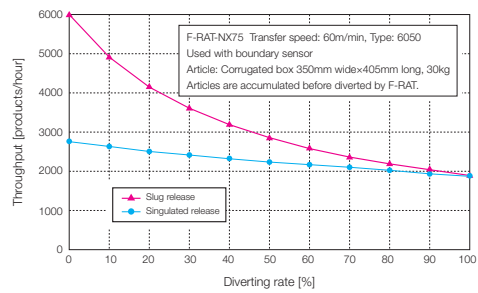
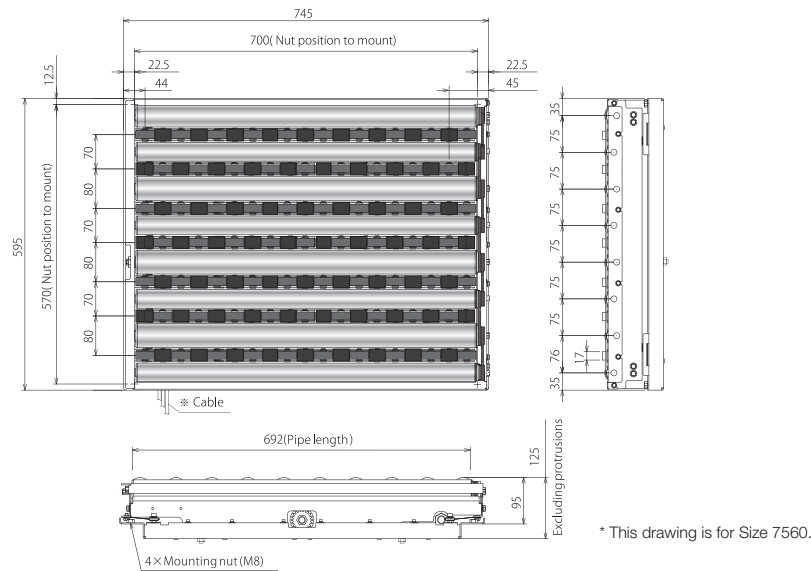


Specifications

Throughput	2,250 pcs/hour (with 50% diverting rate)					
	<div>*Values in the graph are reference values as measured in-house, and are not guaranteed.</div> <div>*For slug release, the value is when F-RAT's both up and downstream conveyor sections are controlled by id Linx.</div> <div>*Depending on the size, material, bottom surface condition, and transfer speed of the article, the stopping distance and throughput vary.</div> <div><div>F-RAT-NX75 Transfer speed: 60m/min, Type: 6050 Used with boundary sensor Article: Corrugated box 350mm wide×405mm long, 30kg Articles are accumulated before diverted by F-RAT.</div></div>					
Applications	<ul style="list-style-type: none"><li>• Ultimate high performance F-RAT module, enhancing maintenance, controllability and safety, accomplishing various diverting and sorting.</li><li>• Further functions are obtained by connecting to id-PAC technology.</li></ul>					
Model number	F-RAT-NX75 - (motor type) (speed) - (size) - (controller) (input signal type)					
Motor type	F: FE 10pin connector					
Transfer speed (m/min)	17m/min 60m/min (roller/carrier wheel transport speed)					
Available sizes (mm)	6040	L595 × W395	7540	L745 × W395	9040	L895 × W395
	6050	L595 × W495	7550	L745 × W495	9050	L895 × W495
	6060	L595 × W595	7560	L745 × W595	9060	L895 × W595
	6070	L595 × W695	7570	L745 × W695	9070	L895 × W695
	6080	L595 × W795	7580	L745 × W795	9080	L895 × W795
Maximum transferrable weight (kg) (*Reference)	50					
Controller	E: EtherNet/IP communication	■ 1 × IB-E04 (for roller/carrier wheel transfer)  ■ 1 × HBM-201B□ (for lifting)  □ □ ... NorP		C: Standard	■ 1 × CB-016B□6 (for roller transfer)  ■ 1 × CBK-109F□ (for carrier wheel transfer)  ■ 1 × HBM-201B□ (for lifting)  □ □ ... NorP	
Input signal	N: NPN I/O type P: PNP I/O type					

External dimensions



Technology for tomorrow



MDR is the master cell for material handling

ITOHO DENKI CO.,LTD.

Head office

■ Itoh Denki Co., Ltd.

1146-4 Asazuma-cho, Kasai, Hyogo 679-0105 Japan  
Tel: +81 790 47 0955 Fax: +81 790 47 1325

Europe, Middle East & Africa

■ Itoh Denki Europe SAS

490, avenue des Jourdiés, ZAE des Jourdiés BP 323,  
74807 St Pierre en Faucigny CEDEX, France  
Tel: +33 4 50 03 09 99 Fax: +33 4 50 03 07 60

■ UK office

Tel: +44 19 24 36 65 39 Fax: +33 4 50 03 07 60

■ Germany office

Tel: +49 911 25 26 200 Fax: +49 911 25 26 201

North & South America

■ Itoh Denki U.S.A., INC.

