



# THE FLEXIBLE AND INTELLIGENT CONVEYOR PLATFORM

**TO OPTIMISE YOUR  
INTRALOGISTICS**



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# Turnkey modular conveyor platform, ready to go and ready to change!

## Time and cost optimisation through increased operational efficiency and flexibility

ITOH DENKI - the pioneer of motorized drive rollers - has drawn from the 70 years of experience as industry leader to create an innovative modular conveyor platform, idPAC.

**The powerful idPAC solution takes care of everything so that you can focus on what is important to you!**



# idPAC benefits ready to use

Powered by Itoh Denki's renown 24VDC Power Moller motorized rollers, together with an advanced, autonomous decentralized control system.

A revolutionary modular platform based on the combination of conveyor sections with specific functions (straight line, curve, diverter...).

Standardised software and conveyor dimensions that allows unlimited reconfigurations: building your conveyor is now as easy as assembling Lego blocks.

idPAC allows for a quick, easy and efficient installation and commissioning of your conveyor line. idPAC systems ensure an early start of operations and a fast return on investment.



## Easy to set up

**With idPAC systems you receive complete modules with;** rollers, transfer modules, circuit boards, frames and software. Everything is preassembled, wired and ready to be put together.

**Drastically reducing installation costs and time** - it is possible to assemble a full idPAC conveyor system and have it operating in just three days!

### **PLUG & PLAY** Easy assembly and wiring for each module

- Modules arrive preassembled with all necessary components.
- Preprogrammed control boards are already tested and ready to be connected.
- Segmented, light modules can be moved and repositioned with ease.

### **POINT & CLICK** Select your modules and simply “drag and drop” the graphic to design your conveyor layout!

- The transport logic programming is already embedded in each module, this time saving innovation requires no further configuration or coding.
- With the simple, smart and intuitive interface, you don't need to be an expert to configure your conveyor lines.
- No complicated, time-consuming ladder programming with PLC required.

### **SMART ALL-IN-ONE MODULES**

- Delivered with all components mounted on the conveyor frame
- Equipped with circuit boards embedded with control software
- One-module-one-function allows flexibility and ease of assembly
- ITOH DENKI 24 VDC motor driven rollers and high performances transfer modules





## Easy to run and operate

Set up the idPAC modules and software, download the program on the conveyor and push the button to operate... drastically reducing commissioning time!

### SMART COMMISSIONING

- **Eliminate** the time wasting process of program debugging and conveyor operation tests.

### MAP TRACKING SYSTEM

- **Simply select** the destination and the optimal route is automatically generated by the system, the idPAC software will ensure the fastest transport time while avoiding any collisions of totes.

### DETOUR FUNCTION

- **In case of a product jam**, a new route is automatically generated to avoid downtime and provide an uninterrupted movement of goods along the line.

### EFFICIENT FLAWLESS TRANSPORT

- **idPAC** embedded control logic constantly optimizes routes and provides seamless merging.

### PREDICTIVE MAINTENANCE

- **Intelligent software** that informs you to change products at the end of lifetime before failure.

#### ITOH DENKI ORIGINAL MAP TRACKING SYSTEM



The core concept of this system is to provide intelligence to each module.

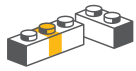
The conveyor modules, loaded with the map design and logic, communicate information to neighbouring modules to allow the tote to be transferred correctly to the defined destination.

#### TAKE IT EASY WITH ITOH DENKI'S PROGRAM!

**Conventional method:** The PLC programming is often unique to the individual programmer, if the programmer leaves the company, it's very difficult to understand the coding and continue to work. A complete reprogramming of the system is sometimes required and really timeconsuming.

**With idPAC:** The standardized program is embedded in each module and does not require any debugging or manipulation from a programmer.





## Easy to change

Thanks to the truly simple modularity, a conveyor layout change is quick and easy without the need for a high level software engineer.

### FULLY MODULAR

You can easily change your conveyor layout according to your activities.

### NO INTERRUPTION

Complete a hot expansion of the conveyors at any time, without interrupting the operation.

### DOWN TIME REDUCTION

Fast change out reduces any potential down time.

