

24v DC Powered Conveyor

Zero Line Pressure

Hard wired and network controls

Low maintenance

Low energy, run-on-demand technology

Flexible range of controls



EtherNet/IP
ODVA



CC-Link IE

Field
Basic

EtherCAT



Contents

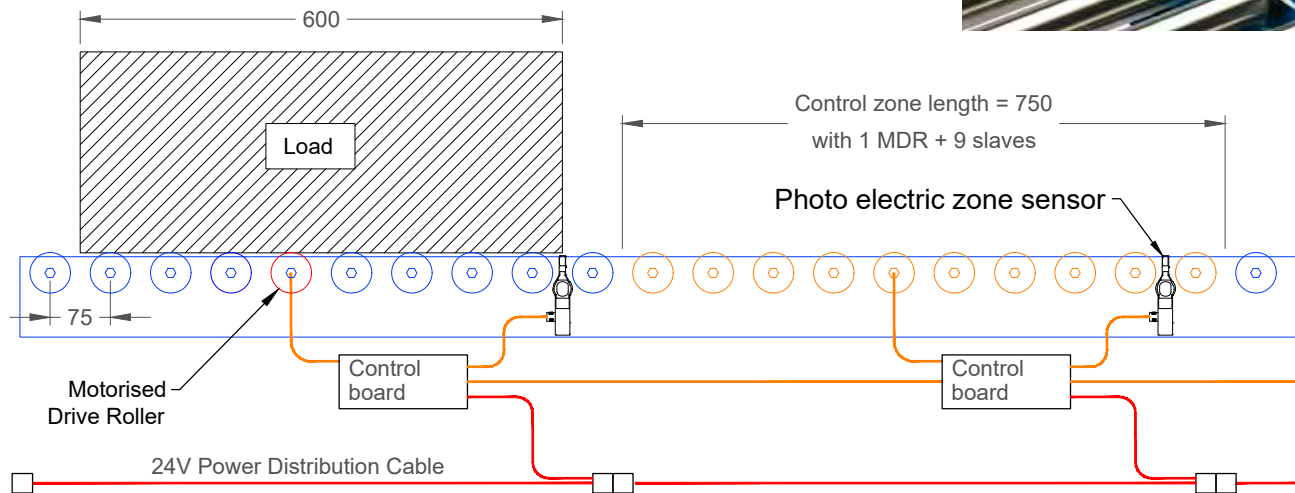
Zero Line Pressure Control Concept	3
Typical ZLP Drive Zone Concept.	3
Zero Line Pressure Control.	3
ZoneLogix PRO™ Programmable, Scaleable ZLP Solution	4
Unidrive® - Networkable, Out of the Box operation, Bi-directional ZLP	4
Pulseroller Programmable Networkable ZLP Solution	6
ConveyLinx Ai2 - Integral ZLP program, PLC integration, Dual Power Supplies	6
Itoh Denki - Simple hard wired ZLP Solution	8
HB510P-CU1 - Out-of-the-box standalone operation	8
Interroll Programmable Networkable ZLP Solution.	10
MultiControl - Integral ZLP program, PLC integration, Dual Power Supplies	10
Plug & Play Cabling System with Itoh Denki MDR.	12
Simple ZLP Logic Sensors, Out-of-the-box Operation	12
24V Driven Conveyor Modules	14
Roller Straights	14
Roller Curves	14
Belt Over Roller	14
Roller Mitres	15
Lift Up Gate	15
24V Driven Ancilliary Products	16
Electric Switch Wheel Sorter	16
Electric Belt Transfer Unit.	16
Electric Vertical Blade Stop	16
Pneumatically Operated Ancilliary Products	17
Pneumatic Switch Wheel Sorter	17
Pneumatic Belt Transfer Unit.	17
Pneumatic Vertical Blade Stop	17
Standalone Roller Drive Control Cards	18
ZoneLogix Plus	18
Itoh Denki - CBM105	18
Pulseroller - EZQube-W-AI	18
Pulseroller - ConveyLinx Ai2 module	18
Interroll - DriveControl 20	18
Features Summary	19
Table of ZLP Control Board Features	19



Zero Line Pressure Control Concept

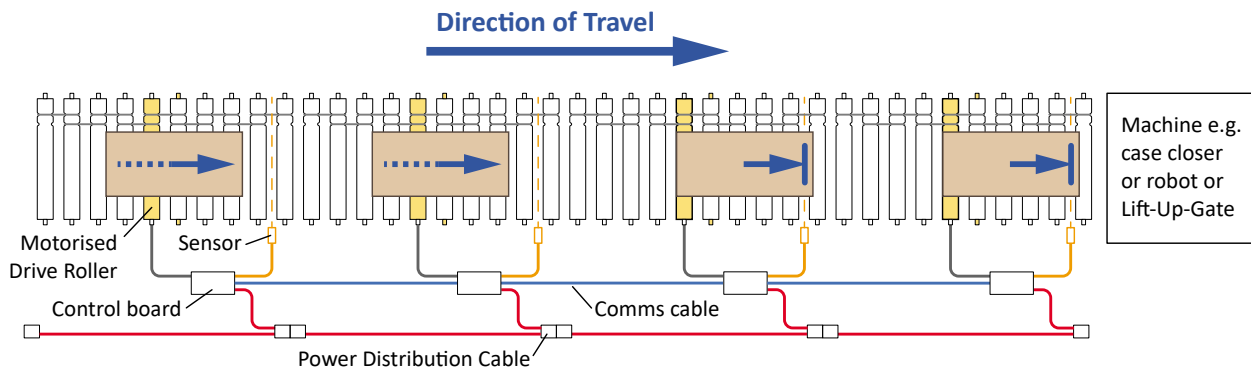
Typical ZLP Drive Zone Concept

Unit loads are transported individually and separately along the conveyor by drive sections or zones of rollers linked together with simple but robust transmission belts.



Zero Line Pressure Control

Zero line Pressure control inside our control boards will automatically transport cartons one-by-one along the conveyor without contact between the cartons. Each control board checks the status of the zone sensor downstream and, if it is clear, will safely transfer the carton in its zone along the conveyor. The cartons will stop automatically at the downstream end in the final zone. The next carton will stop in the preceding upstream zone, cartons will continue to accumulate in this way without touching each other.



