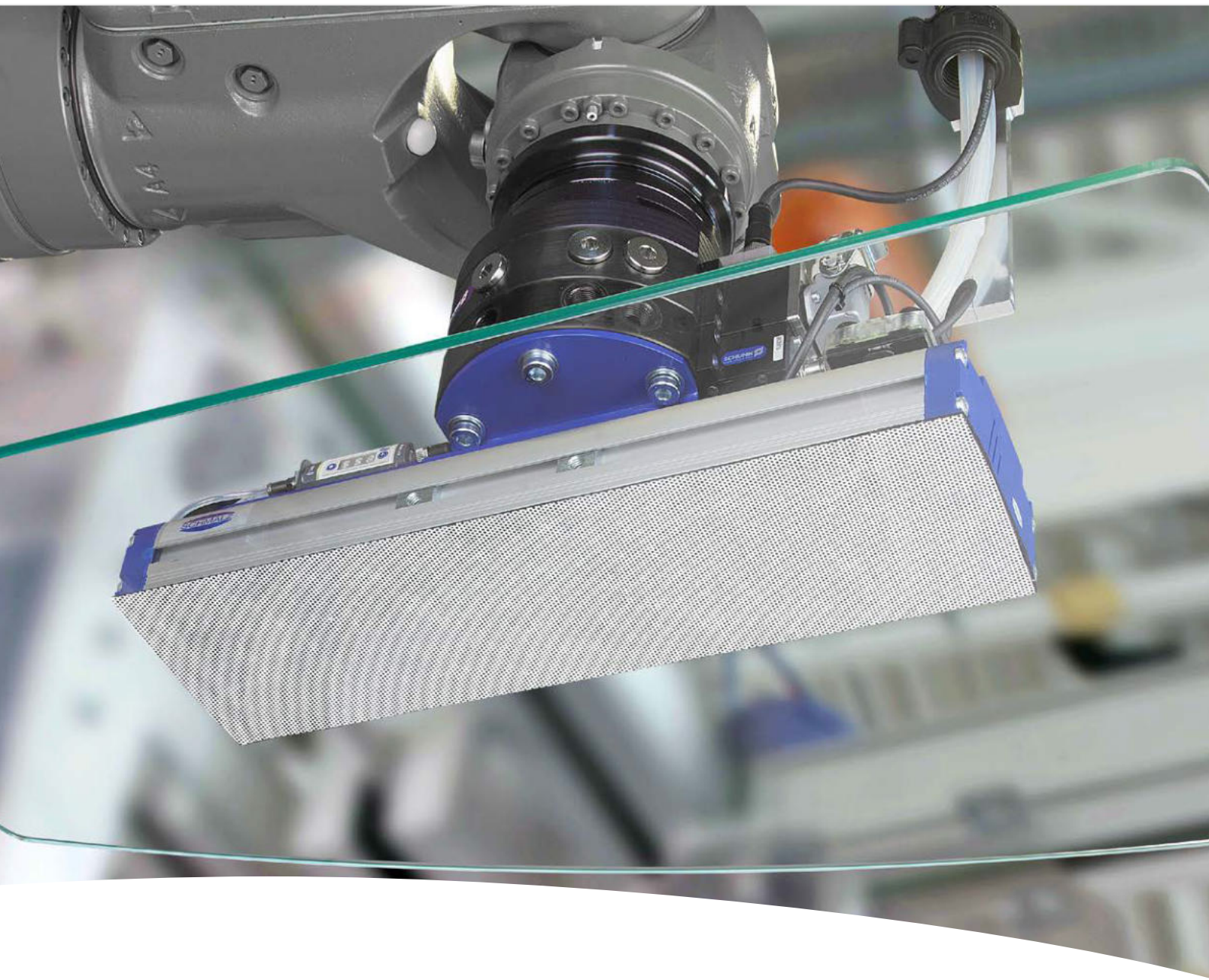




Versatile and Flexible Grip

Vacuum Area Gripping Systems

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Area Gripping Systems FXP / FMP

Versatile and flexible for handling a wide variety of workpieces



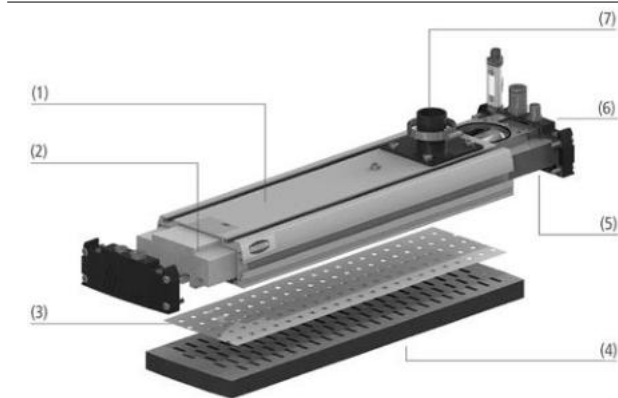
Suitability for Industry Specific Applications



