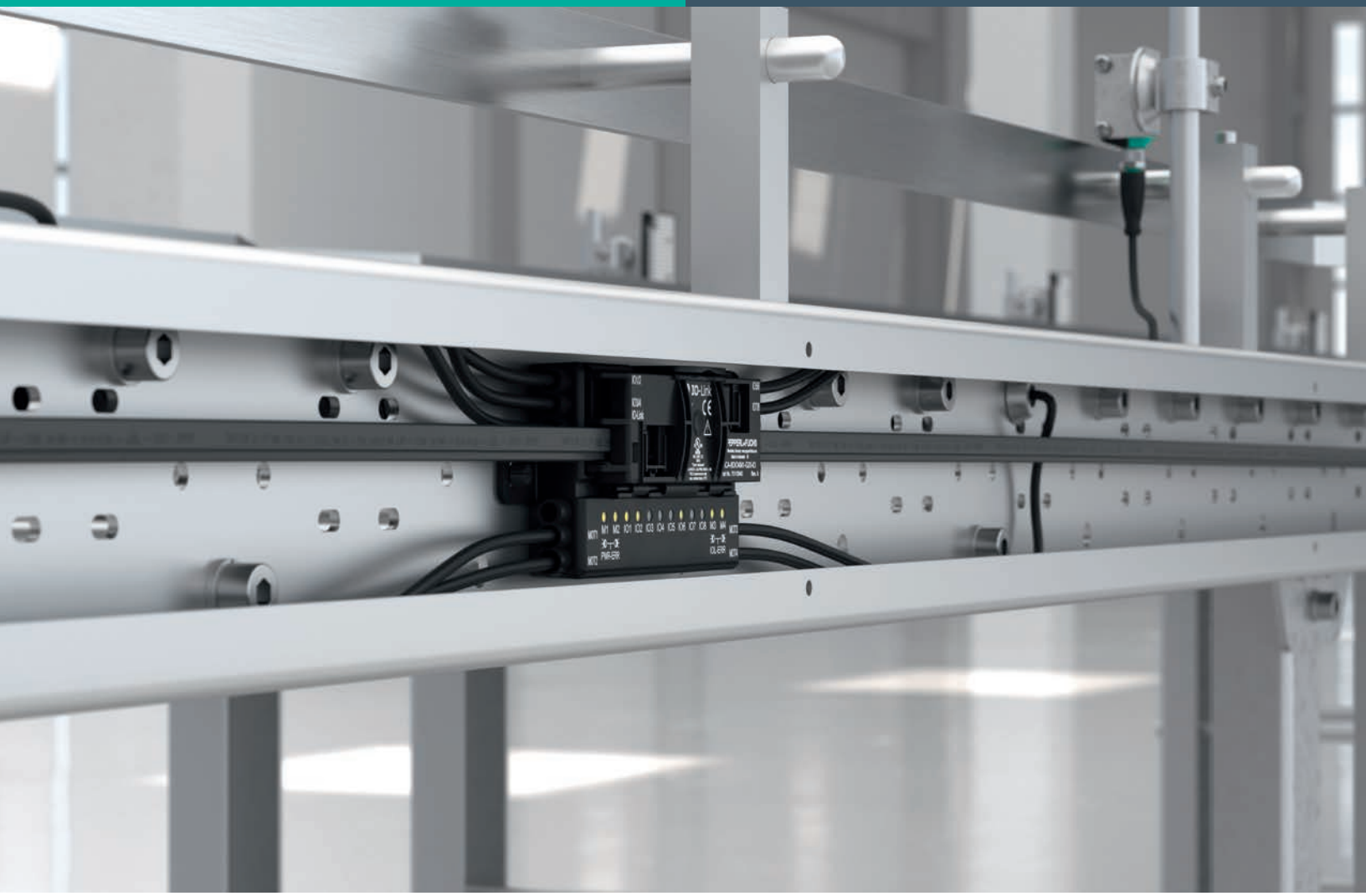
Driving Conveyor Technology.

Unmatched housing advantages: perfected for seamless integration and easy installation.