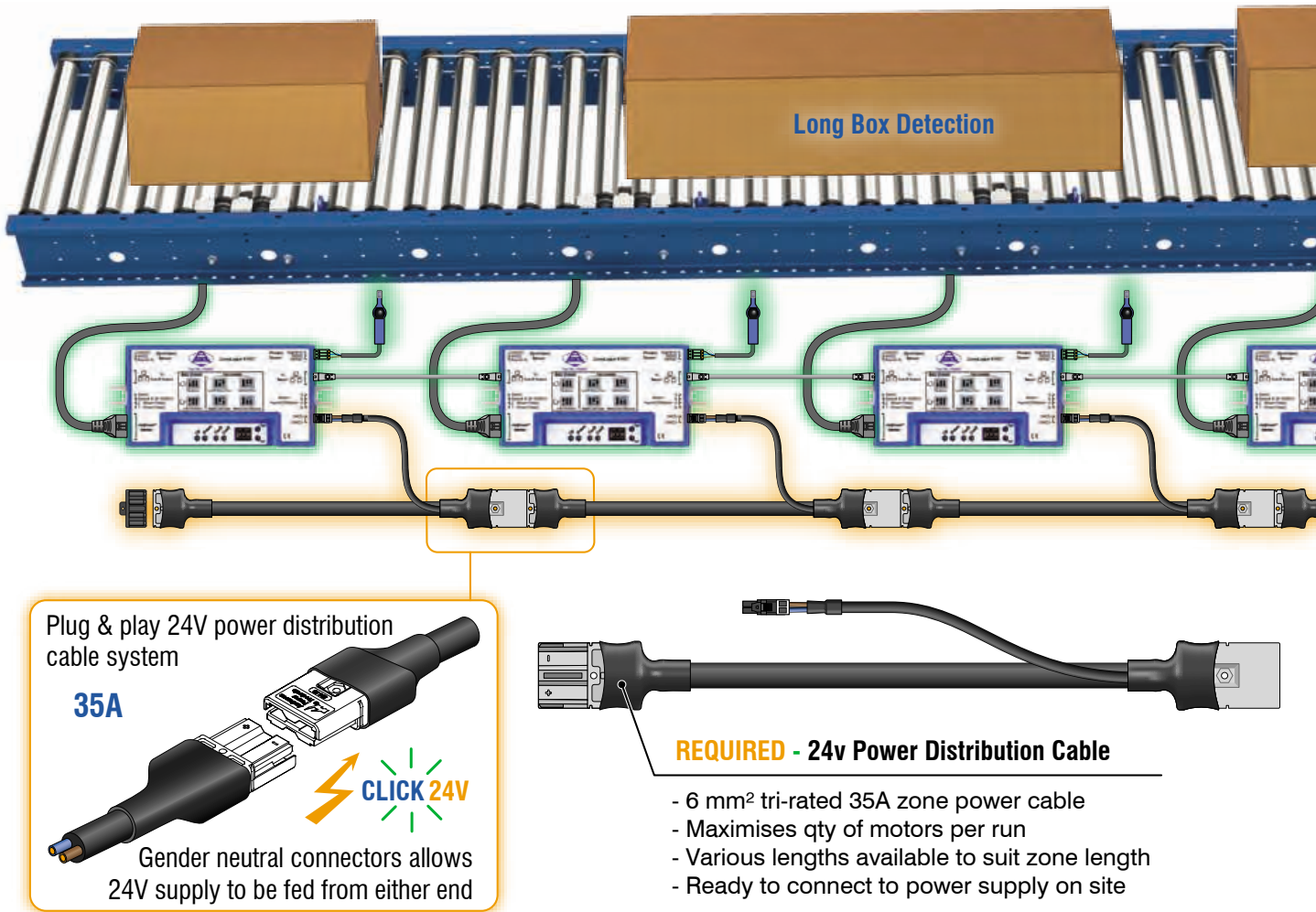
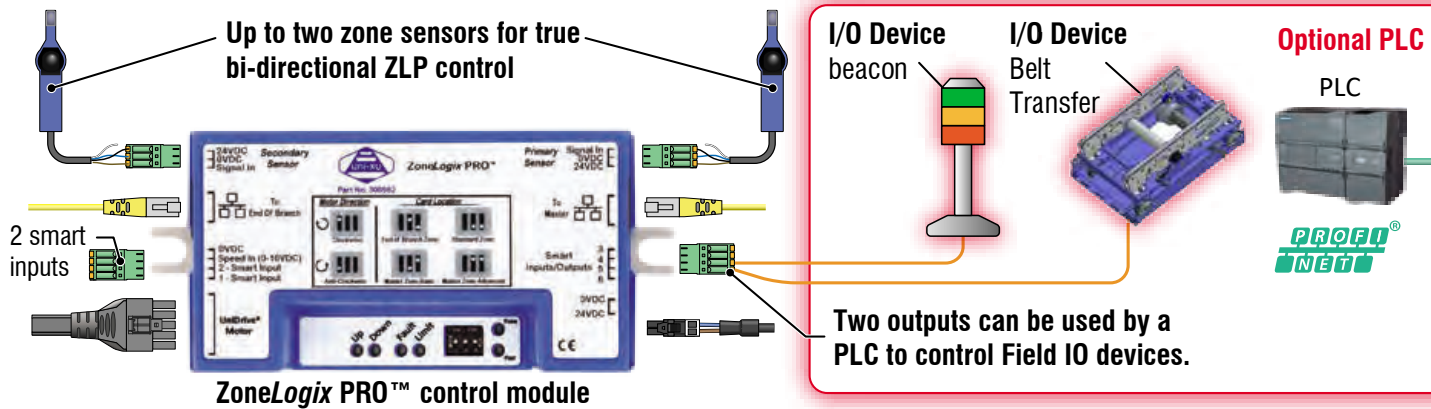
Each motorised drive roller will run on demand and stop after a few seconds to reduce energy use. This solution provides dynamic storage capacity along the conveyor which can accommodate fluctuations in throughput. It also allows operators to easily and safely remove or place cartons on the conveyor.





ZoneLogix PRO™ Programmable, Scaleable Z

Unidrive® - Networkable, Out of the Box operation, Bi-directional ZLP



Items included in scope of supply by Conveyor Units

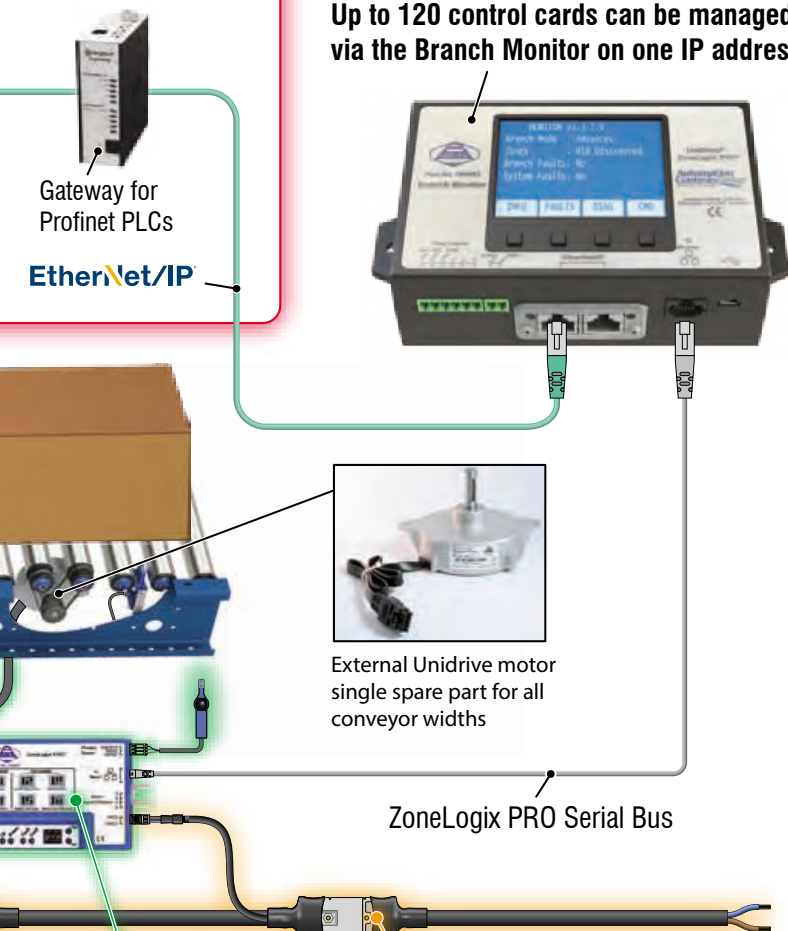
PLC control or cabling components supplied by controls integrator



LP Solution



Integration by others



Conveyor assembly includes control boards, zone sensors, communication cables, fitted, connected and all tested before despatch.

ZoneLogix PRO REQUIRES factory fitted power distribution cables to provide power to control boards. These cables speed up installation and reduces the cost of electrical installation.

Factory fitted power distribution cabling supplied separately

Features

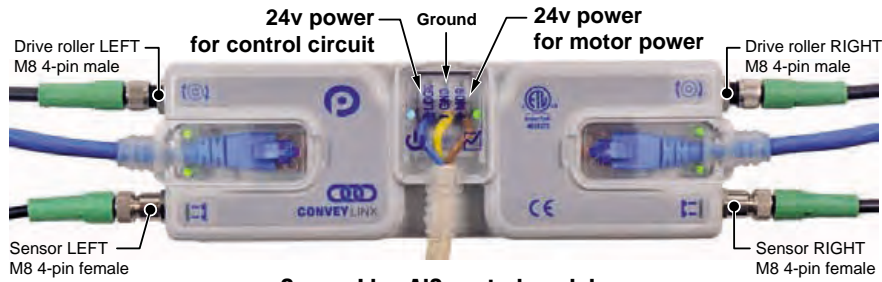
Features	
Qty of motors per card	1
PLC network integration	✓
Qty of motors per IP node	120
One SKU for all conveyor widths and speeds?	✓
Zero Line Pressure	✓
Reverse Zero Line Pressure	✓
Long box detect	✓
Ramp control - soft Start/Stop	
200,000 hours motor life	✓
Protected from mechanical impact	✓
'Out of the box' operation without PLC	✓
Backups stored on control cards	✓
Speed control switch on control card	
0-10 V Speed Control	✓
PLC Speed Control (over network)	✓
Able to be pre wired before despatch	✓
Able to have power supply wiring installed before despatch	✓
Motors tested before despatch	✓
Cards tested before despatch	✓
Sensors tested before despatch	✓