2 Great Valley Blvd, Wilkes-Barre PA18706-5332 U.S.A.  
Tel: +1 570 820 8811 Fax: +1 570 820 8838

China

■ Itoh Denki Shanghai Co., Ltd


No.689, room 1812, No.689 Guangdong Rd, Shanghai  
P.R.200001, China  
Tel: +86 21 6341 0181 Fax: +86 21 6341 0180

Asia

■ Itoh Denki Asia Limited

Unit F.22nd floor, No.8 Hart Avenue, Tsim Sha Tsui  
Kowloon, Hong Kong  
Tel: +852 2427 2576 Fax: +852 2427 2203

1146-2 Asazuma-cho, Kasai, Hyogo 679-0105 Japan  
Tel: +81 790 47 1225 (rep) Fax: +81 790 47 1328 Email: info@itohdenki.co.jp  
<http://www.itohdenki.co.jp/>



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グリーン物流  
パートナーシップ

Itoh Denki is a member of the Green Partnership.

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No.M80

2-01K - 1903



POWER MOLLER® PLUS



Flat-Right Angle Transfer Module

F-RAT  
Neo-CrossOver

New Module

Evolution - Advanced and sophisticated design  
Solution to labor shortage issues.



ITOHO DENKI CO.,LTD.

Module



Flat-Right angleTransfer

# F-RAT Neo-CrossOver

NX series

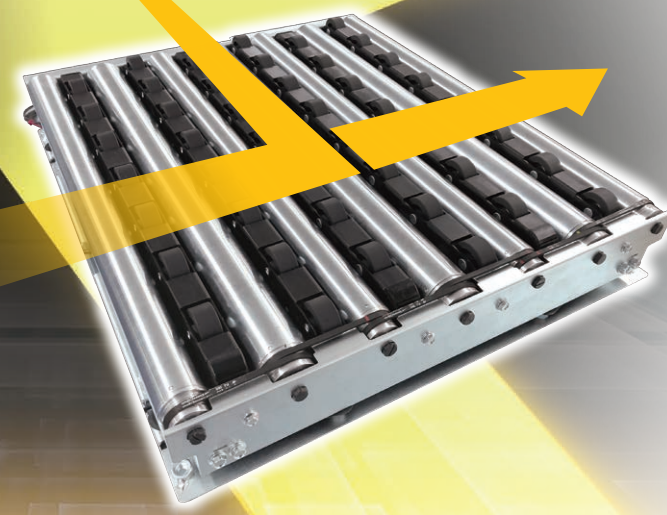
Highest performance Right Angle Transfer Unit in the industry with high safety standard and low-maintenance.

Advanced design

**50 kg**  
Maximum load

**2,250**  
box / hour throughput

**75 mm**  
diverting roller centers



**Safety considerations**  
Designed to prevent accident such as finger caught.

**No pneumatic**  
Environmentally friendly

**POWER MOLLER® PLUS**

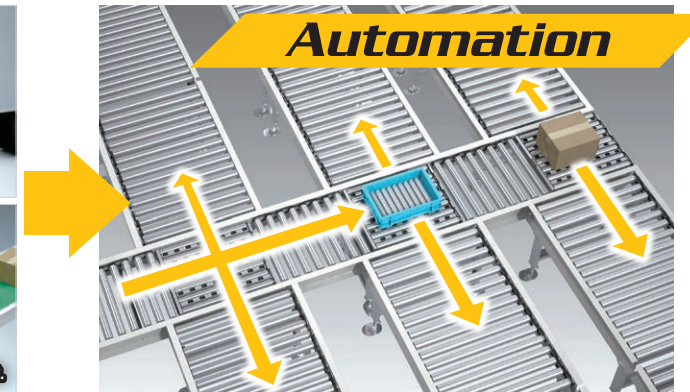
Ground-breaking solution for manufacturing and intralogistics automation. **F-RAT Solution**

F-RAT improves work environment through sorting automation.

Solution to labor shortage

Increased productivity

Eliminates human sorting error



**Automation**

## What is Neo-CrossOver ?

Concept of New-CrossOver is automation and IoT within conveyor systems; Automation is increasingly imperative to cope with labor shortage in recent years. F-RAT Neo-CrossOver is ground-breaking module accomplishing automated sortation with less engineering efforts. Innovative technology from ITOH DENKI achieving human-machine collaboration in harmony.

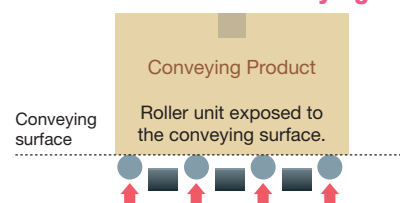
F-RAT design enables conveyed product to change transfer direction in 90 degrees with no lifting nor vibration. Simple 90 degree flat diverting module.