G20 Series Motor Control Modules



Your automation, our passion.

PEPPERL+FUCHS

G20 Series Motor Control Modules

Perfected for Use in Roller Conveyor Systems

Fast throughput times, high efficiency, and reliable process sequences: The demands placed on conveyor technology are high. The motor control modules in the G20 series meet these perfectly.

Reliable Control of Motorized Drive Rollers (MDRs)

In a roller conveyor system, the conveyed goods are transported via rollers. The active rollers (motorized drive rollers) are driven by a motor and, connected via a rubber O-ring, set the passive rollers in motion.

The modules in the G20 series are the tailor-made solution for reliable and efficient control of motorized drive rollers. While all the electronics for motorized rollers are built into the roller itself, classic motors are often controlled via digital IOs. G20 modules are also available for this type of control.

Sophisticated Housing Concept

Specially developed for roller conveyor technology, the extremely compact G20 modules can be installed directly into the side profile of the mounting rail using simple clip or screw mounting. All required sensor, actuator, and motor roller cables are integrated directly into the module. The flat cables for power and communication can be easily snapped into place without tools using piercing technology. The LEDs also provide a clear status display at all times.

Efficient Pre-assembly of Individual Conveyor Segments

The sophisticated housing concept allows time-saving pre-assembly of individual conveyor segments. The motor control modules and sensors are already fitted to the individual conveyor segments when they are delivered to their destination. Once these have been assembled into a complete conveyor system, only the flat cables for power and communication are snapped into place without tools in the final assembly step. This makes the assembly of a system particularly efficient and less prone to errors.

Highlights

- G20 series motor control modules for 24 V and 48 V DC motorized drive rollers or for up to 16 freely configurable digital IOs
- Flexible application options due to numerous variants with different protocols: AS-Interface, IO-Link, and stand-alone ZPA module
- Perfect integration: application-optimized design for installation directly into the mounting rail
- Tool-free penetration technology allows pre-assembly of individual conveyor segments
- All required cables are integrated directly on the module for increased cost efficiency
- Compatible with specific lines from all major MDR manufacturers; customer-specific special solutions possible

For more information, visit
pepperl-fuchs.com/pf-g20

G20 Series Motor Control Modules

The Optimum Solution for Every Application

For maximum efficiency, you can choose between motor control modules with IO-Link, AS-Interface, or a stand-alone solution for zero pressure accumulation conveying (ZPA), depending on the conveyor application. Both for conveyor systems with 24 V and 48 V technology.

IO-Link, AS-Interface, and ZPA

The G20 IO-Link wide-range module can control up to four motorized drive rollers. It is therefore used in applications with a high IO density, such as elevators with buffer zones in the storage area. Due to the higher data bandwidth of IO-Link, comprehensive data can be supplied and therefore more complex conveying tasks can be solved.

The G20 AS-Interface modules are the ideal choice for long conveyor lines with widely distributed IOs. For standard applications in which high-precision control of the motorized drive rollers is not required, for example based on the individual weight of the conveyed goods, AS-Interface is the simple and cost-effective solution.

The G20 ZPA modules with integrated logic are suitable for long, straight conveyor sections, such as loading zones, as they use a defined safety distance to ensure that the conveyed goods do not collide at any time—without the need for a higher-level control system.