Pulseroller Programmable Networkable ZLP

ConveyLinX Ai2 - Integral ZLP program, PLC integration, Dual Power Supplies



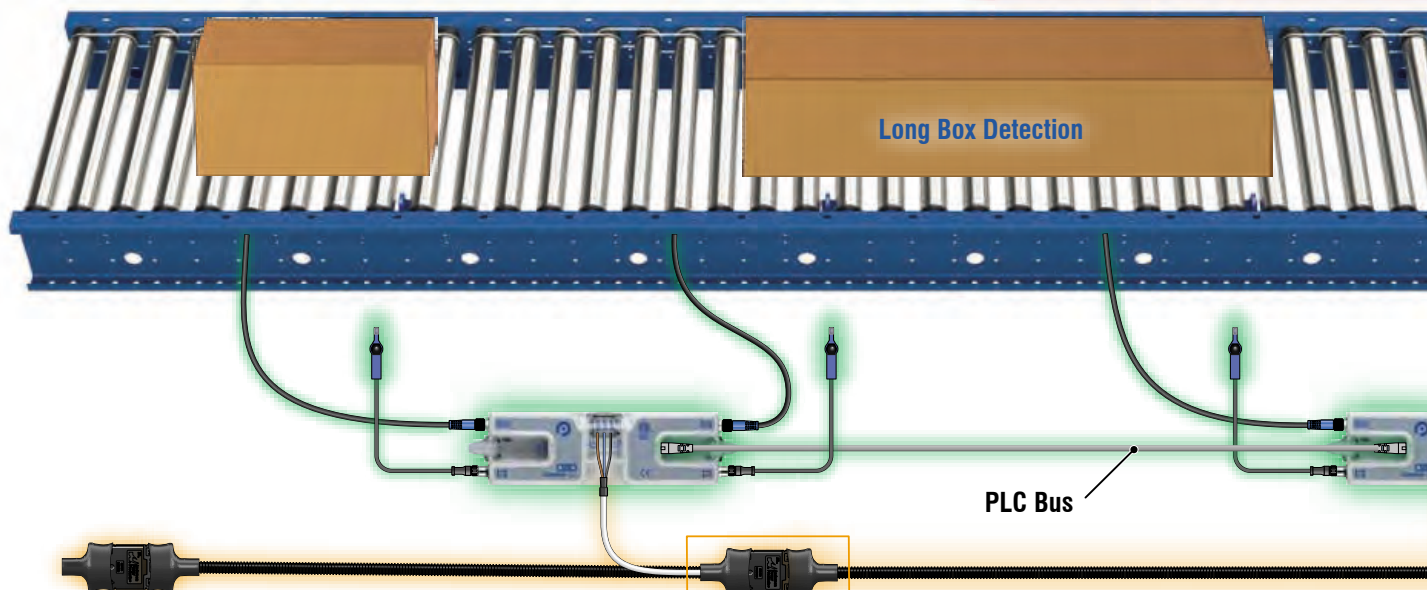
ConveyLinX Ai2 control module

CC-Link IE Basic EtherCAT

MotionLinX card option

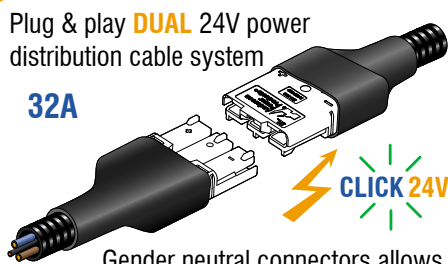


EtherCAT



Plug & play **DUAL** 24V power distribution cable system

32A



Gender neutral connectors allows 24V supply to be fed from either end

24V Logic Power
Ground
24V Motor Power

OPTIONAL 24v DUAL Power Distribution Cable

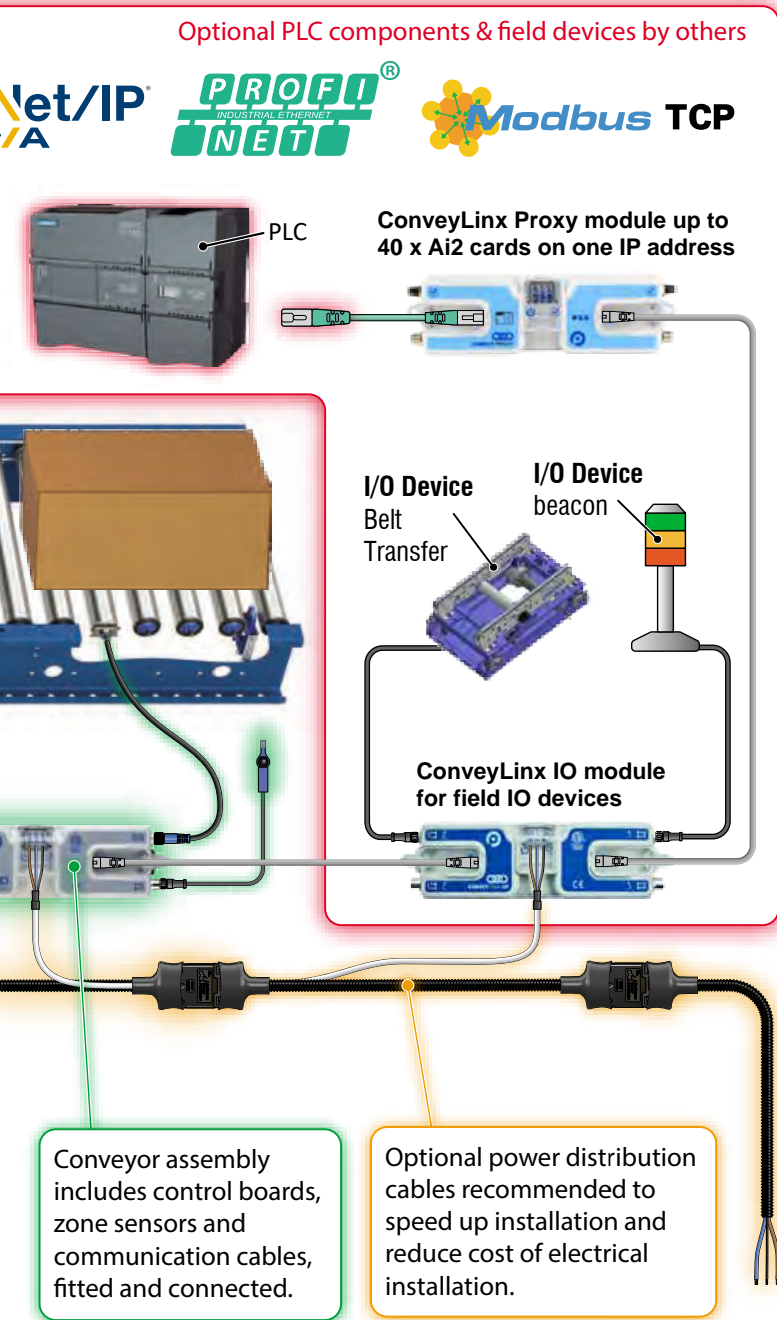
- 4 mm² 32A zone power cable
- Maximises qty of motors per run
- Various lengths available to suit zone length
- Ready to connect to power supply on site
- Dual power supplies allows safe shutdown of motor power whilst maintaining PLC supervision of system

Items included in scope of supply by Conveyor Units

PLC control or cabling components supplied by controls integrator



Solution



Factory fitted power distribution cabling supplied separately

Features

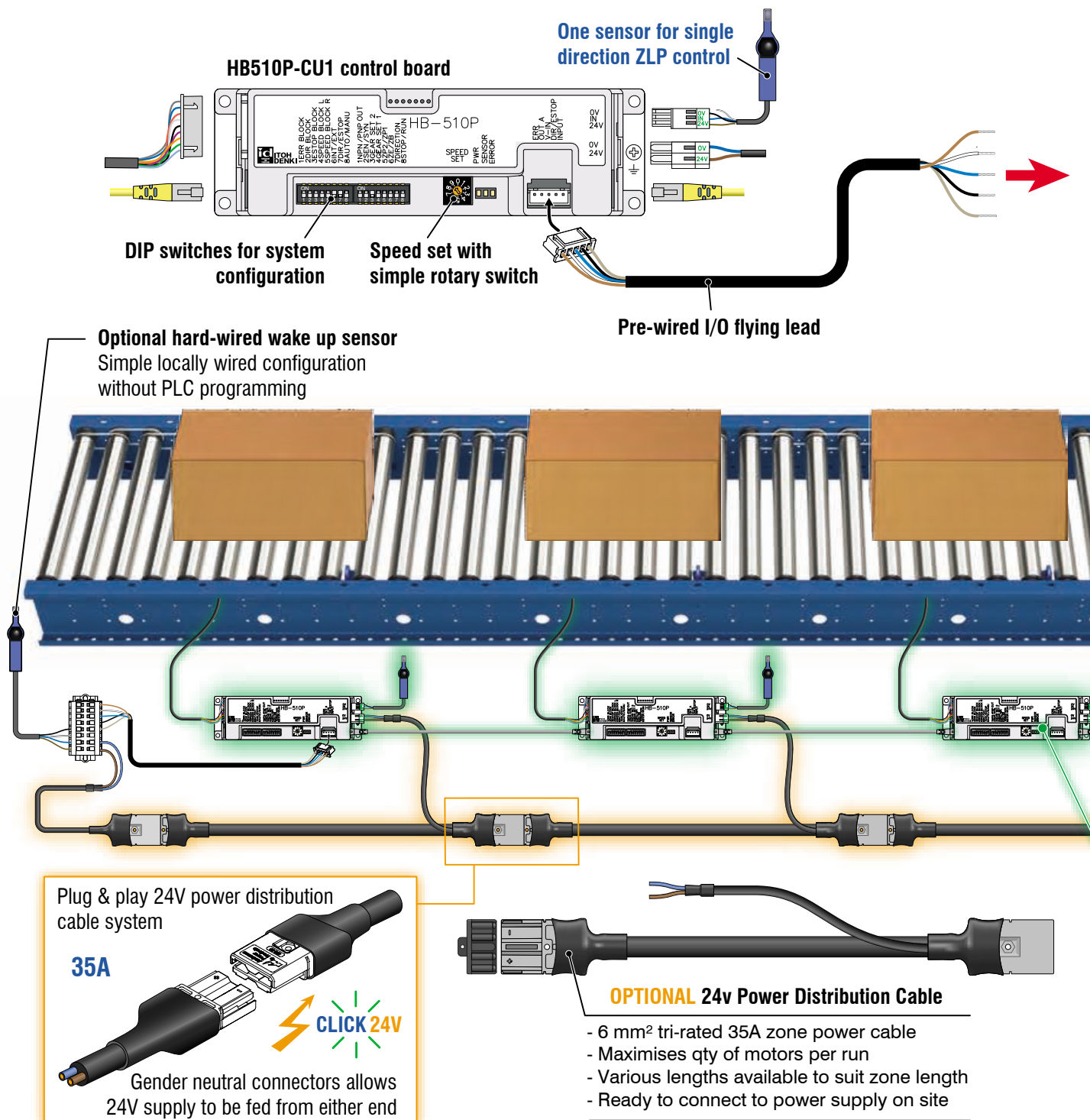
Qty of motors per card	2
PLC network integration	✓
Qty of motors per IP node	80
One SKU for all conveyor widths and speeds?	
Zero Line Pressure	✓
Reverse Zero Line Pressure	
Long box detect	✓
Ramp control - soft Start/Stop	✓
20,000 hours motor life	✓
200,000 hours motor life	
Protected from mechanical impact	
'Out of the box' operation without PLC	
Backups stored on control cards	✓
Speed control switch on control card	
0-10 V Speed Control	
PLC Speed Control (over network)	✓
Able to be pre wired before despatch	✓
Able to have power supply wiring installed before despatch	✓
Motors tested before despatch	✓
Cards tested before despatch	
Sensors tested before despatch	





