notion.ABC

HMI and automation systems

www.trsystems.eu

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TR – innovative and successful

Our customers' constantly new requirements and challenges have shaped TRsystems over 25 years.
We complete a large number of production steps ourselves in our flexible production facilities, we develop the electronics ourselves and the housings and mounts are designed by our own design engineering department.

TRsystems Trossingen & Pforzheim
TRsystems combines a variety of business activities relating to industrial automation.

TRsystems Components and Systems develops and manufactures industrial control and communication systems. In addition to the standard product range comprising industrial PCs, industrial controllers and I/O systems, customer-specific industrial and electronic products are a focus of production for TRsystems.

OEM developments are a further focus of the TRsystems development department. Projects that have already been executed by TRS provide smart metering solutions for efficient energy usage and fair charging, enable remote monitoring for water supply networks or ensure comfort through intelligent heating automation.
As a service provider, **TRsystems Automation** optimizes press lines for new levels of performance.

TRsystems Pforzheim, with the brand name **UNIDOR**, stands for special know-how in pressing and punching processes and for many years has been an established name for die safety and increased efficiency for punching manufacturers and users.

We provide: Measurement and control systems for automation technology

When industrial processes need to run smoothly and reliably, measurement and control solutions from TR play their part. When a theater curtain goes up, for example, TR systems monitor the complex stage technology. People and machines work safely together and the audience enjoys a perfect production. Wind energy plants generate energy with maximum efficiency thanks to optimally aligned rotor blades - controlled by TR solutions.

In press lines for the automotive industry TR sensors guarantee safe forming of the body components. In logistics TR measuring systems enable smooth transport of goods, e.g. in conveying systems and high racks. TR control and measuring modules control and monitor pumps for drinking water supply, regulate correct feeding of pellets in wood-fueled installations or help to detect faults in a punching machine at an early stage.

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Series overview

notion.A / A2
HMI system for arm-mounted installation

notion.B
Automation system for cabinet installation

notion.C
HMI system for cabinet/console mounting

notion.ABC

With notion.ABC from TRsystems, machine modules as well as entire plants are ready for industry 4.0. Thanks to Multitouch, innovative control panel technology combines with TR's many years of experience in creating robust control systems for particularly demanding environments - from tough everyday production to hygiene-sensitive food and medical technology.

notion.E
Exclusive customer systems

notion.D
HMI system for dynamic mounting

notion.F
HMI system for
flexible applications.

notion.H
HMI system for hygienic
applications

notion.A

notion.A – HMI system and arm mounting

The **notion.A** device model was developed for the operation of machines and systems, where the machine operator or line supervisor requires a direct view of the workpiece or medium. Thanks to the close proximity of the device they can observe processes via the user interface of the application software and directly intervene in the production process. Typically, the device is fixed to a supporting arm with a VESA-75/100 mount.

The electrical connection technology varies from conventional connectors through to sturdy M12 plug connectors. The environmental requirements are usually very high in the installation area of the device. Often the atmosphere contains lubricants or cleaning agents which require a device protection class of IP65 or higher. Measures have also been put in place that enable **notion.A** to withstand exceptional mechanical stresses of vibration and shock.

The fanless and easy-to-clean **notion.A** comes with display sizes from 256.5 mm (10.1") to 546.1 mm (21.5") and a touch system that supports multi-finger operation. The housing can be equipped with 22.5 mm control elements such as emergency stop buttons or signal and indicating lamps.

notion.A2

notion.A2 – HMI system and support arm assembly

The **notion.A2** continues the successful series of the A-series consistently further developed.A passive and fully integrated cooling system in the backside and one of the newest Intel® Core™-i processor generations characterizes the new **notion.A2**. A system that pleases.

