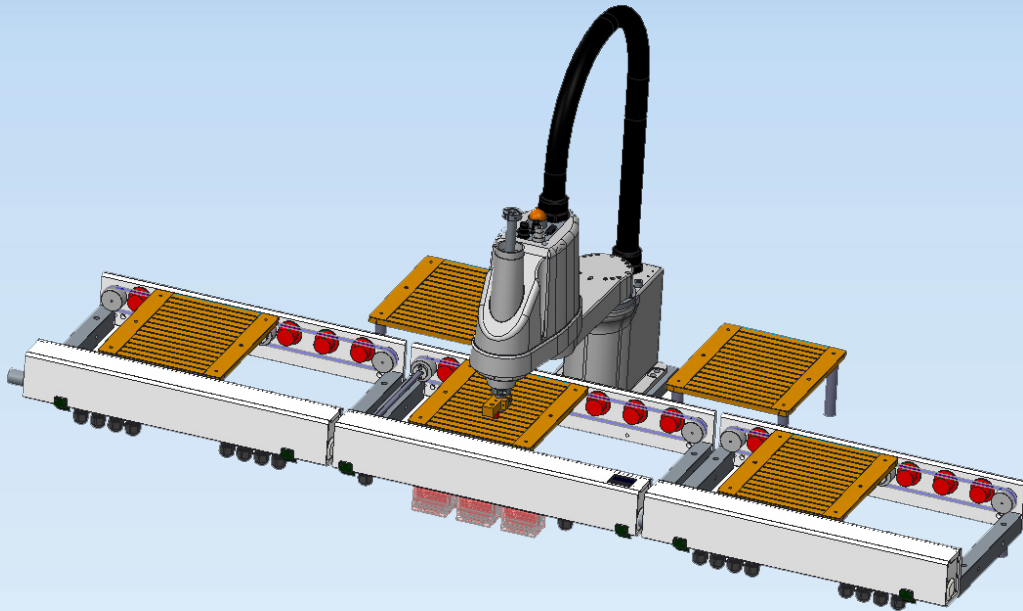# MiddLESEX
GENERAL INDUSTRIES, INC.

2016 iAP Product Lineup

In-line AUTOMATION PLATFORM™ (iAP)

A new generation assembly solution.
Embedded setup programs for the layperson ... via library routines!

In-line Assembly Platform (iAP):

It is...
a conveyor segment with automatic pallet handling
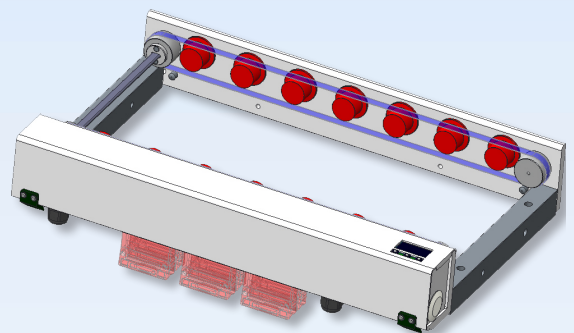
It is...
a programmable logic controller with preprogrammed protocols for the customer's assembly devices
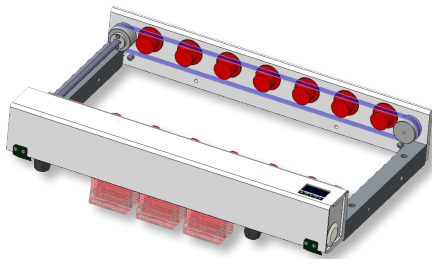
It is...
an I/O hardware array to control the customer's assembly devices

It is...
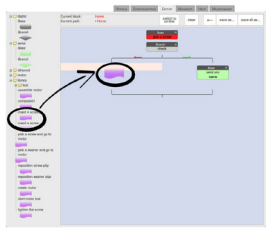a program development environment for the customer's assembly logic
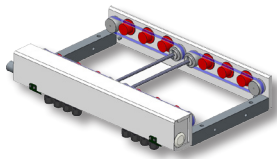
Middlesex General Industries' iAP:

- Is an inline module, and there is a family of modules supporting it
- Can be used in a long assembly conveyor
- Can be used stand alone with a buffer before and a buffer after
- Is a plug-and-play unit with built-in PLC
- Is programmable by the layperson or toolmaker
- Is a base for any type of assembly operation, dependent on the assembly device used (robot or other)
- Is available with custom set-up for any operation
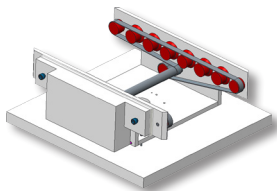
Embedded Software:

Pre-programmed for commonality functions. This saves time for the automation builder who does not need to deal with an all-purpose PLC from scratch. Primarily a tooling process, dominated by tool makers, not software programmers. Therefore programming requires no software or PLC skills.
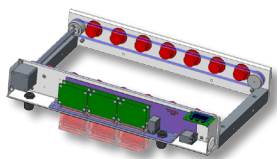
Supporting Components:

Buffer Conveyor:
The buffer conveyors are simple conveyor modules which transport and buffer the pallets to the assembly conveyor when configured into a production line.
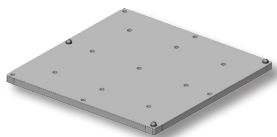
Quad Section (QS):
The QS are used at 4 way intersections or right angle corners. Allows work piece to travel straight across intersection or stop and rotate to change direction. Work piece can enter or exit from in any of the four directions.
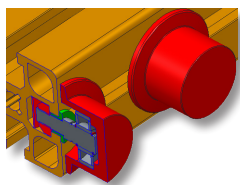
Expandable Embedded Controls:
Digital input and output boards are available for NPN or PNP type. One board has 16 inputs and 8 outputs. One assembly conveyor can have a max. of 4 boards (64 inputs and 32 outputs).

Accessories:
- Standard Pallets 220mm
- Customized Pallets
- Turn Key Systems

Stand Alone T-Slot Compatible Components:
- Pulley Assemblies
- Controls Enclosure
- Motor/Drive Assembly

Specifications:

In-line Automation Platform size
500x100x320 [mm] (LxHxW)

Buffer Conveyors
500mm increments to 2000mmx100x250 [mm] (LxHxW)

Max. Conveyor Speed
1.0 [m/s]

Move In Move Out Speed
0.5 seconds

Conveyor Particulation
available in increments to ISO Class 4
(Fed Class 10)

Vibrations
0.2 [g] rms

Available Pallet Sizes
220 [mm]

Pallet Moves
asynchronous, collision free

Pallet Position Repeatability
0.1 [mm]

Payload Weight
3.0 Kg

Digital Inputs (24 [V] - PNP/NPN)
up to 64

Digital Outputs (24 [V] - PNP/NPN)
up to 32

Analog Inputs (12bit, 0-10 [V])
8 channels

Motor Control
Up to 4 stepper motors

Serial Ports
3x RS232

Ethernet Ports

Operating Voltage
24VDC

Current
Each output 1A, Up to 8A total

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