Itoh Denki - Simple hard wired ZLP Solution

HB510P-CU1 - Out-of-the-box standalone operation

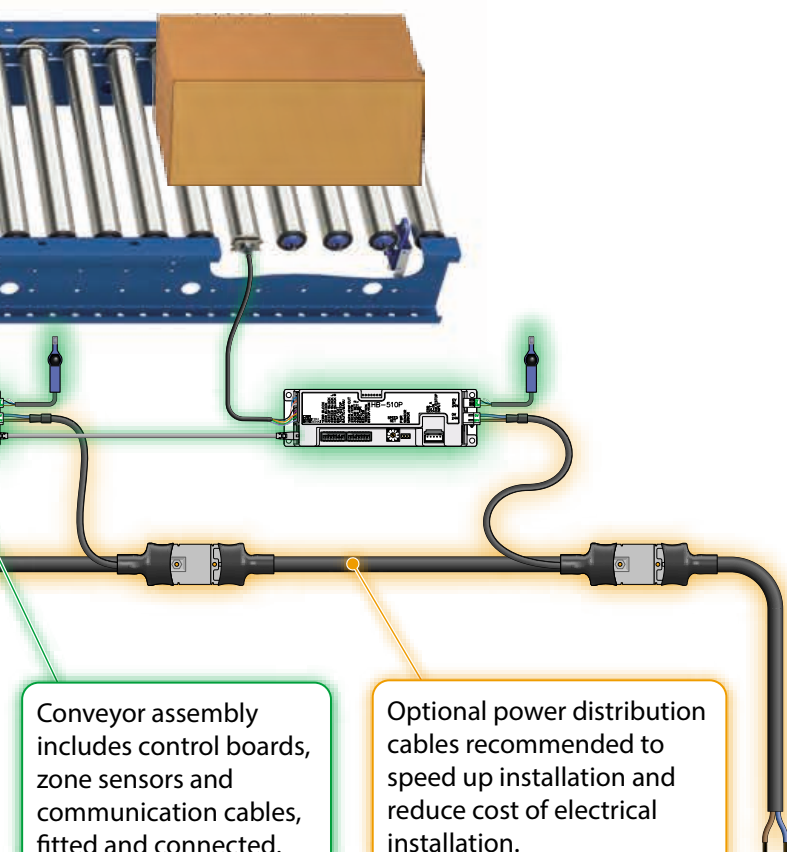
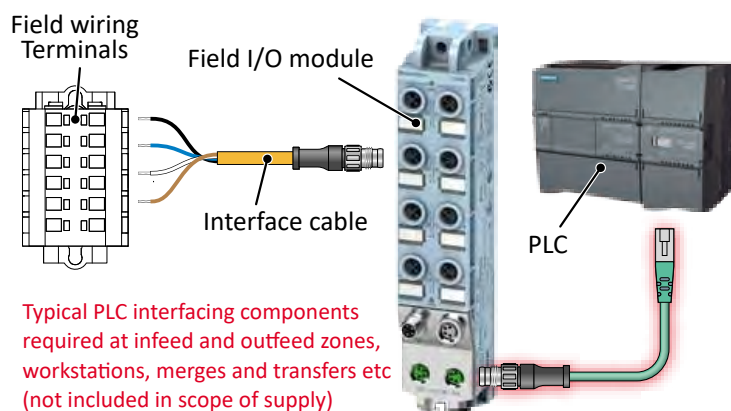


Items included in scope of supply
by Conveyor Units

PLC control or cabling components
supplied by controls integrator



ALTERNATIVE INTERFACE - Often found with large/complex systems



Factory fitted power distribution cabling supplied separately

Features

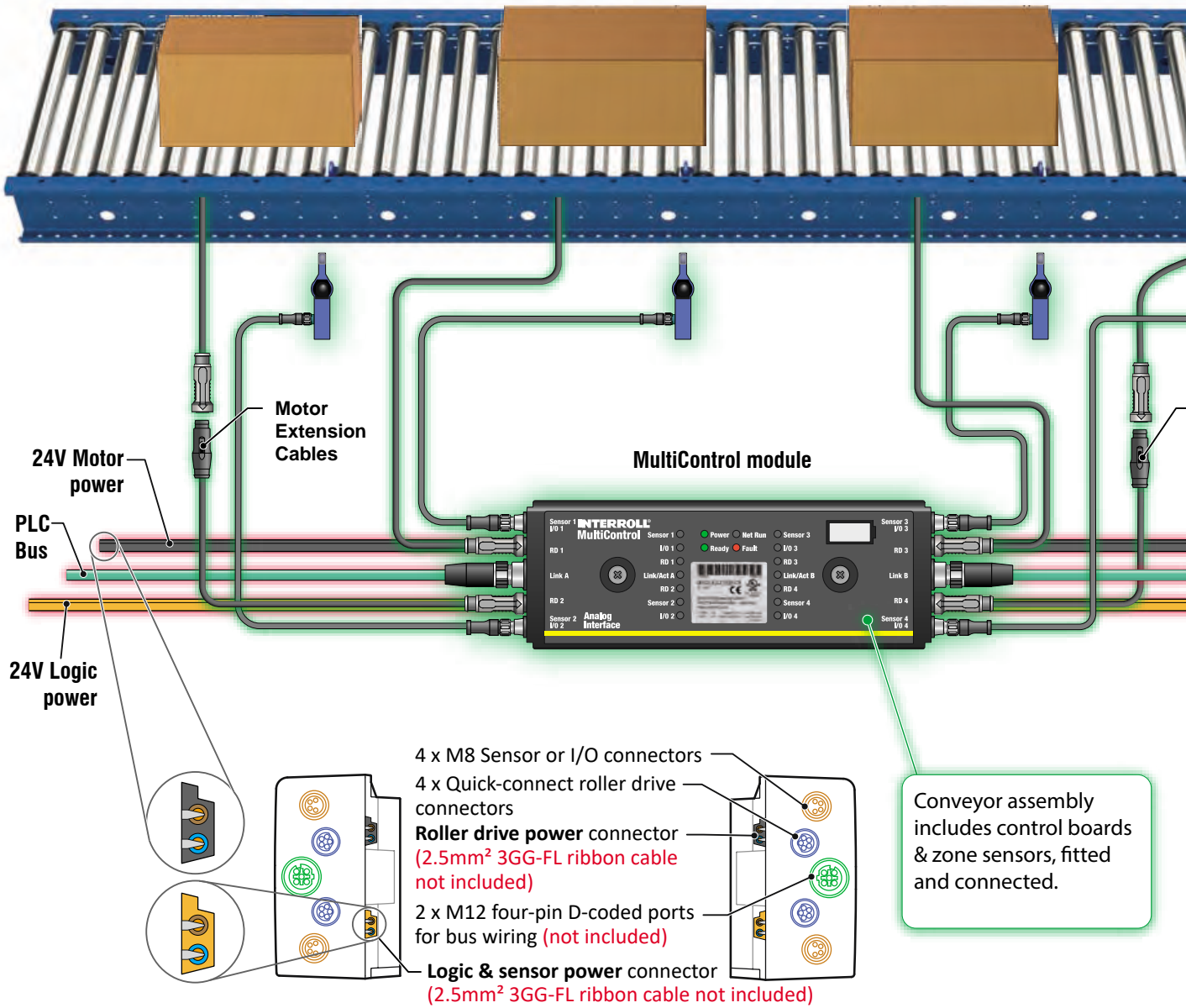
Qty of motors per card	1
PLC network integration	
Qty of motors per IP node	n/a
One SKU for all conveyor widths and speeds?	
Zero Line Pressure	✓
Reverse Zero Line Pressure	
Long box detect	
Ramp control - soft Start/Stop	
20,000 hours motor life	✓
200,000 hours motor life	
Protected from mechanical impact	
'Out of the box' operation without PLC	✓
Backups stored on control cards	
Speed control switch on control card	✓
0-10 V Speed Control	✓
PLC Speed Control (over network)	
Able to be pre wired before despatch	
Able to have power supply wiring installed before despatch	✓
Motors tested before despatch	✓
Cards tested before despatch	
Sensors tested before despatch	





