

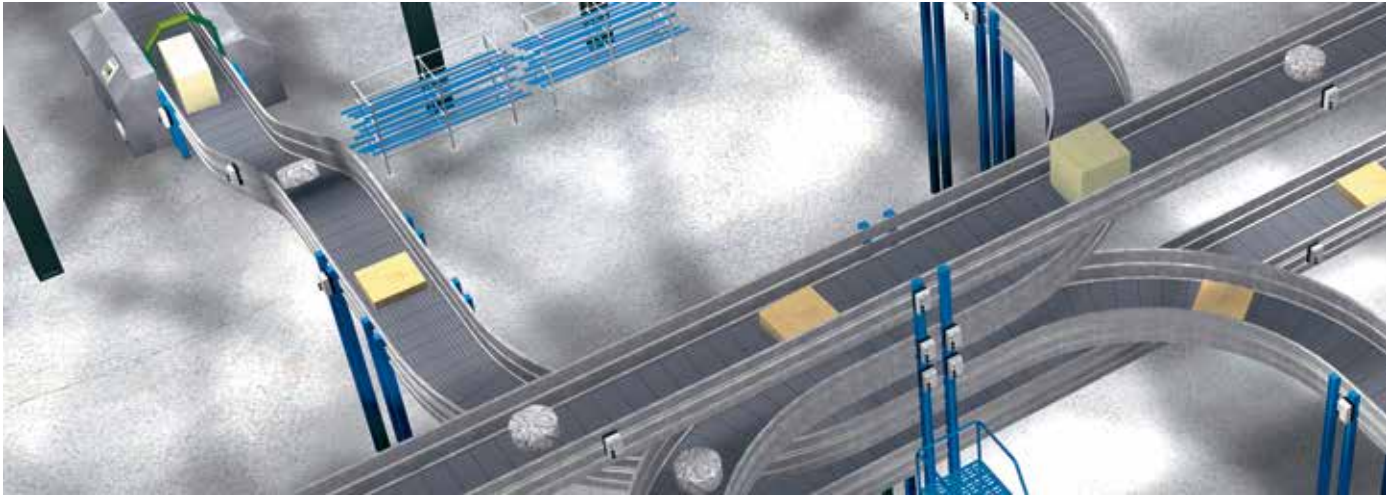
# Material handling applications

Airports, warehouses and intra-logistics



*Powering Business Worldwide*

# Flexible solutions for material handling applications



## Reduce down times Increase system data availability

Eaton's next-generation motor control, automation solutions and components will make your application meet your Key Performance Indicators (KPI's) and your market's demands of today.

Reliability, efficiency and flexible communication options for improved profitability and sustainability – energize your business conveying and handling of parcels, baggage and all kinds of material.

## Improve machine data availability Achieve cost savings

Intelligent and flexible motor control and automation solutions will improve machine and plant availability as well as utilization rates. Achieve savings on energy consumption and reduced down times - get your data available in the cloud and get your business future proof and competitive.

## Make your machines FutureFit

### Condition monitoring

For example the motor current to identify a relevant worsening of the electrical and mechanical conditions and to beware from sudden machine failures.

### Maintenance planning & optimization

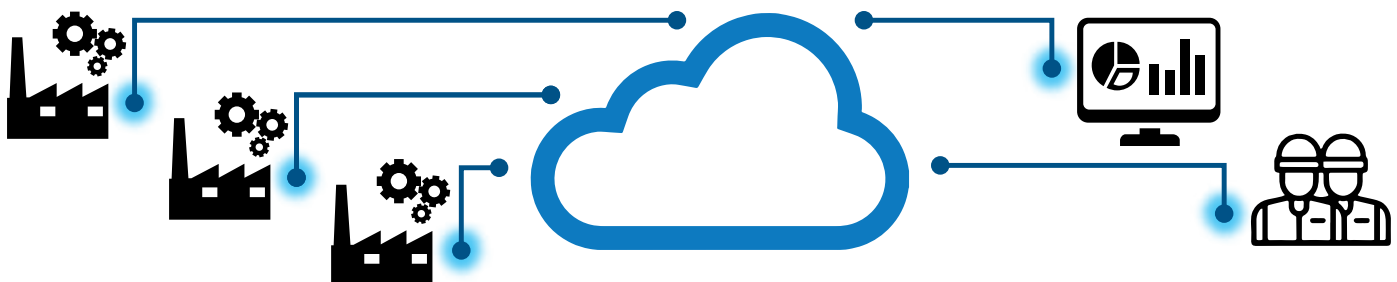
Reduction of maintenance costs through planning optimization for service personnel, remote diagnosis and targeted spare parts procurement.