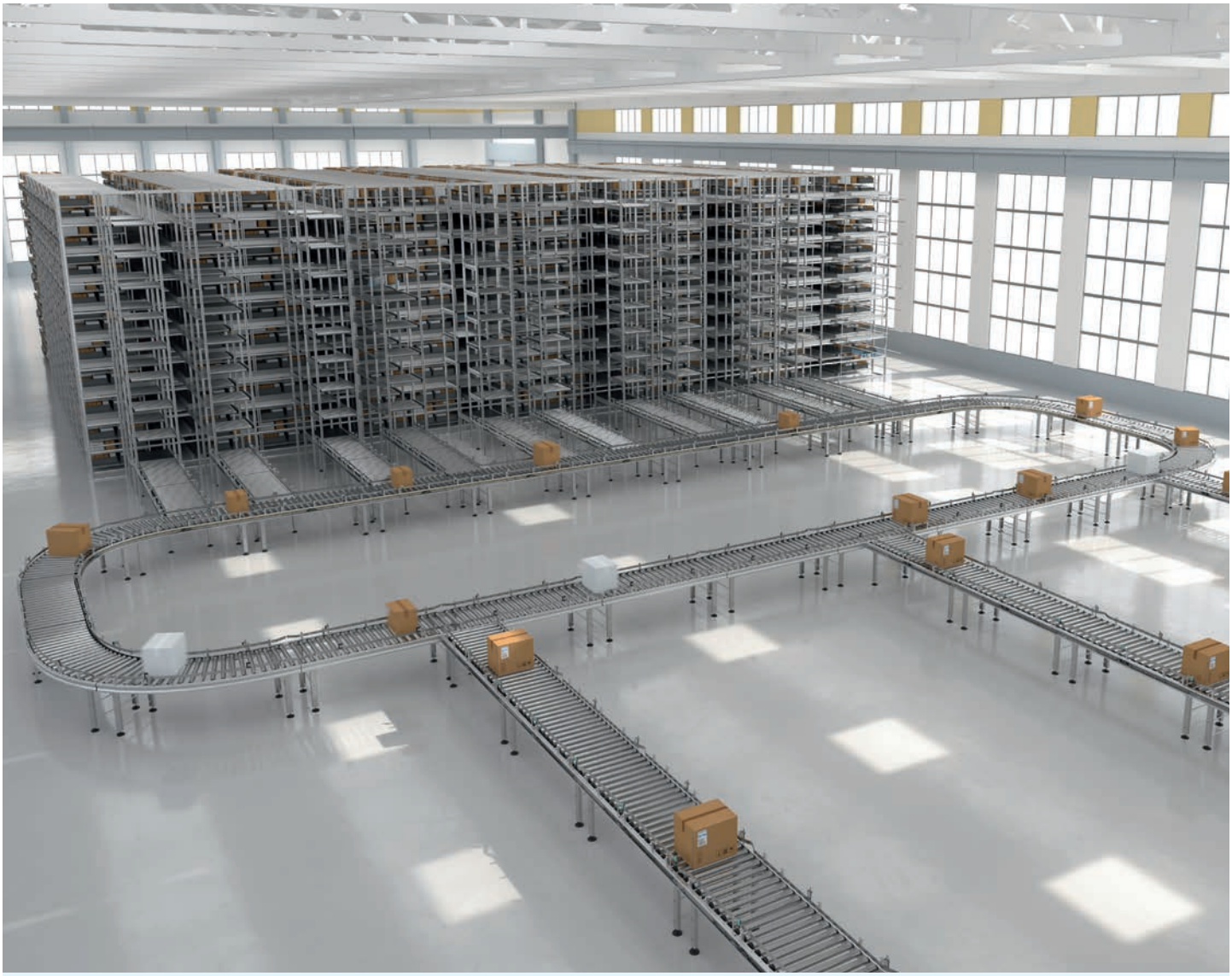
24 V and 48 V Conveyor Technology

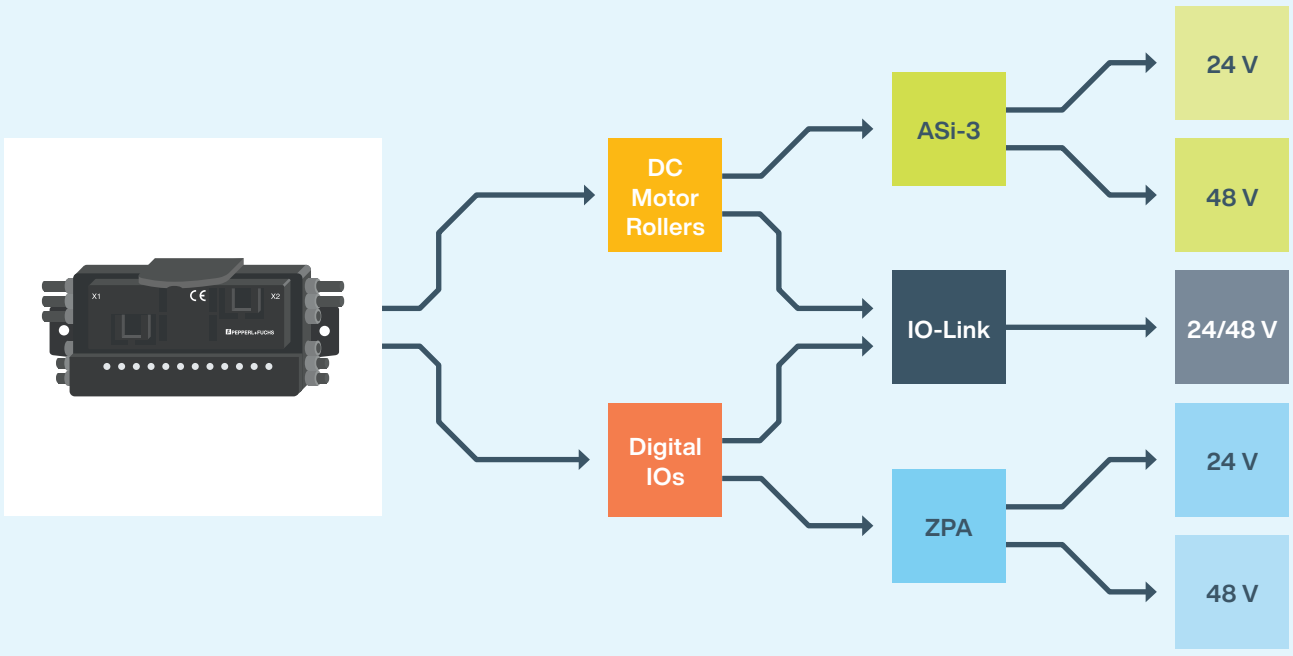
While conventional conveyor systems are predominantly equipped with 24 V motorized rollers, conveyor technology is increasingly moving toward 48 V technology. This not only simplifies the wiring concept, but also offers savings potential for the power supply units along the entire conveyor line. The modules in the G20 series can control both 24 V and 48 V motorized drive rollers.

Compatible Motorized Drive Rollers

The G20 portfolio is compatible with motorized drive rollers from many manufacturers and therefore already covers a large number of different motorized rollers. Pepperl+Fuchs also offers the option of customer-specific special solutions. The modules are compatible with the following common motorized drive roller types, among others:

- Interroll EC310 24V AI
- Interroll EC5000 24/48V AI
- Rulmeca BL3
- Itoh Denki PM500XC
- Itoh Denki PM500XK
- PULSEROLLER Senergy-IDC
- Lenze o450 Analog




DC Motor Rollers
Digital IOs
ASi-3
IO-Link
ZPA
24 V
48 V
24/48 V
24 V
48 V

G20 AS-Interface Module: For Standard Applications on Long Conveyor Lines

AS-Interface in Conveyor Technology

AS-Interface is the cost-effective and simple solution when it comes to wiring extensive conveyor lines with widely distributed motorized drive rollers. Two motorized drive rollers and sensors can be controlled per module using 4-bit process data. Up to 62 G20 modules can be flexibly connected to an AS-Interface line. With a double gateway, up to 124 devices—each controlling two zones—can even be connected to a PLC by using only one IP address.

Complete AS-Interface Portfolio

In the ASi portfolio from Pepperl+Fuchs you will find all the components you need for wiring a conveyor system with AS-Interface. The powerful gateway can be integrated into both EtherNet/IP and PROFINET networks and is available as a single and double version. The integrated web server enables simple configuration, diagnostics, and monitoring via mobile devices. The REST API interface also enables the implementation of IIoT applications.