SEQUENCE 1 --- Receiving product (straight transfer)

SEQUENCE 2 --- Direction change

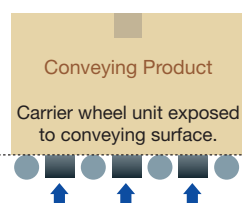
SEQUENCE 3 --- Right Angle Transfer

**Roller unit is conveying.**



**Movement of receiving product to F-RAT**  
Carrier wheel unit lowered  
Roller unit exposed

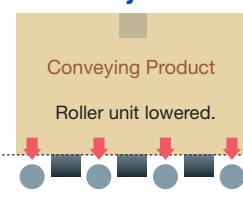
While receiving product into F-RAT, Roller unit is at conveying surface position to receive.



**Movement of direction change**  
Carrier wheel unit at conveying surface  
Roller unit at conveying surface

Preparing for diverting, Carrier wheel unit is exposed to conveying surface to prepare flat surface transfer. Having both Roller and Carrier wheel unit at transfer surface minimizes vibration and impact to the conveying product.

**Right Angle Transfer by Carrier wheel unit.**



**Movement of Right angle transfer**  
Carrier wheel unit exposed to conveying surface  
Roller unit lowered

While diverting product, the Roller unit is lowered, thereby Carrier wheel unit drives the conveying product.

## Features

### Becoming an IoT

System development with software and hardware paired id-PAC makes conveyor system consisting IoT.

### Simple to design and safe to operate

Designing conveyor system becomes easy as connecting the units. Proprietary controller reduces programming efforts.

### No pneumatic

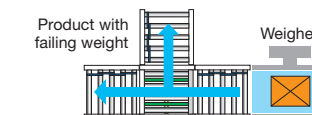
No air compressor required. 100% Electric Power Operated

### Energy saving

Run-on-demand operation, drives motor only when product needs to be moved.

### NG product sorting with weigher

- Combining F-RAT with weigher for passed - failed product sorting by weight.



Product with passing weight



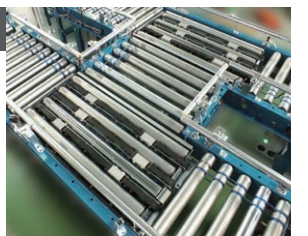
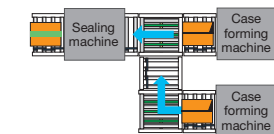
### Multi-layer conveyor line optimizes spaces

- Allows multi-layer conveyor design with minimal footprint.
- No pneumatic allows easy and compact design.



### Packaging assembly

- Maximizing the usage of each machine to build efficient packaging line.



### Application for high speed sorting system

- Achieves high speed sorting with roller conveyors.
- Achieves complex sorting by product, destination, etc.



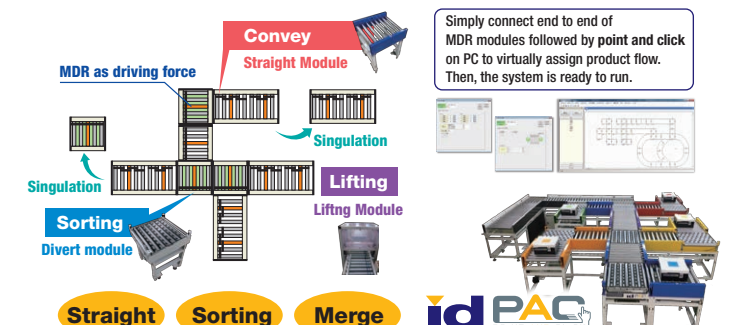
## IoT Ready - F-RAT-NX75

F-RAT-NX75 is applicable to id-PAC. id-PAC is the MDR based conveyor system and its configuration tool developed by ITOH DENKI with matching software and hardware. Having embedded logic, each conveyor module is independent and autonomous. Conveyor configuration can easily be done simply by connecting end to end of modules, and by providing navigation information software through network communication.

id-PAC technology significantly reduces design time and overall cost including the installation. Layout change and expansion can be accomplished easily with Plug and Play basis.

In addition, network connectivity allows users to monitor vital signs of conveyor system and MDR life hours to allow scheduled predictive maintenance work to minimize the down time.

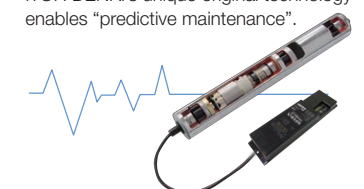
### MDR Conveyor with IoT Technology



### IoT technology from ITOH DENKI

**No more unpredictable sudden stop of operation.**

ITOH DENKI's unique original technology enables "predictive maintenance".



Remote maintenance in addition to remote diagnosis analyzing failure causes is achieved through internet communication.