### Predictive maintenance

Avoid unintended downtimes of the machine by scheduling maintenance and planned off-times.

### Energy management

Integrated energy measurement and need based energy control to optimize energy consumption.



# Predictive maintenance

## Cost savings and customer satisfaction

### High system effectiveness High savings

The Overall Equipment Effectiveness (OEE) as the key measure or KPI helps to monitor and improve productivity, profitability and overall efficiency of production equipment such as e.g. run time and availability of material handling systems and other conveying machinery in context with logistical or manufacturing processes.



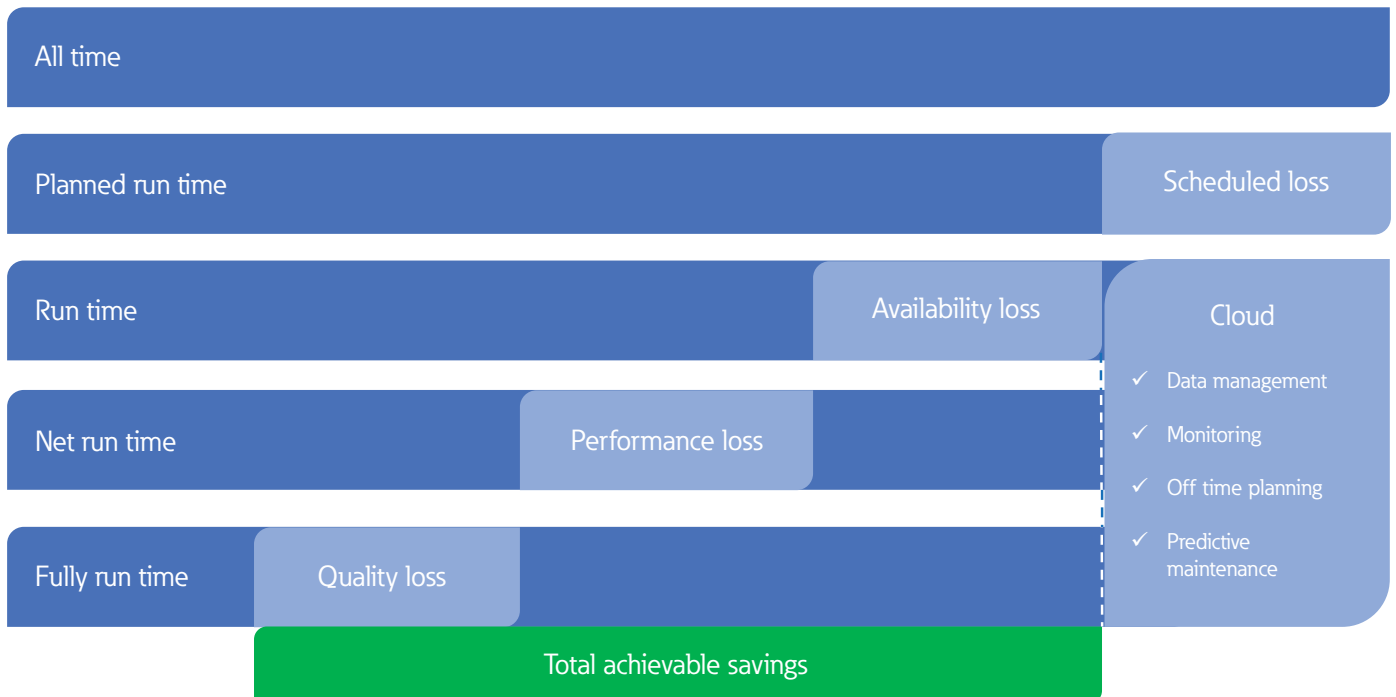
### Significant cost savings and customer satisfaction

The OEE of typical conveying systems at the end of production or e.g. in logistic centers or warehouse face several impacts creating a more or less significant delta between planned run time and fully run time – the usage of intelligent automation and motor control solutions, supplying relevant machine data to the cloud, will raise

effectiveness of material handling systems by reducing down times through predictive maintenance – planned on basis of cloud stored data and related analysis.

