

Cabinet-free technology - IndraDrive Mi

Complete reallocation of all electric drive components on the machine saves production space

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For Immediate Use



The IndraDrive Mi enables machine manufacturers to integrate all electric drive components directly on the machine. The result: Entirely cabinet free, modular machines with a minimized footprint.

Rexroth is moving the complete drive technology from the cabinet to the machine with decentralized power supply units and mains modules.

Plant space is valuable. Which is why end-users demand more compact machines in order to increase their production capacities within an existing space. Separate control cabinets take up much space. For this reason, Bosch Rexroth has now developed the technology to make cabinet-free technology a reality. In addition to the company's proven motor-integrated and near-motor IndraDrive Mi drives, the company has developed decentralized power supply and mains modules. Now, machine manufacturers can integrate all drive components directly on to the machine without the need for a control cabinet. Rexroth designed the cabinet-free power supply and mains modules like its motor-integrated and near-motor drive modules with IP65 classification to

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protect against dust and water stream protection for robust use directly in the machine.

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The mains module includes a mains filter, mains regulator and even the mains protection in one device. The regenerative power supply module consists of control electronics, brake resistor, and brake transistors. The machines and modules are connected to the power supply directly without deviation via the cabinet. This reduces machine assembly wiring by 90 percent.

With the decentralized modules, machine manufacturers can also connect up to 30 IndraDrive Mi units in series in one hybrid cable (power, communication and control voltage) up to 200 meters long. Significantly more drives can be switched in series, depending on power consumption. In adjacent near-motor drives, a newly developed hybrid plug further reduces assembly work. These protected connector pieces, used for communication and power supply, are simply plugged into an adjacent IndraDrive Mi unit by assembly technicians.

Connect to any Control

The IndraDrive Mi offers the following multi -Ethernet protocols: Sercos, PROFINET IO, EtherNet/IP, and EtherCAT allowing the user to connect to essentially any control.

Increased Modularity

The cabinet-free drive technology extends the possibilities of modularized machine concepts. Machine manufacturers can pre-assemble modules and then connect them to one another without any further changes to the cabinet. In addition, Rexroth increases the modularity with standardized interfaces for communication: the IndraDrive Mi supports all of the common Ethernet-based protocols, such as ProfiNet, EtherNet/IP and EtherCAT, and Sercos the automation bus, all in one piece of hardware. The hardware remains identical and selection occurs purely via software.

To achieve consistent modularization, machine manufacturers are increasingly reallocating control functions to the individual machine modules. With the drive-integrated control unit from Rexroth, drive functions, motion control and motion logic merge into an open automation platform. This IEC 61131-3 standards-based motion logic system controls complex motion tasks. The drive-based

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control by Rexroth coordinates up to nine IndraDrive Mi units as slaves in real time.

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Save energy. Save costs.

The IndraDrive Mi Cabinet-free power supply is a regenerative power supply, returning excess energy to the power grid therefore reducing energy consumption. In Smart Energy Mode it prevents peak loads and greatly reduces average energy consumption. The result of this is better grid compatibility, and the same machine performance with smaller components to reduce cost.

About Bosch Rexroth

As one of the world's leading suppliers of drive and control technologies, Bosch Rexroth ensures efficient, powerful and safe movement in machines and systems of any size. The company bundles global application experience in the market segments of Mobile Applications, Machinery Applications and Engineering, and Factory Automation. With its intelligent components, customized system solutions and services, Bosch Rexroth is creating the necessary environment for fully connected applications. Bosch Rexroth offers its customers hydraulics, electric drives and controls, gear technology, and linear motion and assembly technology, including software and interfaces to the Internet of Things. With locations in over 80 countries, more than 30,500 associates generated sales revenue of approximately 5.5 billion euros (\$6.2 billion) in 2017.

To learn more, please visit www.boschrexroth-us.com

About Bosch

Having established a regional presence in 1906 in North America, the Bosch Group employs nearly 34,500 associates in more than 100 locations, as of December 31, 2017. In 2017 Bosch generated consolidated sales of \$13.7 billion in the U.S., Canada and Mexico. For more information, visit twitter.com/boschusa, twitter.com/boschmexico and www.bosch.ca.

The Bosch Group is a leading global supplier of technology and services. It employs roughly 402,000 associates worldwide (as of December 31, 2017). The company generated sales of 78.1 billion euros (\$88.2 billion) in 2017. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT company, Bosch offers innovative solutions for smart homes, smart cities, connected mobility, and

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connected manufacturing. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to deliver innovations for a connected life. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." The Bosch Group comprises Robert Bosch GmbH and its roughly 440 subsidiary and regional companies in 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. The basis for the company's future growth is its innovative strength. At 125 locations across the globe, Bosch employs some 64,500 associates in research and development.

Additional information is available online at www.bosch.com, www.iot.bosch.com, www.bosch-press.com, www.twitter.com/BoschPresse.

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