Area gripping systems FXP / FMP

Applications

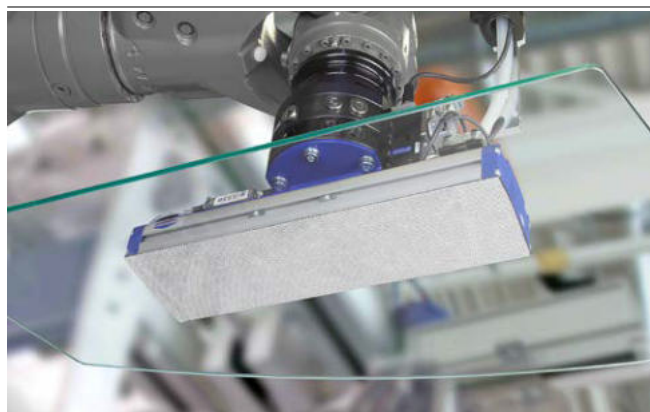
- Universal gripper for handling workpieces regardless of size, geometry, material and surface
- Handling of workpieces made from various materials, such as wood (coated or unplanned), packaging (boxes, bags or cans), metal sheets, glass, plastics, CFRP, etc.
- Handling of porous workpieces, workpieces with gaps or undefined pick-up position
- Mark-free handling of sensitive workpieces such as display glass
- Ideal for use on robots due to its low weight
- Vacuum generation optionally integrated (type FXP) or external (type FMP)



Design area gripping systems FMP-S

Design

- Aluminum basic profile (1) with side T-slots for sensors and an integrated air supply for separation
- Vacuum booster (2) for quicker evacuation; valve film (3) for the quick change of valve type and size
- Sealing element (4): suction cups with push-in function or sealing foam with adhesive film
- Optional integrated plug-in vacuum valve (5): fast evacuation and high suction volume
- End cover with integr. functions (6): compressed air connection, vacuum gauges; opt. vacuum switch and control valves
- Type FXP with integrated multi-stage ejector; type FMP with connection piece (7) for external vacuum generation



Vacuum area gripper FXP with protective layer SU for mark-free handling glass

Product Highlights

- Integrated vacuum generator enables shortest cycles; minimal interfering contours (FXP)
- Connection of electrical vacuum generators enables high volume flows and vacuum up to -0.8 bar at low operating costs (FMP)
- Vacuum booster integrated in the base profile ensures fast evacuation and short cycles
- Gripper can be optimally adapted to the application thanks to selectable sealing element (suction cups or sealing foam)
- Check valves (SVK) ideal for porous workpieces; flow resistors (SW) for smooth surfaces and swiveling up to 45°
- Intelligent versions FXP-i and FMP-i with condition monitoring functions and communication interfaces for monitoring and controlling the entire production process