notion.B

notion.B200

notion.B300

notion.B310

notion.B – Automation system for cabinet / console mounting

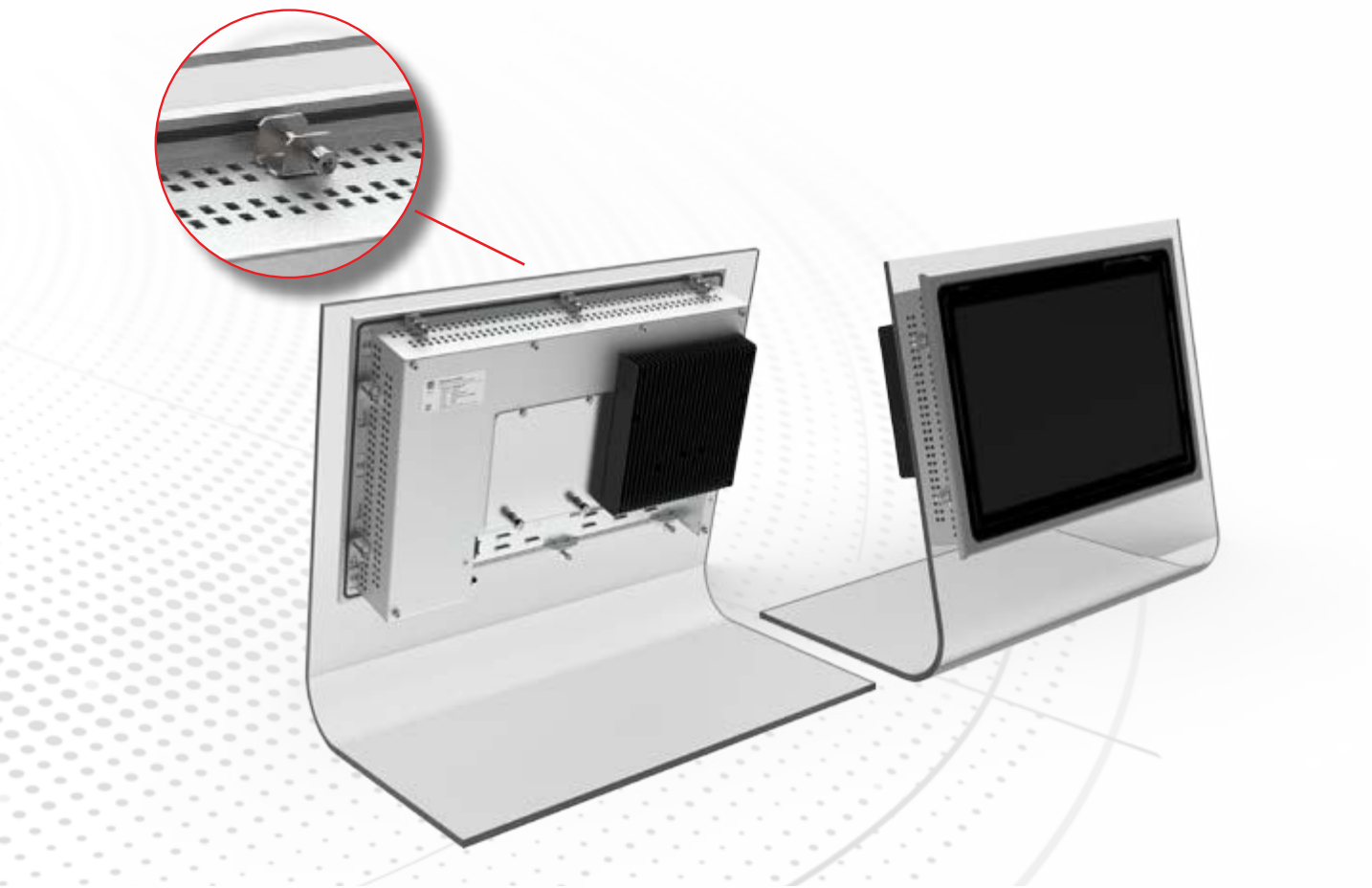
notion.B200 is ideal for power-hungry and computation-intensive automation tasks. Control functions of PLCs with field bus extension as well as image processing can be successfully implemented in industrial environments with constant vibration and shock load conditions.