Interroll Programmable Networkable ZLP Sol

MultiControl - Integral ZLP program, PLC integration, Dual Power Supplies

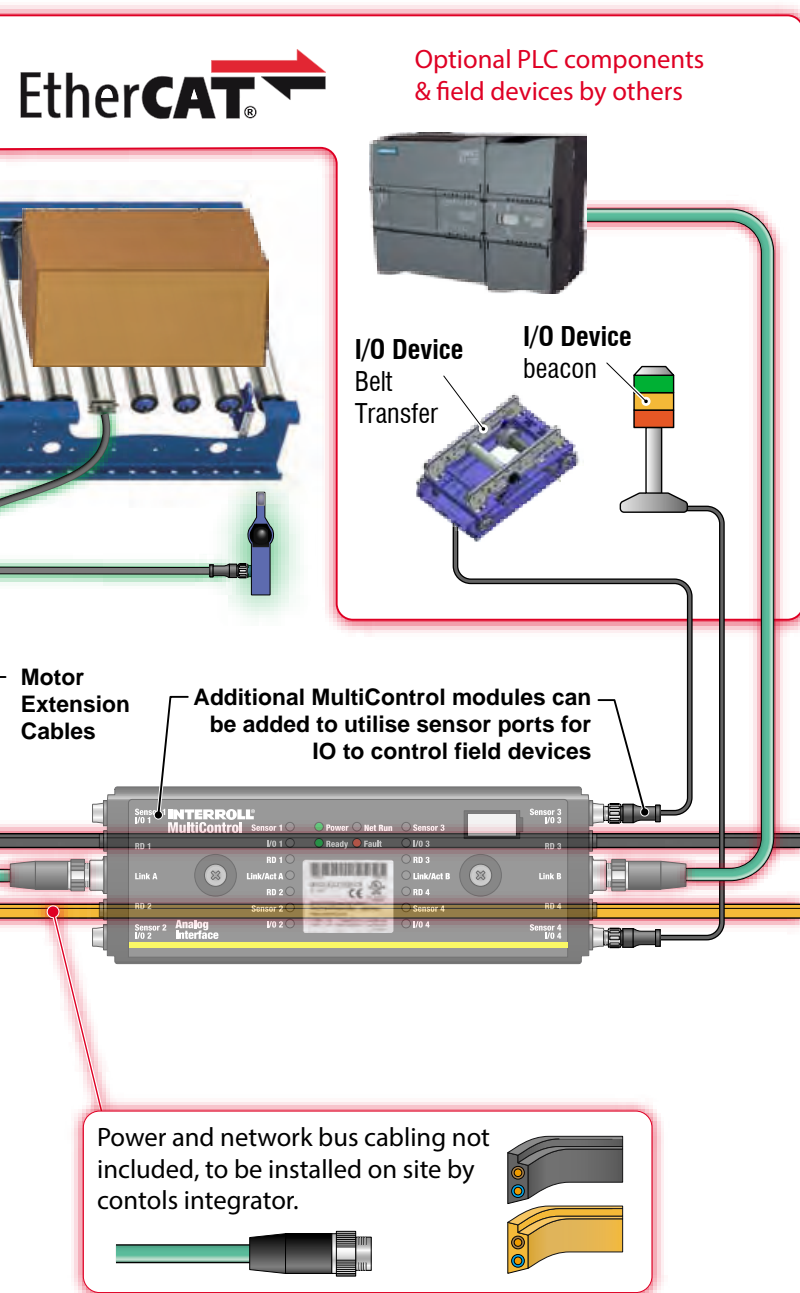


Items included in scope of supply by Conveyor Units

PLC control or cabling components supplied by controls integrator



ution



Features

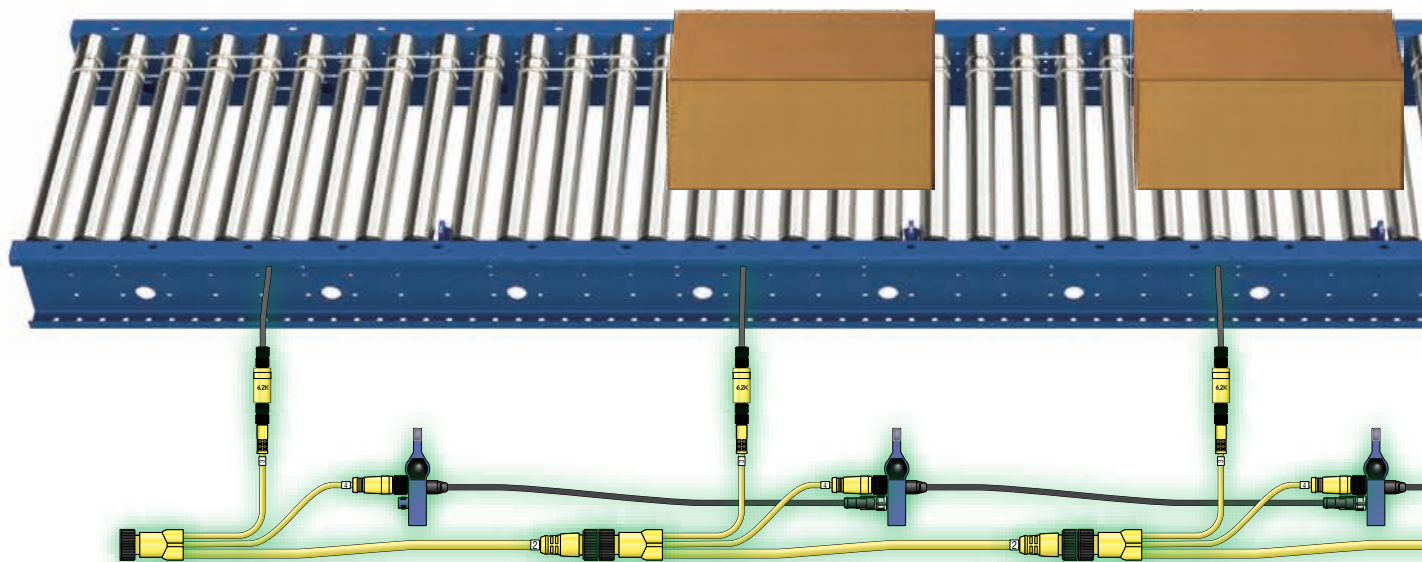
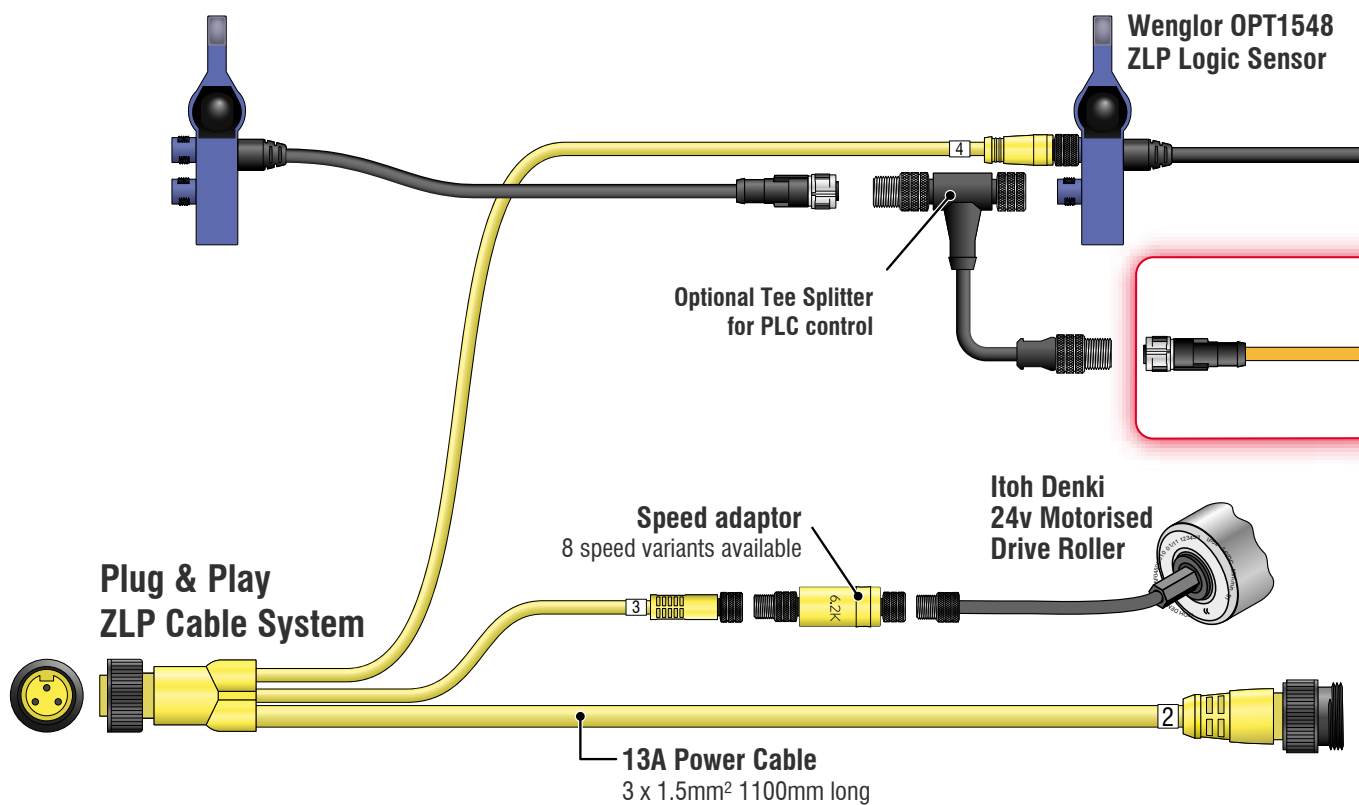
Features	
Qty of motors per card	4
PLC network integration	✓
Qty of motors per IP node	4
One SKU for all conveyor widths and speeds?	
Zero Line Pressure	✓
Reverse Zero Line Pressure	
Long box detect	
Ramp control - soft Start/Stop	✓
20,000 hours motor life	✓
200,000 hours motor life	
Protected from mechanical impact	
'Out of the box' operation without PLC	
Backups stored on control cards	✓
Speed control switch on control card	
0-10 V Speed Control	
PLC Speed Control (over network)	✓
Able to be pre wired before despatch	
Able to have power supply wiring installed before despatch	
Motors tested before despatch	✓
Cards tested before despatch	
Sensors tested before despatch	