**86% higher suction force
than comparable grippers**



**Flexible gripping of work-
pieces wider than 20 mm**



**Energy efficient through
flow optimization**

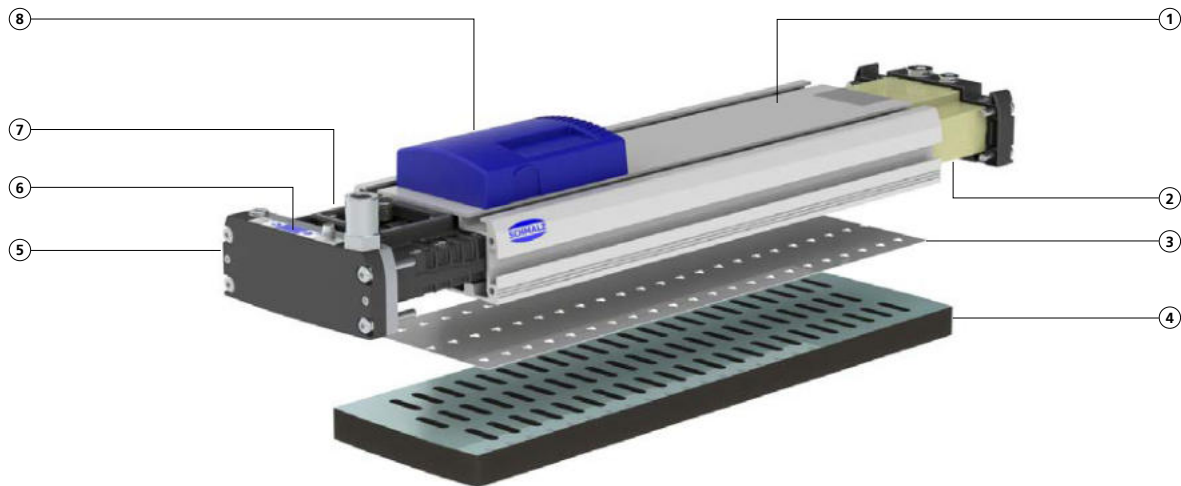
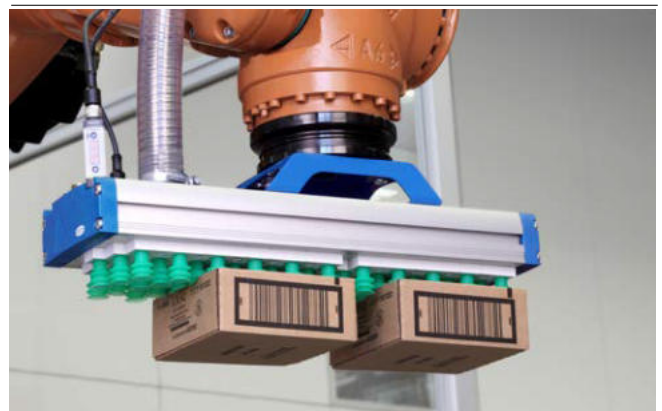


Fig. shows type FXP-i

- | | | |
|--|---|--|
| <p>① Aluminum base section</p> <ul style="list-style-type: none"> • Variable gripper length possible <p>② Vacuum booster</p> <ul style="list-style-type: none"> • Faster evacuation due to reduced inner volume • Maximum power is reached instantly <p>③ Valve film</p> <ul style="list-style-type: none"> • For quickly changing the valve type (check valves or flow resistors) and valve size | <p>④ Sealing element</p> <ul style="list-style-type: none"> • Suction cups with push-in function • Sealing foam with optimized adhesive film (shown) <p>⑤ Plug-in vacuum valve / control valves</p> <ul style="list-style-type: none"> • Type FXP-S and FMP-S are equipped with control valves for ejector control or an integrated vacuum valve • High functional reliability • Minimized installation costs • Avoidance of interfering contours | <p>⑥ Intelligent process monitoring</p> <ul style="list-style-type: none"> • FXP-i and FMP-i feature condition monitoring and predictive maintenance to increase system availability • Automatic air saving function (type FXP-i) • NFC technology enables parameterization with smartphone • IO-Link interface communicates value-added data in common fieldbus systems <p>⑦ Plug-in ejector (type FXP)</p> <ul style="list-style-type: none"> • Fast evacuation and high suction flow <p>⑧ Silencer (type FXP)</p> <ul style="list-style-type: none"> • Sound level only 74 dB(A) |
|--|---|--|



Gripping system FMP for layer-wise stacking of construction wood



Gripping system FMP for handling cardboard boxes



Area Gripping Systems FMHD

Robust and easy to maintain for powerful handling



Suitability for Industry Specific Applications

Applications

- Robust gripping system with connection for external vacuum generator for the efficient handling of sawn timber, planed and glued products, plate products, construction timber, pallets and box elements
- Handling of naturally grown material with knotholes, cracks and heavily twisted, rough surfaces
- Ideal for the rough application conditions in sawmills or in woodworking and furniture construction
- Can be used for layer-wise unstacking and relocation of workpieces



Area gripping systems FMHD



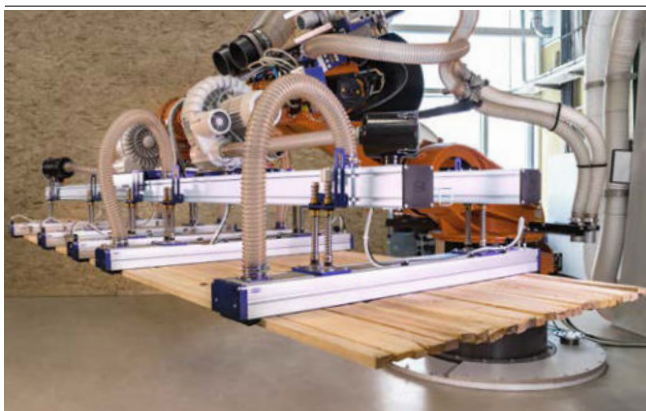
Design area gripping systems FMHD

Design

- Aluminum basic profile (1) with integrated vacuum storage for high rigidity with low dead weight
- Hose connection and separating cylinder (2) for connecting the external vacuum generator
- End cover (3) with control valves for separating cylinder and blow-off function
- Valve profile (4) with integrated missile valves
- Quick change profile with sealing foam and quick-change adhesive film (5); easy to maintain