With **notion.B300** you can also create simple remote maintenance and IT access via the system operator's infrastructure.

notion.B310 provides a control in accordance with IEC 61131-3 with integrated field buses such as CANOpen and EtherCAT.
Selectable storage media such as uSD, SSD or HDD enable complex data acquisition within the PLC even without a network connection.

The fanless and displayless **notion.B** has all interfacing capabilities necessary to connect to the usual industrial infrastructure with operating and automation systems from all manufacturers.

notion.C



notion.C – HMI system for cabinet / console mounting

The **notion.C** device model is particularly suitable for installation in control panels and cabinets. This device model is known on the market as a "panel PC".

The device is installed in a cabinet cutout or console housing (19" installation frame) provided for this purpose and clamped at the back with mounting elements.
The impervious IP65 front unit provides the necessary protection. Lubricants and cleaning agents have no impact on the system's long service life.
The fanless **notion.C** is available with display sizes from 256.5 mm (10.1") to 546.1 mm (21.5") and a touch system that supports multi-finger operation.

notion.D

notion.D – HMI system for dynamic mounting

With the **notion.D** device model you can keep all your options open: Enclosed on all sides with the specified protection class and VESA 75/100-compliant rear mount, **notion.D** can be mounted directly on the machine like a **notion.A.**

The same device can also be directly mounted in a console, front panel or device support like a **notion.C**.
The fanless and easy-to-clean **notion.D** has a display size of 546.1 mm (21.5"), a touch system that supports multi-finger operation and a protection class up to IP54.

notion.E

notion.E – Exclusive customer systems

With the **notion.A**, **notion.B**, **notion.C**, **notion.D** or **notion.H** device platforms we can fulfill many requirements from our modular system. You haven't found the right version?

Then we can certainly provide a solution tailored exclusively for you from existing and specially developed technology modules.
That's why we have called this series **notion.E** – developed exclusively for you.

From slim to heavy-duty, from modest to eye-catching – we can develop the control, operating or visualization solution for your latest series of machines or systems. **notion.E** offers exclusive and innovative ideas, extensions and additions.

Replacement devices/retrofits can also be provided with **notion.E**. Most of our technologies have a long-term availability of more than 10 years.

Let's talk about it!

notion.F

notion.F – Flexible system for many requirements

The extremely robust and maintenance-free entry-level class device. With IP65 protection and metal M12 connectors, the **notion.F** performs reliably even in harsh environments. Thanks to an extremely bright display and consistent weight optimization, the notion.F is a flexible solution for many requirements.

notion.H

notion.H – HMI system for hygienic applications

The **notion.H** device model is ideal for hygienic applications. Typical applications are food processing, beverage filling as well as pharmaceutical and cosmetic production systems.

The aluminium housing can withstand even harsh environmental conditions. It is water-tight (IP65) and is mounted on a supporting arm with a VESA-75 mount or directly on the machine. Sturdy M12 connectors ensure that the high tightness requirements are also fulfilled during device cleaning.

The fanless **notion.H** has a display size of 256.5 mm (10.1") and a touch system that supports multi-finger operation. This touch operation works even in wet and dirty environments.

The performance levels / functionalities of notion.ABC

notion.computer

notion.computer devices reflect the full capability of industrial PC systems with their x86 core. They offer all conceivable operating systems and application possibilities. Power-hungry applications in particular are no problem for **notion.computer**. Even existing control applications can usually be ported to this platform with minimum effort.

notion.tablet

notion.tablet stands for slim, efficient control and operation on the basis of ARM processors. Modern, controller-based control systems work perfectly on this contemporary platform. Adapted operating systems get the most out of optimized hardware. Quick start-up makes its use attractive for small machines with a high switching on and off frequency. Optional static mass storage devices without moving components facilitate use under the most demanding conditions. The lower power consumption in comparison to **notion.computer** enables flatter, smaller devices.