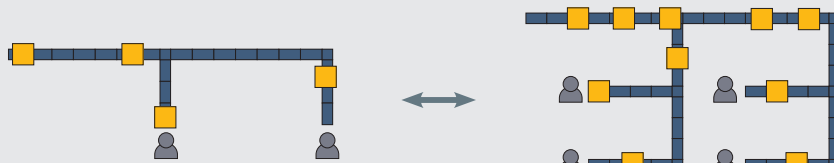
### UNLIMITED COMBINATIONS

Unlike conventional conveyor designs, idPAC short conveyor sections with standardised design allow unlimited combination options.

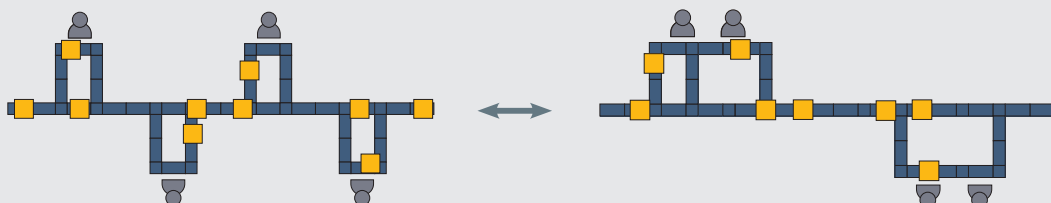


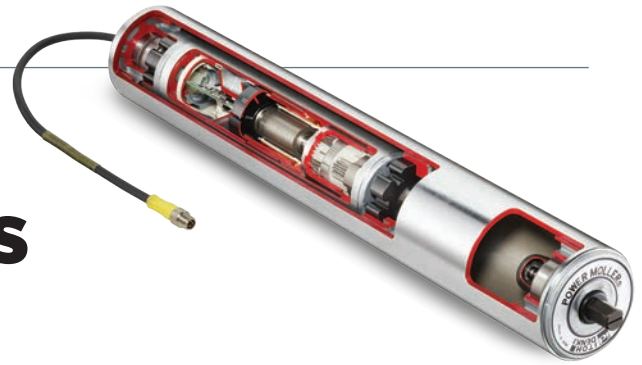
## Example of layout modification

PEAK AND OFF PEAK SEASON configurations adapt to productivity requirements



PRODUCTION MODEL changes or adaptations to special orders

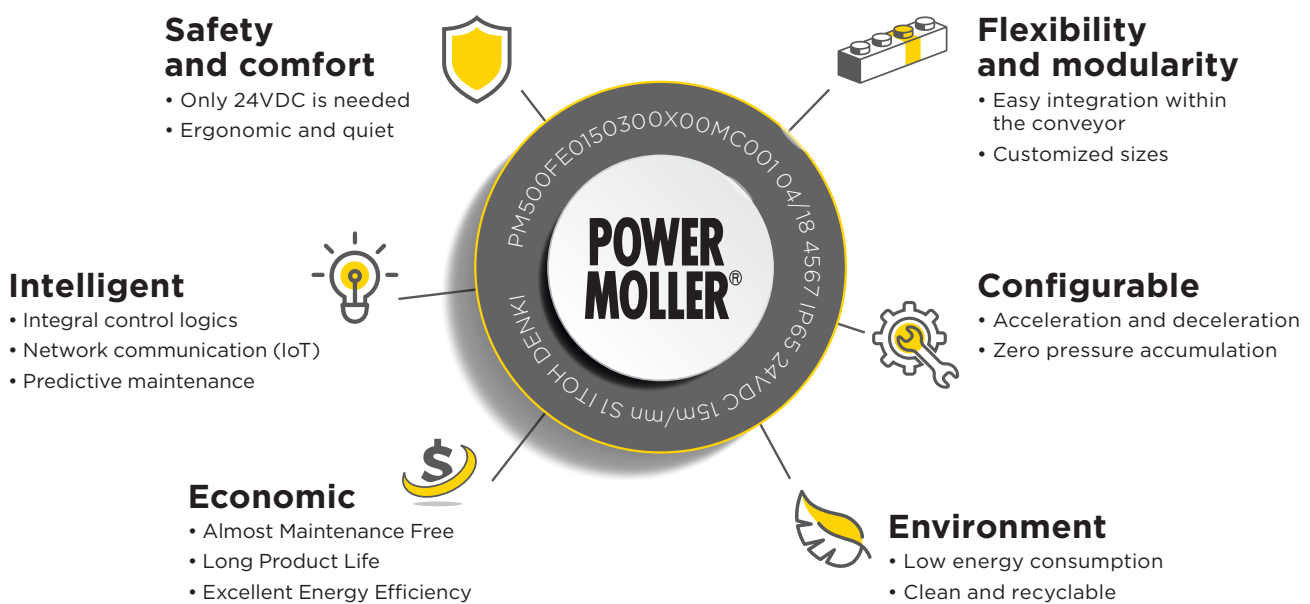




# Key components for idPAC

## POWER MOLLER, Motor Driven Roller by ITOH DENKI

Itoh Denki is the pioneer in brushless 24VDC motorized rollers based technologies, for cutting edge IoT intralogistics.



## F-RAT NX 90° Multidirectional Flat Transfer

### HIGH PERFORMANCE MODULE FOR SMOOTH AND FAST SORTATION ON YOUR CONVEYOR LINES

Entirely powered by 24VDC brushless motors, providing high safety standard and low maintenance. A groundbreaking patented flat transfer technology for advanced automation and IoT within your conveyor systems.



- ▶ **Multidirectional Flat transfer**, to ensure a smooth and secure sortation of your loads at a high throughput.
- ▶ **Transfer loads of various sizes and types**, from plastic envelopes to large boxes up to 50kg.
- ▶ **Extra compact** transfer module, with **over 15 standard sizes** for an easy integration in all conveyor frames.
- ▶ Designed to facilitate a CE compliant installation of the conveyor to ensure **user safety**.
- ▶ **Easy maintenance** thanks to the quick replacement of key components with wheel caster cassettes, rollers and belts.



## Case Study at Kusatsu Logistics Center of Shingakusha

# Just 3 days to install idPAC to improve sorting operation

Shingakusha Co. Ltd. is a publisher specialising in educational materials for children. The company has more than 3,000 references and 1,300 national distributors to serve schools, homes and private education. Kusatsu Logistics is one of its logistics centres which is a real bottom line for the operation in Shingakusha.