Resulting improvements in effectiveness and productivity will bring 2 in 1 - significant cost savings and improved customer satisfaction.

### Overall equipment effectiveness



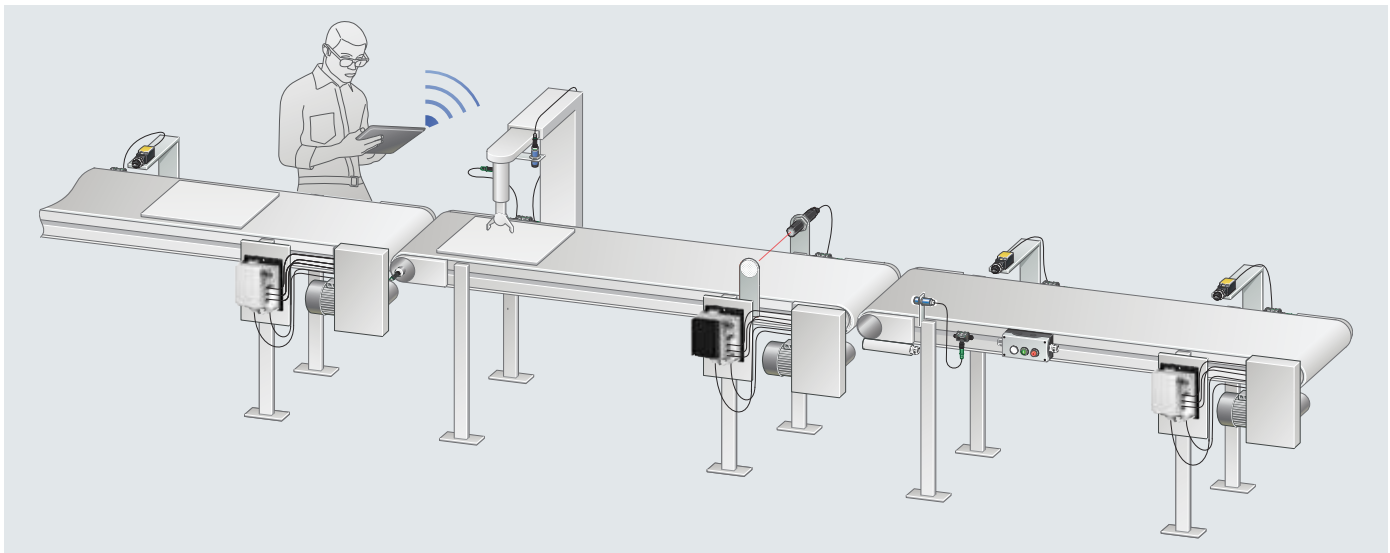
# Eaton's next generation components for handling and conveying systems

## PowerXL™ Rapid Link 5 N° 1 in material handling

Eaton's Rapid Link 5 series is part of the Eaton PowerXL next generation series of drives, specifically engineered for today's more demanding material handling applications such as baggage handling systems at airports or parcel and production goods handling systems in logistic centers and warehouses. With an industry-leading design it covers the typical application needs in this market segment and perfectly fits to the changing demands as e.g. multiple communication and IoT capability to increase plant and machine availability for highest OEE rates and reliability of material handling applications.

Features as decentral and motor close assembly, paired with IP65 rating and all detachable cabling for controls and power, EtherNet-IP and PROFINET communication and easiest assembly and maintenance approach do make this series of drives and motor starters a premium product for usage in the material handling segments.