notion.terminal

notion.terminal is **notion** without the computing power. With the same design and resistance against environmental influences, the **notion.terminal-DVI / VGA** brings the look and feel of **notion** in cases where a PC-based hardware is already introduced, for example, and there are currently no plans to switch to a 100 % solution with **notion**. Do you wish to secure your control technology in the control cabinet? Then **notion.terminal-DVI / VGA** can also be perfectly adapted to **notion.B** control modules. **notion.terminal-DVI / VGA** and the PC core connect via DVI, VGA, USB or **notion.terminal-KVM** stream (LAN or USB). And because both are from a single source, you always benefit from the most up-to-date transmission technologies and highest reliability even in large systems.

motion.terminal connection overview	DVI	VGA	USB	LAN
notion.terminal-DVI / VGA	+	+	+	
notion.terminal-KVM			+	+

notion#client

notion#client

The **notion#client** functionality provides a versatile and efficient remote control for common remote client connections. Visualization and touch operation for automation systems and IT systems from all manufacturers is possible.

Paired with the operating systems in the series **notion.A, notion.C, notion.D** or **notion.H**, you can display, switch and operate any number of configurations on the operating system under the most difficult industrial conditions via **WEB** (http:// or https://), **RDP** (Remote Desktop Protocol) or **VNC** (Virtual Network Computing).

The original display screen is automatically scaled on **notion#client**. Older screen formats (e.g. 4:3) or different screen resolutions can be used immediately either in the same format or full screen mode, without any software changes.

The integrated softkey board supports simple data input for your applications. The automatic connection monitoring indicates a possible interruption in the connection to the server system at any time. Interrupted connections are automatically restored as soon as the server system is available again. The set connections are also re-established during start-up or after restarting – the system can be operated immediately.
This is made possible by the combination of industry-compliant hardware and a specially tailored operating system – assembled for you under the name **notion#client**.

notion#app

new: notion#app visualization

notion#app – Our fastest and easiest visualization design system

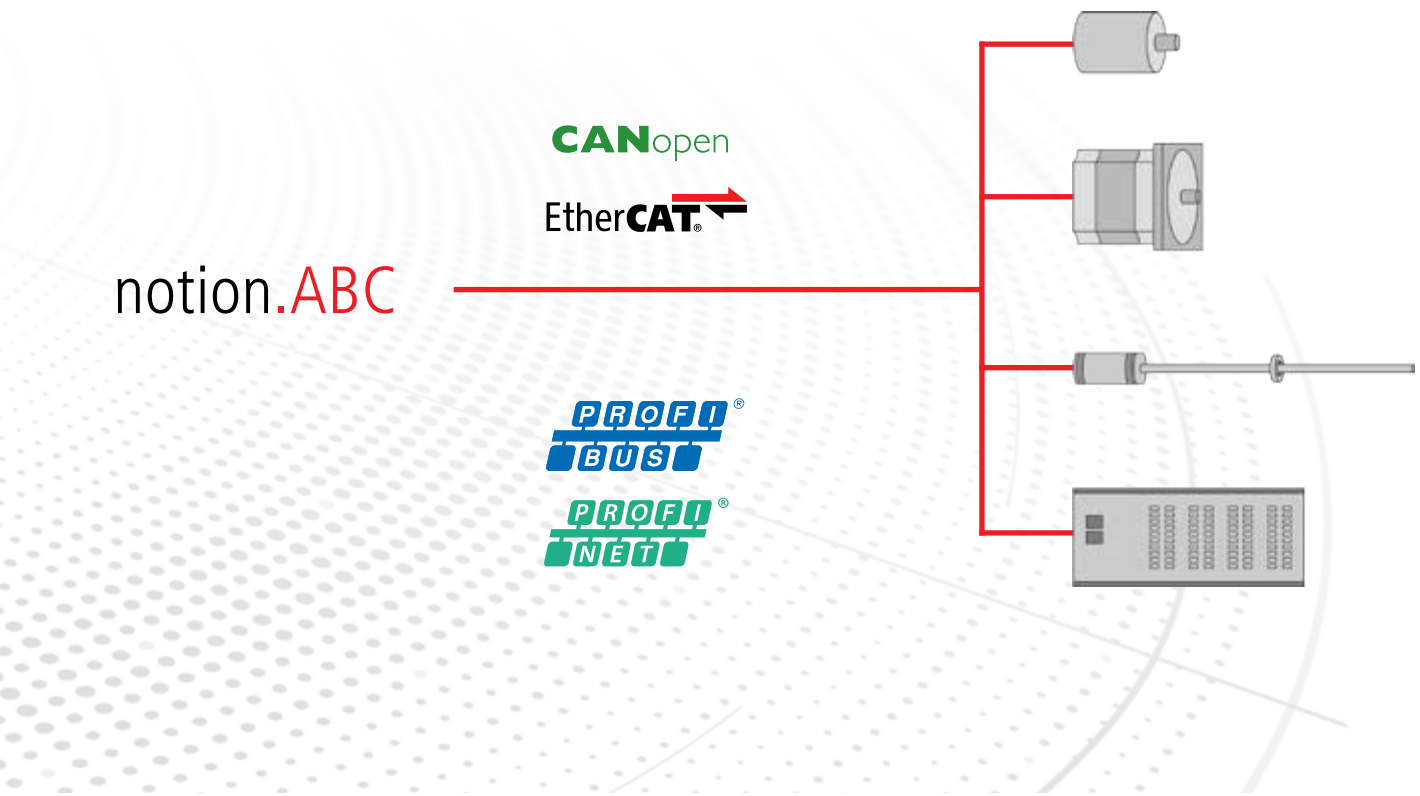
Dedicated visualization systems, which are only suitable for one controller family, are a thing of the past.