### SITUATION

#### More references and more packages

In the situation where the number of material was increasing, Kusatsu Logistics Centre needed to handle a greater variety and amount of materials to pack, and increase its daily capacity from 25,000 to 30,000 boxes in peak season.

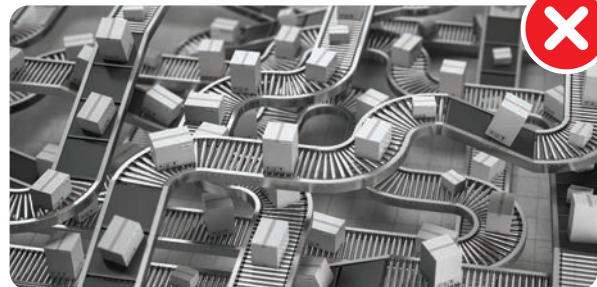
Moreover, educational materials became more diversified and frequently the delivery and packing form were changing, in consequence they couldn't adapt their logistic to these evolutions.



### BOTTLENECK

The bottleneck is the sorting process in the shipping which is operated manually, we couldn't grasp rapidly the location of each tote and we couldn't be flexible to possible order change or cancellations and mistakes were difficult and time-consuming to correct. Boxes often got lost too.

So due to this sorting part, we simply could not increase production capacity.



### SOLUTION WITH CONVENTIONAL CONVEYOR 'Heavy, Bulky, Long and Big'

When the company's Executive Officer, Mr Nobuo Yamamoto, started looking for solutions, he found many 'Heavy, Bulky, Long and Big' solutions with a large sliding shoe sorter, etc. that required a long construction period with expansion of building, proposed from material handling makers.

But we couldn't decide to go further with a big investment costing a lot of time and money.





## SOLUTION WITH idPAC 'Light, thin, short and small'

The improvement plan had reached a standstill, but it suddenly gained momentum when the manager in Kusatsu logistics dep. Mr. Matsui visited "Logis-Tech Tokyo 2016" to collect information and he was impressed by the compactness of idPAC, which was also a unique and completely opposite solution "Light, Thin, Short and Small". With idPAC, an optimal assembly line layout can be built freely and easily, he found that this solution would satisfy their condition of having a limited footprint.