Find out more on the Rapid Link 5 system on [Eaton.com/rapidlink](http://Eaton.com/rapidlink)



## Main benefits & cost savings

- Decentralized (motor close) assembly
  - Less motor cabling
  - Less EMC measures
- Less assembly efforts
- Detachable cabling
- Daisy chain options\*
- Variable communication
  - IoT capability (E/IP, PROFINET, ASi)
- Easy commissioning PowerXL family
  - Wireless programming and monitoring (NFC & Bluetooth)
  - Easy handling drivesConnect software
- Less maintenance efforts
  - Built-in repair switch
  - Maintenance with logic stand-by
  - Easy replacement in case of damages
- Lowest failure rates
  - IP65 rating
  - Robust design with >100k products served to logistics and airports applications over 2 decades



\*on customer request

## EMS2 and PowerXL DE1 Market entry motor control components

The PowerXL DE1 drive series with its ease of use approach is dedicated to the less complex and cost challenging conveying applications – the DE1 series and also Eaton’s all new Electronic Motor Starter EMS2 are intended to be assembled central in cabinet or decentral in a CI housing, so e.g. beneath a conveying belt and horizontal mounted to easy and cost efficient make you achieve a very powerful release of your application. EMS2 easily serve high switching cycle DOL REV applications with integrated fusing and compatibility to the Eaton Motor Starter Feeder System MSFS.

For more information on the DE1 and EMS2 visit  
[Eaton.com/de1](http://Eaton.com/de1)  
[Eaton.com/ems](http://Eaton.com/ems)



PowerXL series DC1 and DA1 series come along in IP66 housing for challenging environmental circumstances and with optional built in mains disconnectors (maintenance switch) where DA1 additionally does serve a built in PLC function to easily adapt your conveying system to changing customer demands without changing the assembly and to save on investments for other automation.

For more information on the DC1 and DA1 visit  
[Eaton.com/dc1](http://Eaton.com/dc1)  
[Eaton.com/da1](http://Eaton.com/da1)

# Automation and HMIs

## Data visualization and control

### Automation

The state of the art multi-touch panel XV300, available in various screen sizes and with various communication options, with a market leading man machine interacting and heavy duty design fits perfectly to cover the challenging demands in the material handling segment. Use Eaton GALILEO visualization software to track and monitor your conveying system key parameters – XSOFT-CODESYS will make your XV300 a powerful PLC according to IEC61131 standard – get central control of other components and parameters as e.g. Rapid Link 5 with motor current charts or the XN300 I/O system with other system peripheral data.



For more information visit

[Eaton.com/xn300](http://Eaton.com/xn300)

[Eaton.com/xv300](http://Eaton.com/xv300)

Less complex conveying systems or single and easier conveying units – that's what the new easyE4 does perfectly fit to – as intelligent control relay, with a market leading compact design and highly scalable I/O-extensions paired with various programming options and Ethernet communication also the easyE4 will make your application go to the cloud and achieve improved OEE rates- easy4, probably more than a control relay.

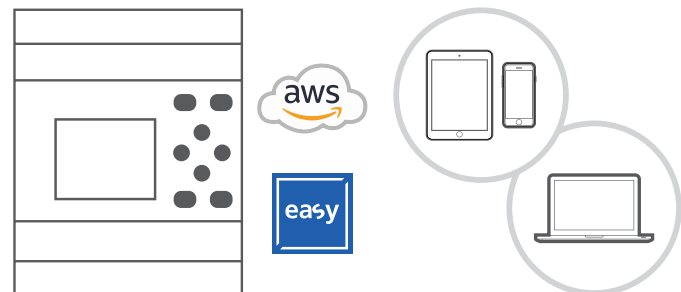


For more information visit

[Eaton.com/easy](http://Eaton.com/easy)

The easyE4 base device can be expanded with up to 11 local expansion modules and 1 communication module (Modbus RTU, SmartWire-DT) offering maximum flexibility.

The easyE4 now comes with a direct connection to Amazon Web Services (AWS). This means that the information stored on the easyE4 device can be safely transferred to the cloud and then e.g. easily accessed on mobile devices.



The integrated web editor simplifies the creation of visualizations and allows for even greater flexibility. The visualization runs on the easyE4 itself and can be accessed like a normal website via the browser of any mobile device, making it hardware-independent.



Controls for material handling and logistics systems in factories and distribution centres must offer high levels of availability and unmatched flexibility. With products that are modular in design and can be installed quickly, you can be sure that your products will reliably move through your process.



Find out more on Eaton's offering for material handling applications at:  
[www.eaton.com/gb/en-gb/markets/machine-building/material-handling.html](http://www.eaton.com/gb/en-gb/markets/machine-building/material-handling.html)