Plug & Play Cabling System with Itoh Denki M

Simple ZLP Logic Sensors, Out-of-the-box Operation



Items included in scope of supply
by Conveyor Units

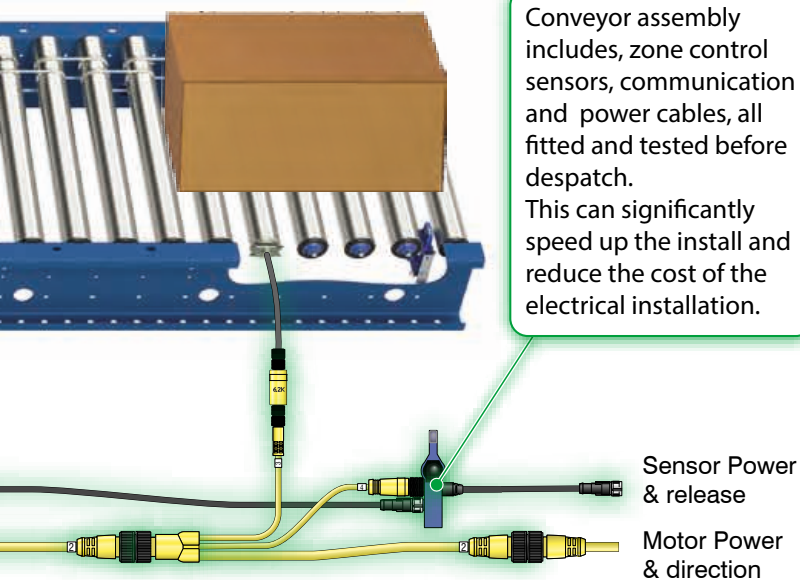
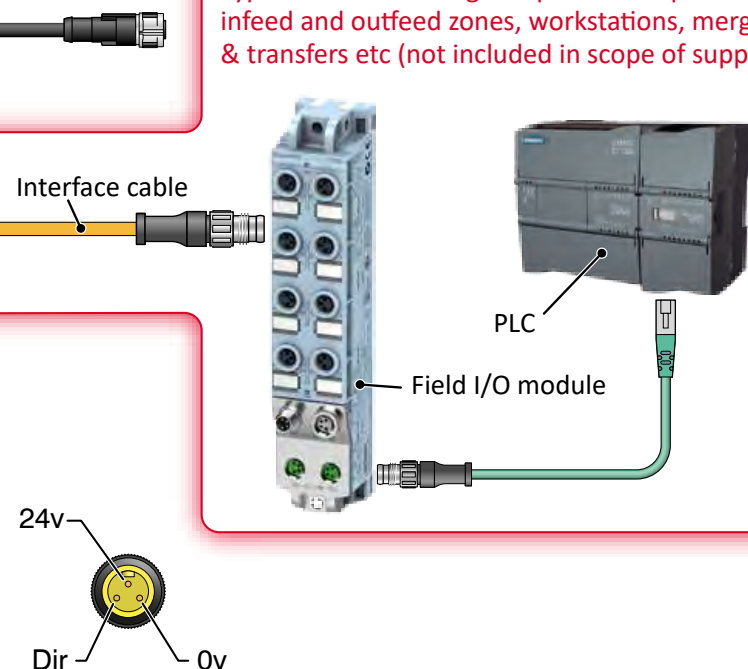
PLC control or cabling components
supplied by controls integrator



MDR

ALTERNATIVE INTERFACE**Often found with large/complex systems**

Typical PLC interfacing components required at infeed and outfeed zones, workstations, merges & transfers etc (not included in scope of supply)

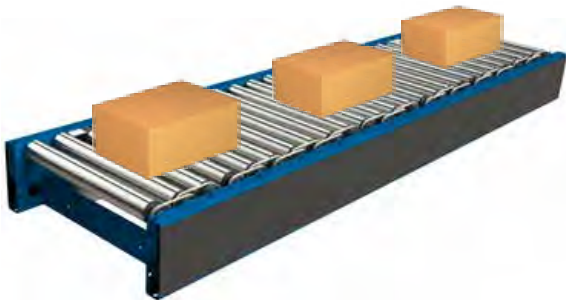
**Features**

Features	
Qty of motors per card	1
PLC network integration	
Qty of motors per IP node	
One SKU for all conveyor widths and speeds?	
Zero Line Pressure	✓
Reverse Zero Line Pressure	
Long box detect	
Ramp control - soft Start/Stop	
20,000 hours motor life	✓
200,000 hours motor life	
Protected from mechanical impact	
'Out of the box' operation without PLC	✓
Backups stored on control cards	
Speed control switch on control card	
0-10 V Speed Control	
PLC Speed Control (over network)	
Able to be pre wired before despatch	✓
Able to have power supply wiring installed before despatch	✓
Motors tested before despatch	✓
Cards tested before despatch	✓
Sensors tested before despatch	✓





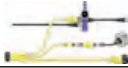





24V Driven Conveyor Modules



Roller Straights



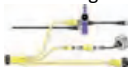



- 50mm dia zinc plated steel roller in pitches: 60, 75, 100 & 150mm
- Round belt or Poly V belts
- Conveyor widths: 412, 462, 512, 612, 762 and 912
- Conveyor lengths: up to 3m (in roller pitch increments)

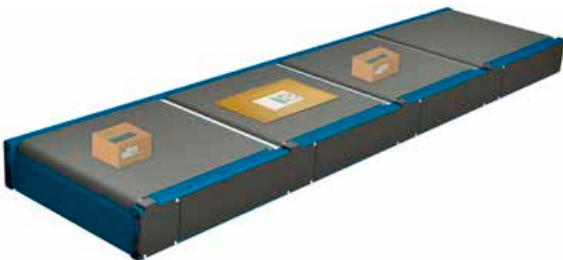
Control Options Hard wired ZLP options	ZoneLogix PRO 	Itoh Denki HB510P-CU1 	Plug & Play Cabling 
Network ZLP options	ZoneLogix PRO 	Pulseroller ConveyLinX Ai2 	Interroll MultiControl 



Roller Curves



- 50mm dia zinc plated steel roller with Polymer tapered sections
- Roller pitches: 60 or 75mm
- Round belt only
- Conveyor widths: 412, 462, 512, 612, 762 & 912
- Available angles: 30°, 45°, 60° and 90°

Control Options Hard wired ZLP options	ZoneLogix PRO 	Itoh Denki HB510P-CU1 	Plug & Play Cabling 
Network ZLP options	ZoneLogix PRO 	Pulseroller ConveyLinX Ai2 	Interroll MultiControl 