Product Highlights

- Ideal for highly porous and twisted workpieces
- Handling of workpieces from 35 mm width, regardless of geometry, surface and position
- Maximum process acceleration and reduced system costs through the use of smaller robots
- Up to 70 % reduction in maintenance due to three-part profile design
- Sustainable reduction in operating costs through flow optimization



Gripping system FMHD handling rough sawn wooden boards

Area Gripping Systems FXP-60 / FMP-60

Slim gripping system for handling in confined work areas



Suitability for Industry Specific Applications

Applications

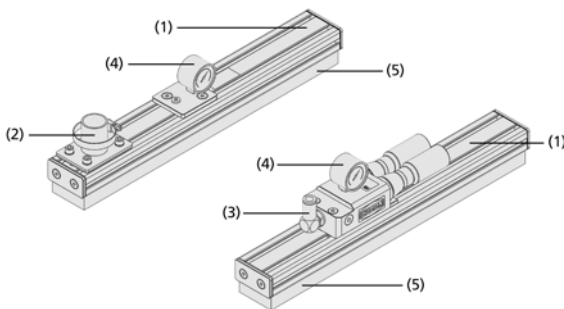
- Universal gripper for handling workpieces of different sizes, geometries, materials and surfaces
- Handling of the workpieces from different pickup positions
- Handling of porous workpieces and workpieces with cutouts
- Suitable for fully automated applications



Area Gripping Systems FXP-60 / FMP-60

Design

- Aluminum base section (1) with lateral T-slots for sensors; different gripper lengths possible
- Connection pipe (2) for external vacuum generation or compressed air connection (3) for included multi-stage ejector
- Gauge (4)
- Sealing plate (5)



Design Area Gripping Systems FXP-60 / FMP-60

Product Highlights

- Slim area gripping system with 60 mm width enables use in confined work areas
- High effective lift capacity due to modular lightweight design
- Low operating costs with high operational reliability due to particularly energy-efficient vacuum generation (installed in FXP-60)
- High-performance sealing foam with excellent sealing and long service life
- Sealing foam with quick-change adhesive film for effortless replacement without time-consuming cleaning



Area gripper FXP-60 when handling furniture panels



Area Gripping Systems FXCB / FMCB

The smart assistant for collaborative work



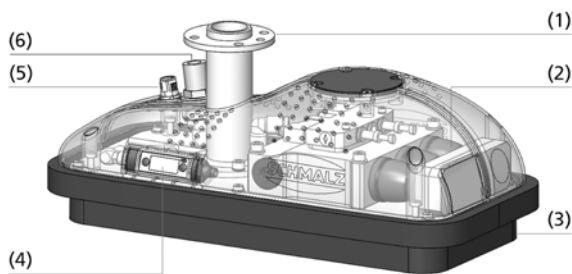
Suitability for Industry Specific Applications



Area gripping systems FXCB / FMCB

Applications

- Gripping system with low weight and integrated pneumatic vacuum generation (type FXCB) for collaborative robot applications
- Handling workpieces in the area of intra-logistics
- Perfect for stationary handling tasks with collaborative robots
- Palletizing and depalletizing cardboard boxes
- Type FMCB for operation with external vacuum generator



Design

- Modular gripper with 3D-printed housing
- Flange connection (1) suitable for common collaborative robots
- Integrated vacuum generation (2) through energysaving ejector modules SEP (type FXCB) or alternatively with connection for external vacuum generation (type FMCB)
- Quick-change sealing elements (3): sealing foam with adhesive film for intrinsically stable workpieces or plug-in suction cups for flexible cardboard boxes, bags, etc.
- Vacuum switch VSi (4) for system monitoring
- Compressed air connection (6) and electrical connection M12-8 (5)
- Suction area 300 x 130 mm

Design area gripping systems FXCB



Gripping system FXCB with sealing foam for handling cardboard boxes

Product Highlights

- Area gripper suitable for HRC operation, as it meets the requirements of ISO TS 15066
- Direct, easy access to the device data via NFC interface using a smartphone
- High effective payload despite light, dynamic geometry thanks to additive manufacturing (3D printing)
- Innovative communication technology enables easy integration of the gripper in Industry 4.0 environment