Technical Data	VBA-4E4A-G20-ZEJ/ M3L-P9	VBA-4E4A-G20-ZEJ/ M3L-P10	VBA-4E4A-G20-ZEJ/ M48L-P12
Supported motor rollers	■ Interroll EC310/EC5000 24 V AI ■ Rulmeca BL3 ■ Itoh Denki PM500XK/PM500XC ■ PULSEROLLER Senergy-IDC ■ UniDrive One (pancake motor) ■ Lenze o450 Analog	■ Itoh Denki PM500XE/PM500XP	■ Interroll EC5000 48 V AI ■ Lenze o450 Analog
Communication interface	AS-Interface V 3.0 (A/B device)		
Inputs/outputs	2 digital inputs + 2 motor roller outputs		
Current loading capacity	■ 3.5 A (continuous), 5 A (< 2 s), max. 7.5 A (< 0.3 s) per motor ■ Total current (continuous): ■ max. 10 A per device (TB ≤ 50 °C) ■ max. 6 A per device (TB ≤ 70 °C)		
Modes	Standard (Speed, Direction... as parameter)		
Temperature range / degree of protection	–25 °C ... +70 °C / IP54		
Dimensions (H × W × L)	27.5 × 135.5 × 54 mm		

For more information, visit
pepperl-fuchs.com/pf-g20-asi

G20 IO-Link Module: Larger Data Bandwidth for More Complex Conveying Tasks

IO-Link in Conveyor Technology

Process, parameter, and diagnostic data are supplied via IO-Link. The transmission of large amounts of data enables high-precision process control for complex conveying tasks. Speed, direction, and ramps can be individually controlled with the G20 IO-Link modules. Diagnostic data can be used to obtain reliable information about the status of connected sensors and actuators in order to prevent downtimes through predictive maintenance, for example. IO-Link also offers particularly simple and flexible configuration options.

Comprehensive IO-Link Portfolio

The Pepperl+Fuchs portfolio includes all devices for setting up a conveyor system with IO-Link communication: from the infrastructure level to IO-Link sensors and peripheral devices. The ICE11 IO-Link master with multiprotocol is the flexible and robust choice for control-based applications. The IO-Link masters in the ICE2/ICE3 series have an OPC UA/MQTT interface, making them the ideal solution for cloud-based applications without a higher-level controller.

IO-Link

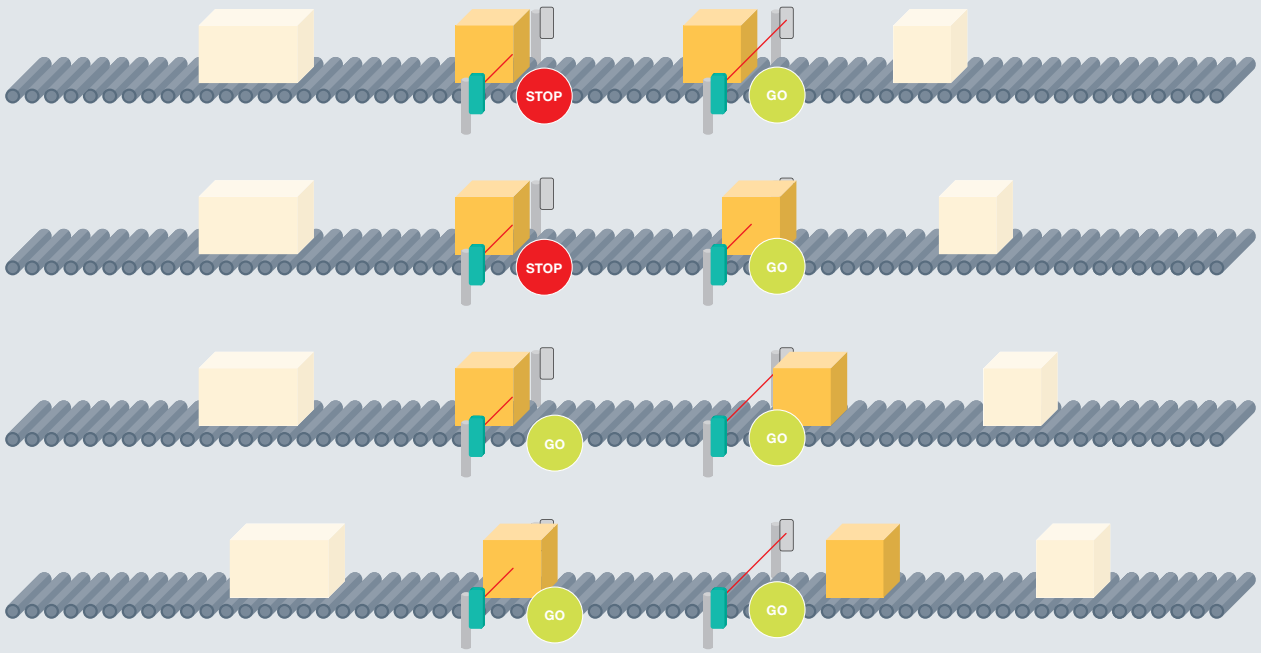
Technical Data	ICA-8IO-4M4-G20-IO-P14
Supported motor rollers	■ Interroll EC310/EC5000 24 V/48 V AI (20 W/35 W/50 W) ■ Rulmeca BL3 ■ Itoh Denki PM500XK/PM500XC ■ PULSEROLLER Senergy-IDC ■ UniDrive One (pancake motor) ■ Lenze o450 Analog
Communication interface	IO-Link V1.1.3 (Class A device)
Inputs/outputs	8 digital inputs/outputs + 4 motor roller outputs + rotary encoder input