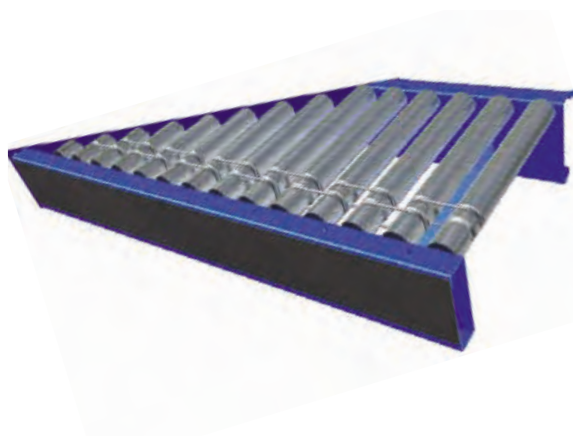


Belt Over Roller

- 50mm dia head and tail rollers
- Self tracking elasticated belt
- Conveyor widths: 412, 462, 512, 612, 762 & 912
- Conveyor lengths: up to 3m



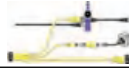



Control Options Network ZLP options	ZoneLogix PRO 	Pulseroller ConveyLinX Ai2 
---	---	--





Roller Mitres



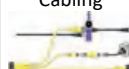



- 50mm dia zinc plated steel roller in pitches: 60 or 75mm
- Round belt or Poly V belts
- Conveyor widths: 412, 462, 512, 612, 762 and 912

Control Options	ZoneLogix PRO	Itoh Denki HB510P-CU1	Plug & Play Cabling
Hard wired ZLP options			
Network ZLP options	ZoneLogix PRO	Pulseroller ConveyLinX Ai2	Interroll MultiControl
			



Lift Up Gate

- Lifting/Lowering assisted by two gas struts
- 50 x 1.5mm zinc plated steel rollers
- Round belt or Poly V belts
- Conveyor widths: 412, 462, 512, 612, 762 & 912

Control Options	ZoneLogix PRO	Itoh Denki CBM105*	Plug & Play Cabling
Hard wired ZLP options.*			
Network ZLP options	ZoneLogix PRO	Pulseroller ConveyLinX Ai2	Interroll MultiControl
			

* CBM105 does not include ZLP logic

NOTE: Gate zone is normally kept clear, not recommended for accumulation.

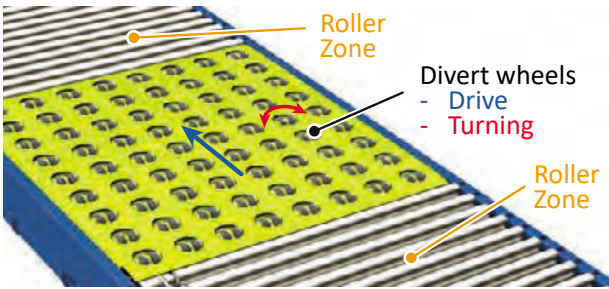




24V Driven Ancilliary Products

Electric Switch Wheel Sorter

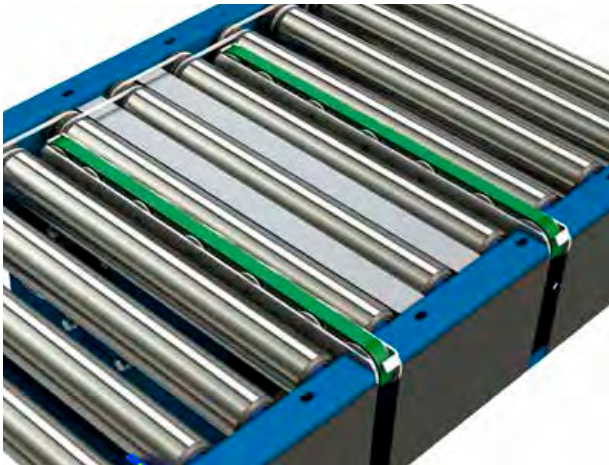
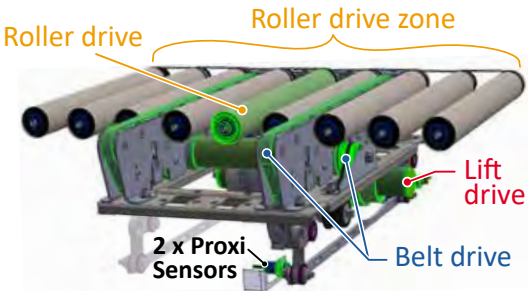
- Divert wheels drive: 0.55Kw 400V AC
- Divert wheels turning: 24V SMC linear actuator
- Roller drives: 24v DC - several options
- Frame widths: 412, 462, 512, 612, 762 & 912mm
- Sort Rate: Up to 50 cases/minute, 3000/hour
- Minimum package size: 200 x 200mm
- 30 or 45 divert angles
- Single or Dual divert options



Roller Zone Control Options	ZoneLogix PRO	Pulseroller ConveyLinX Ai2	Itoh Denki HB510P-CU1	Itoh Denki CBM105	Interroll DC20 or MultiControl	Plug & Play Cabling	Divert wheel Control Options	
Hard wired options								SMC hard wired controller
Network options								SMC Profinet controller

Electric Belt Transfer Unit

- 2 x 24v DC Drives for LIFT and BELT drives.
The roller zone is part of the host conveyor.
- Frame widths: 462, 512, 612, 762 & 912
- Sort Rate: Up to 25 cases/minute, 1500/hour
- 2 and 3 belt wing variants available

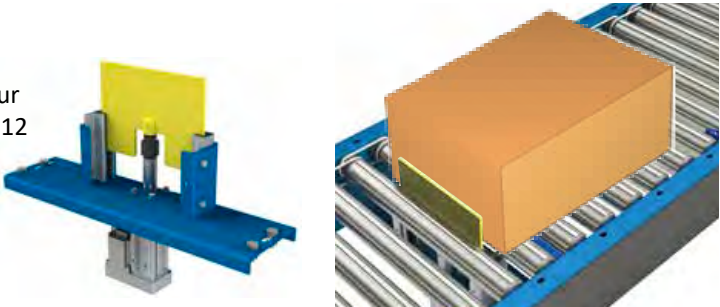


Control Options	Lift drive controls			Belt drive control			Roller Zone Control Options
	Pulseroller ConveyLinX Ai2	Itoh Denki CBM105	Interroll DC20 or MultiControl	ZoneLogix Plus	Pulseroller ConveyLinX Ai2	Interroll DC20 or MultiControl	
Hard wired options							Same Roller Zone Control Options as above
Network options							

Electric Vertical Blade Stop

- Drive: SMC Linear Actuator
- Duty: Up to 33 times per minute i.e. 2000 per hour
- To suit frame widths: 412, 462, 512, 612, 762 & 912

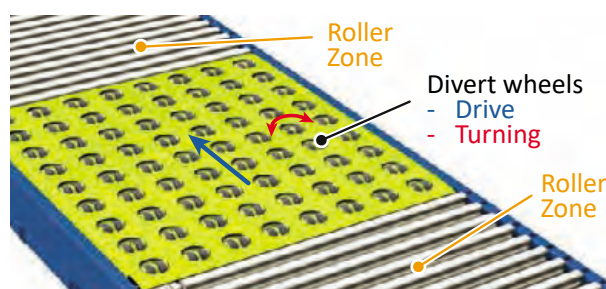
Control Options			
	SMC hard wired controller	OR	SMC Profinet controller



Pneumatically Operated Ancilliary Products

Pneumatic Switch Wheel Sorter

- Divert wheels drive: 0.37 or 0.55Kw 400V AC
- Divert wheels turning: Pneumatic via 24V solenoid valve
- Roller drives: 24v DC
- Frame widths: 412, 462, 512, 612, 762 & 912mm
- Sort Rate: Up to 50 cases/minute, 3000/hour
- Minimum package size: 200 x 200mm
- 30 or 45 divert angles
- Available as Single divert LEFT or RIGHT OR Dual divert: LEFT and RIGHT



Roller Zone Control Options	ZoneLogix PRO	Pulseroller ConveyLinx Ai2	Itoh Denki HB510P-CU1	Itoh Denki CBM105	Interroll DC20 or MultiControl	Plug & Play Cabling	Divert wheel Control Options	
Hard wired options								24v Solenoid valves
Network options							Field IO controls (by others) feeding valves	

Pneumatic Belt Transfer Unit

- 25mm stroke double acting pneumatic cylinder.
- The roller zone is part of the host conveyor.
- Frame widths: 412, 462, 512, 612, 762 & 912mm
- Sort Rate: Up to 25 cases/minute, 1500/hour
- 2 and 3 belt wing variants available



Control Options	Lift drive controls		Belt drive control	Roller Zone Control Options
			SEW AC geared motor	
Hard wired options		24v Solenoid valves		Same Roller Zone Control Options as above
Network options	Field IO controls (by others) feeding valves			

Pneumatic Vertical Blade Stop

- Drive: Pneumatic via 24V solenoid valve
- Duty: Up to 33 times per minute i.e. 2000 per hour
- To suit frame widths: 412, 462, 512, 612, 762 & 912mm

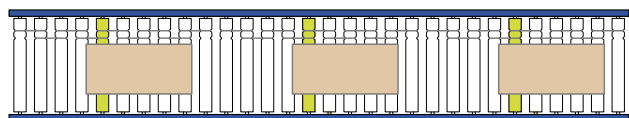
Control Options	Lift drive controls	
Hard wired options		24v Solenoid valves
Network options	Field IO controls (by others) feeding valves	



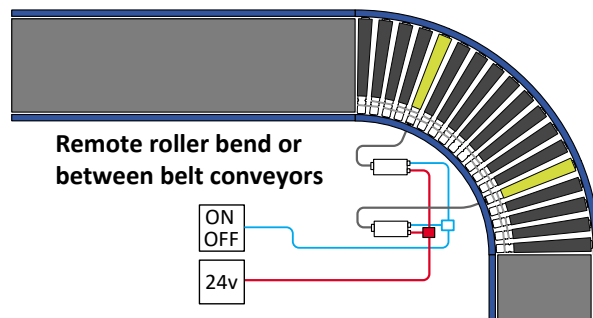


Standalone Roller Drive Control Cards

Basic or standalone roller drive control cards can be useful for simple small installations of just a few roller zones in remote locations e.g. a Lift-Up-Gate or for transport applications where they just need to RUN continuously.