Area Gripping Systems FQE

Compact, lightweight and HRC-capable



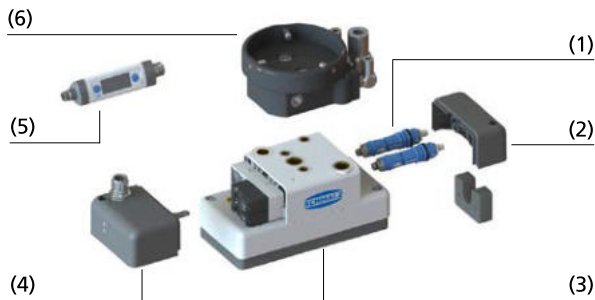
Area Gripping Systems FQE

Suitability for Industry Specific Applications

Applications

- Flexible area gripper for handling products regardless of size and geometry
- Allows handling of products from different picking positions
- Ideal for stationary handling tasks with collaborative robots
- Suitable for fully automated applications
- Typically used for pick-and-place applications or end-of-line packaging in intralogistics
- For the handling of products in the automotive, glass or electronics sector

Design



- FQE-X with integrated, pneumatic vacuum generator (ejector modules SEP) (1) or FQE-M for operation with external vacuum generator
- Silencer for minimum noise emission (2)
- Exchangeable suction plate with foam (3) or suction cups
- Integrated control valves for suction and blow-off function (4)
- Optional vacuum switch VSi (5)
- Robot flange (6)

Design Area Gripping Systems FQE

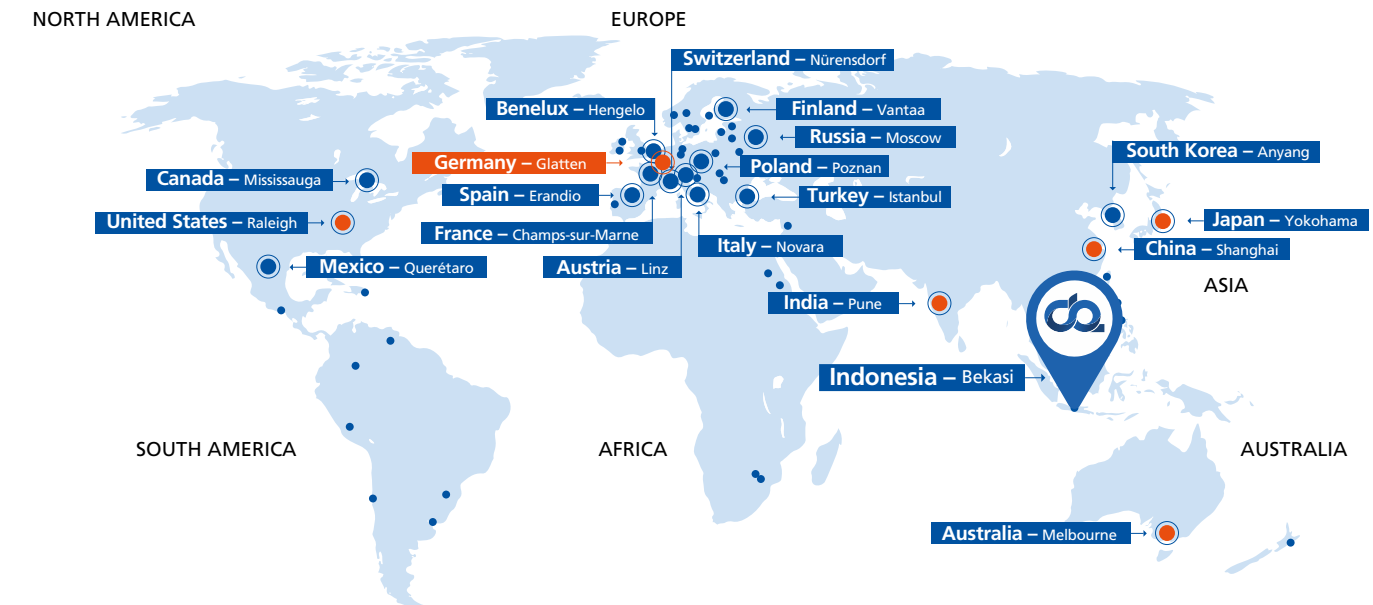


Area gripping system FQE with suction cups for handling workpieces with partial occupancy

Product Highlights

- Innovative product design according to ISO TS 15066 enables MRK operation
- Modular lightweight construction for a low weight and thus a higher effective lift capacity
- Energy efficient, integrated vacuum generation for low operating costs
- Integrated control valves for minimum cycle times and interference contours
- Flexible gripper design enables a wide range of applications

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