## RESULTS

### Sorting operation is fully automatized and staff is not required anymore

100% of mistakes were eliminated, less electricity was used and so on, and not only the sorting operation part but also other upstream and downstream parts were improved thanks to idPAC.

- ▶ Technical test was done before the installation, **so 3-day installation was enough:** half a day to uninstall and 2.5 days to install and test.
- ▶ **Sorting staff is not required anymore** + the operation of transport companies are also streamlined.
- ▶ Electricity saving thanks to Run-on-demand functionality thanks to POWER MOLLER which **only runs when necessary.**
- ▶ Function to automatically stop totes just before they reach the extremity of the conveyor.



- ▶ **No risk of crushing totes,** with ZPA (the Zero Pressure Accumulation) function.
- ▶ With bar code reader, automated sorting by destination via barcode reader.
- ▶ **Clean and silent:** improved the working environment. Employees can sleep well without ringing noise in their ears.
- ▶ Etc...

## PERSPECTIVES

### Applying the Effects of the idPAC to another center

Following the success story with idPAC, Mr Yamamoto sees opportunities for further implementations:

- ▶ Extend idPAC to upstream process (picking and packing area) soon.
- ▶ Increase loading lines by adding more branches in front of current lines.
- ▶ Increase transfer speed.
- ▶ Apply idPAC improvement on other sites of Shingakusha.
- ▶ Etc..



**Now, it's your turn to experience and make the most of idPAC!!!**

# ITOH DENKI worldwide



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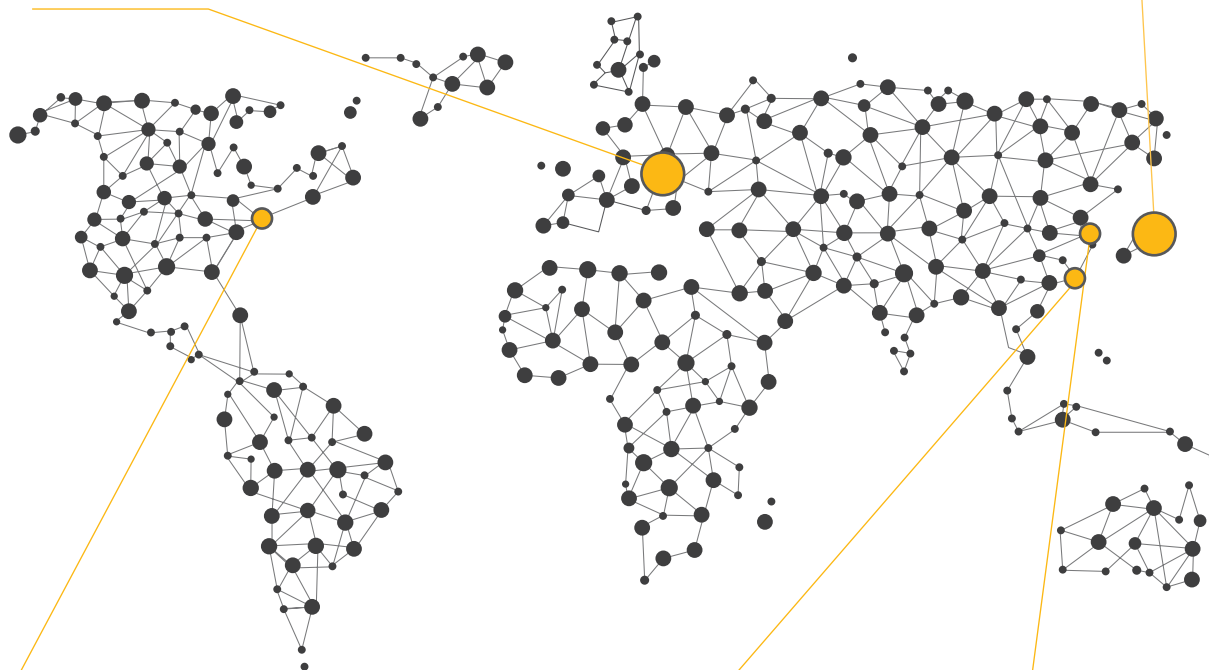
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# *Driving the **future** of intralogistics*







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