Inkjet Components and Print Engines
Performance can be bought

Standard components and the individual mprint developments are straight-forward, increase reliability, and decrease costs. Combining proven components with innovative solutions results in printing machines reaching new levels of performance for all sorts of applications.

mware component overview

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mprint Components – experience means peace of mind

Quality made in Germany’s Black Forest

Precision and reliability are at the core of mprint’s quality philosophy. All OEM components are developed, designed, and manufactured by mprint. Purchased parts are exclusively sourced from well-known, high-quality manufacturers.

mprint uniquely combines digital printing competency with refined mechanical engineering know-how in a single company! Most of our mechanical components are produced by our partner company, Morlock Präzisionstechnik, owned and operated by Rudi Morlock, one of Europe’s leading experts for printer components.

Individual component design

Our customer specific designs are an important addition to the standard components. This ranges from mprint’s mechatronics capabilities to the development and adaptation of software modules.

Based on our process related experience from various printing applications, mprint develops solutions that allow their customers to continue and build on their success in the market.
Control and ink supply in one unit

Developed by mprint for integration into existing production lines: the mblade print engine. This sleek unit can be employed as a single component for one-color printing (e.g. barcode imprint, serialization) or combined with several units into a multi-color print engine (CMYK or six-color system).

The mblade system is based on KYOCERA’s state-of-the-art print heads. This allows solutions for applications involving stationary print heads as well as for applications where the print heads move. Both can be used for single-pass or multi-pass printing.

The mblade comes as a true plug-and-play system including PC, touch screen, and software.

Advantages and facts

• Possibility to integrate compact UV LED pinning units or hot air nozzles (for water-based inks)
• Large ink tank with manual refill option (e.g. for one color imprinting) or with automatic refilling from bulk containers
• Mechanical micro-adjustment to align the print heads
• Expansion modules such as automated print head cleaning and maintenance station
• mprint’s own print head electronics and software allow easy adjustments to individual customer requirements
• mblade module is also available with an external ink supply unit
• Mechanical interfaces per customer requirements

Technical data

• Space saving: only 78 mm wide
• Print width in 108 mm increments: 108, 216, 324, 432, 540 mm, etc.
• Resolution: 600 x 600 dpi, 1200 x 600 dpi (at reduced printing speed)
• Print speed with UV inks: max. 50 m/min
• Print speed with water-based inks: max. 72 m/min
Ink supply units – a colorful variety

Proven with various ink systems
The mprint ink supply units for digital printing systems are perfectly suited for the use with various inks. Pumps and valve assemblies are produced by well-known manufacturers and can be used without restriction with UV inks. This is also true for mprint’s own line of plastic and stainless steel tanks.

Customized solutions, for example with an integrated stirring device, can be delivered inexpensively, because a majority of the components are already part of mprint’s component design kit.

The ink supply units offer a variety of electronic control options: via a PLC, with the mprint USB I/O board (page 9), or by integration into an existing control.

Measuring ink usage
Systems to measure ink usage provide information about the exact ink usage rates during the automatic cleaning and the overall consumption during printing and cleaning. Based on the image and drop sizes, a software calculates the ink usage during the printing process.

Advantages and facts
- OEMs can choose between base components or customer-specific systems
- Flexible feature options according to customer requirements
- Systems for UV inks and water-based inks
Electronic control for KYOCERA inkjet print heads

The high-performance control of mprint – for top printing speed with variable data. The board with a USB 2.0 interface was specifically designed by mprint for the KYOCERA print heads KJ4A and KJ4B. This control, currently in its second generation, is used in large volume in various print applications.

Each print head requires one control board. The board handles the serial communication with the print head, temperature control, and acts as the encoder interface. It also provides additional I/Os, e.g. for external start signals, etc.

Upon request, we can also adapt the controls to print heads of other manufacturers.

Advantages and facts

- For KYOCERA print heads KJ4A and KJ4B
- Up to 20 print heads per PC (unlimited number of print heads when using slave PCs)
- Supports the top printing speed of the print head
- Drivers for Windows, Linux, or other operating systems available upon request
- Complete application software optional
- Development kit with sample programs

Technical data

- Print start based on electronic start signal or incremental encoder position.
- One supply voltage of 26 VDC
- Temperature control of the print head
- DIP switch, e.g. for print head assignment
- Automatic generation of fire 6 signals
- USB 2.0 interface to PC
- Dimensions: 160 x 100 x 29 mm (L x W x H)

USB I/O Board – the PC as control center

For controlling printing machines with a PC

mprint’s I/O board offers an abundance of standard inputs and outputs for the direct control of machine components such as valves, pumps, sensors, etc.

The I/O board is connected to the PC with a USB 2.0 connection and is freely programmable on the PC. It can be used strictly as I/O board or be programmed in C with its own intelligence. This permits the user to utilize watchdogs, temperature control, PWMs, and other functions.

Advantages and facts

- USB 2.0 interface with drivers for Windows and Linux
- NTC input for temperature measurements
- 7-signal relay switch, e.g. for encoder signals
- Optical display of inputs/outputs
- Plug-in connector terminals

Performance data

- 12 relay outputs, 3 A / 24 V
- 9 digital inputs, 2 of these are optoelectronic couplers
- 10 digital outputs, 2 of these are optoelectronic couplers
- Dimensions: 180 x 150 x 45 mm (L x W x H)
Software for single-pass and multi-pass applications

Software modules and individual programs

mprint offers software modules for programming and controlling print applications with stationary print heads as well as applications with moving print heads (scanning). Both can be used either in the single-pass or multi-pass process.

The software developed by mprint allows, for example, the logical connection of the converter unit and the print engine in a label printing machine.

Advantages and facts

• Software solutions for continuous operation (e.g. for label printing machine) and also for cycled printing of three-dimensional parts
• Re-register function (printing and die-cutting)
• Connects to a variety of different database systems
• PLC interface

Other software solutions

• Module for camera supported position correction of the print image
• Real-time adjustment of print image content based on current camera measurements
• Interface to ColorGate’s professional color management software

ColorGATE Production Server-technology for the perfect industrial print

• Profiler modul PFM: generating professional ICC profiles comfortably and assistant supported
• Proofgate modul PGM: provides legally binding digital proofing
• Device Link modul DLPFM: the iterative optimization of the color transformation from a source profile to the target profile
• Ink Saver: the exclusive ColorGate innovation of the output management offers ink cost savings of up to 30%.

Development from concept to implementation

Close cooperation from the conceptual ideas to the completed components – this is how mprint designs customized components! In close collaboration our team develops tailor-made hardware and software solutions for industrial inkjet applications, even innovative components, which go far beyond the limits of a single technology! mprint’s extensive experience in thermal printing and pad printing makes almost anything possible.

Components in all variations

• Mechanical and mechatronics components
• Electronic controls
• Hardware and software
• Integration-ready plug-and-play components
• Individual customized components

Your contact for all questions

Besides printing components and print engines, mprint also designs complex printing systems, including material handling.

We are also the right contact for companies, who are looking for a service provider to help them develop and design after their own ideas. For example applications in the field of parts or material handling.

Get in touch with us and let us develop your solution!