Current loading capacity	■ 3.5 A (continuous), 5 A (< 2 s), max. 7.5 A (< 0.3 s) per motor
	■ Total current (continuous):
	  ■ max. 10 A per device (TB ≤ 50 °C)
	  ■ max. 6 A per device (TB ≤ 60 °C)

Modes	Standard (Speed, Direction ... as parameters)/ Extended (Speed, Direction ... in process data)
Temperature range / degree of protection	–25 °C ... +70 °C / IP54
Dimensions (H × W × L)	27.5 × 135.5 × 54 mm

For more information, visit
pepperl-fuchs.com/pf-g20-io-link

G20 ZPA Module: Independent Control Module for Zero Pressure Accumulation Conveying



Zero Pressure Accumulation in Conveyor Technology

The principle of zero pressure accumulation (ZPA) ensures that defined distances are maintained between the individual conveyed goods. To prevent collisions, the conveyor section is divided into several zones. If the next zone is occupied, a sensor signal prevents the conveyed goods from the previous zone from entering this zone. This ensures that there is always a predefined safety distance between the goods.

The intelligent G20 ZPA works completely autonomously and without a higher-level control system. Application-specific settings can be made directly on the module using rotary switches and operation is very simple via plug-and-play.

ZPA Analyzer for Simple Diagnostics

With the ZPA Analyzer as an accessory tool, diagnostics are also extremely simple. If the analyzer is connected to the last module in a series, all settings and diagnostic information are clearly displayed immediately after connection via USB. This provides information on the module configurations, the set operating mode, and the status of the inputs at a glance. Defective modules can also be easily detected.

ZPA

Technical Data	VAZ-2E2A-G20-ZPA1
Supported motor rollers	■ Interroll EC310/EC5000 24 V AI (20 W/35 W/50 W) ■ Rulmeca BL3 ■ Itoh Denki PM500XK/PM500XC ■ PULSEROLLER Senergy-IDC ■ UniDrive One (pancake motor) ■ Lenze o450 Analog
Communication interface	Integrated logic
Inputs/outputs	2 digital inputs + 2 motor roller outputs

Current loading capacity	■ 3.5 A (continuous), 5 A (< 2 s), max. 7.5 A (< 0.3 s) per motor
	■ Total current (continuous):
	  ■ max. 10 A per device (TB ≤ 50 °C)
	  ■ max. 6 A per device (TB ≤ 70 °C)

Modes	7 modes (Standard ZPA, Enhanced ZPA, Long Zone, Transportation, Direct Control, Direction Control, Secondary)
Temperature range / degree of protection	–25 °C ... +70 °C / IP54
Dimensions (H × W × L)	27.5 × 135.5 × 54 mm

For more information, visit
pepperl-fuchs.com/pf-g20-zpa

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