Transport Application



Remote roller bend or between belt conveyors



ZoneLogix Plus

- Allows control of a single Unidrive motor without a full ZoneLogix PRO branch installation
- Error status output
- Input for RUN
- Input for Direction



Itoh Denki - CBM105

- 1 x Accel & 1 x Decel ramp rotary pots
- Servo brake function *
- Error status output
- Input for RUN
- Input for Direction
- Input for speed control 0-10v signal



Pulseroller - EZQube-W-AI

- Accel/Decel: 0.1 - 10 sec via app
- Servo brake function * set via app
- Error status output
- 2 x RUN Inputs for 3 x speeds + app
- Input for Direction
- Boost modes for 50W power capability via app
- Bluetooth interface and allows configuration via an app



Pulseroller - ConveyLinX Ai2 module

- Easyroll software from Pulseroller allows the Ai2 module to be re-configured to operate either motor via its sensor port
- Programmable Accel/Decel ramp
- Servo brake function *
- Input for RUN for each motor
- Input for Direction for each motor
- Boost modes for 50W power capability

M8 4p female round



Pin 1 - 24V DC
Pin 2 - Direction signal
Pin 3 - GND
Pin 4 - Run signal



Interroll - DriveControl 20



- Accel/Decel ramp dip switch (predefined & proportional to speed)
- Servo brake function *
- Error status output
- 3 x RUN Inputs for 7 x speeds
- Input for Direction

* Servo brake function is necessary with the lift motor in the electric belt transfer unit



Features Summary

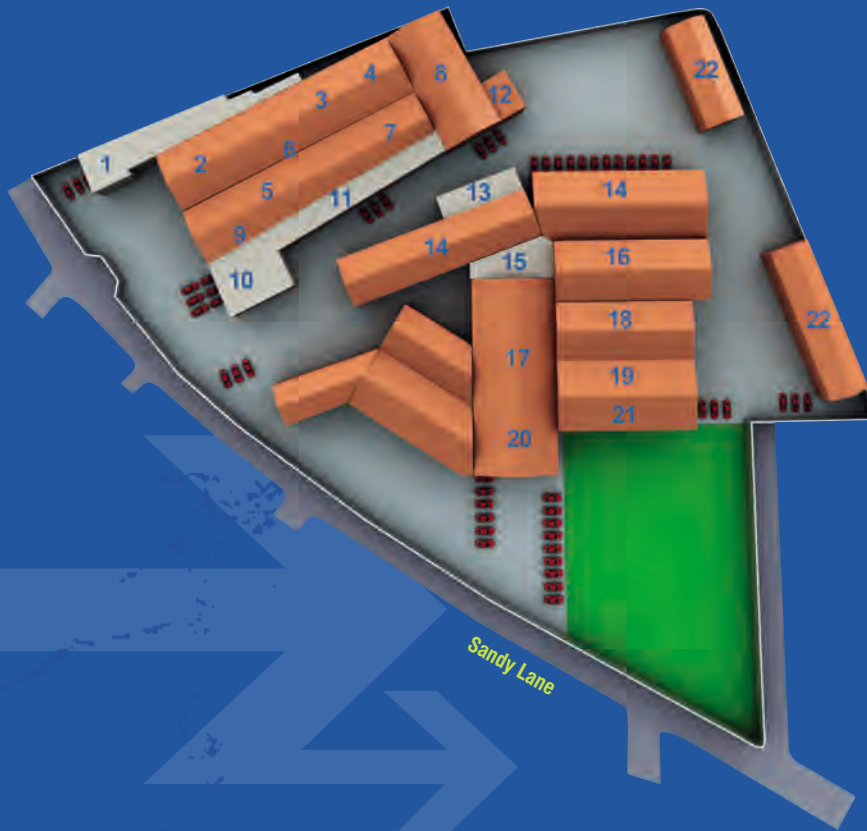
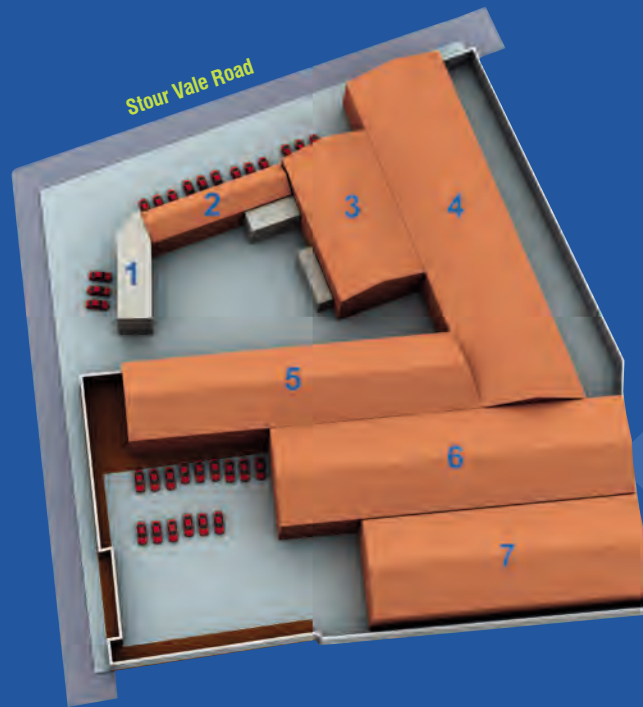
Table of ZLP Control Board Features

Features	ZoneLogix PRO™	Pulseroller ConveyLinx Ai2	Itoh Denki HB-510P	Interroll MultiControl	Itoh Denki squid cable
					
Qty of motors per card	1	2	1	4	1
Transport, just run (Hard Wired)					
PLC network integration	✓	✓		✓	
Qty of motors per IP node	120	80	n/a	4	n/a
One SKU for all conveyor widths and speeds?	✓				
Zero Line Pressure	✓	✓	✓	✓	✓
Reverse Zero Line Pressure	✓				
Long box detect	✓	✓			
Ramp control - soft Start/Stop		✓		✓	
20,000 hours motor life	✓	✓	✓	✓	✓
200,000 hours motor life	✓				
Protected from mechanical impact	✓				
'Out of the box' operation without PLC	✓		✓		✓
Backups stored on control cards	✓	✓		✓	
Speed control switch on control card			✓		
0-10 V Speed Control	✓		✓		
PLC Speed Control (over network)	✓	✓		✓	
Able to be pre wired before despatch	✓	✓	✓		✓
Able to have power supply wiring installed before despatch	✓	✓	✓		✓
Motors tested before despatch	✓	✓	✓	✓	✓
Cards tested before despatch	✓				✓
Sensors tested before despatch	✓				✓



LYE SITE

- 1 Reception / Sales Office
- 2 Spray Area & Tool Room
- 3 Fabrication Area
- 4 Roller Department
- 5 Press Department / Component Manufacture
- 6 Flexible Conveyor Assembly
- 7 Bearing Assembly & Stores



STOURPORT SITE

- 1 Main Reception / Sales Office
- 2 Despatch
- 3 Ancillary Assembly
- 4 Press Brake
- 5 Powder Coating Plant / Curing Oven
- 6 Production Welding
- 7 Bend Fabrication
- 8 Press / Laser Processing
- 9 General Assembly
- 10 Belt Conveyor Assembly
- 11 Stores
- 12 Goods Inwards
- 13 Accounts / Purchasing Departments
- 14 Principal Roller Department
- 15 Tapered Roller Assembly
- 16 Pallet Conveyor & Special Product Assembly
- 17 Injection Moulding
- 18 Punch Press / Laser Department
- 19 Aluminium Conveyor Assembly
- 20 Product Development
- 21 Showroom / Demonstration Area
- 22 Storage Warehouse



CONVEYOR UNITS

QUALITY • PERFORMANCE • RELIABILITY

Conveyor Units Limited, Sandy Lane, Titton,
Stourport-on-Severn, Worcestershire, DY13 9PT