notion#app is the barrier-free way to implement slim and ergonomic operating and visualization interfaces for almost any modern controller platform. For this we rely on Android Studio, well known in the software world, which you can use free of charge.

We have already adapted the necessary libraries to our **notion** world. We will gladly support you in the initial stages with examples or even a workshop, whether at our premises or yours – this can also be geared very specifically to your desired automation application.

The prerequisite is our modern controller platform, which will make your process image or variables accessible for reading and writing using current IT standards – so basically all in compliance with Industry 4.0.

notion#plc



notion#plc-CODESYS[1]

The high-performance control **notion#plc-CODESYS[1]** with integrated visualization is one of the most cutting-edge controls according to IEC 61131-3 for your machine or system.

The capability of **notion#plc-CODESYS[1]** is scalable and can be adapted to different performance requirements.

With multi-core support and Industry 4.0 communication, even power-hungry automation tasks can be implemented cost-effectively with smart device technology.

The special Industry 4.0 features enable very simple and efficient networking with IT and APP technologies. Common smartphone apps can represent and further process the automation data in cutting-edge form.

notion#plc-CODESYS[1] can be configured on **notion** systems which are designed for the applications **notion.computer** and **notion.tablet**.

Different form factors such as cabinet installation or a highly integrated control panel combination directly on the machine are possible.

Field bus connection
_ EtherCAT
_ CANopen

Scalability
_ Single Core
_ Multi Core

[1]CODESYS is a registered trademark of 3S-Smart Software Solutions GmbH, Kempten

notion#plc-S5-945[2]

The **notion#plc-S5-945** functionality emulates a hardware PLC with real-time behavior.

The PLC program runs on a **notion.computer**.
As **notion#plc-S5-945** behaves like an original **SIMATIC[2]** PLC, in addition to the S5 programming software for Windows the original **STEP5[2]** programming tool can also be used.

Are you still running applications on **SIMATIC-S5[2]** and are you looking for the right hardware to continue operating your system sustainably? With **notion#plc-S5-945** you can transfer the existing program to a contemporary platform.

Online connections can be serial, via Ethernet or directly on the Windows operating system of **notion.computer**.

notion#plc-S5-945 can be configured on **notion** systems which are designed for **notion.computer** applications. Cabinet installation can be used as a traditional retrofit solution, or alternatively a highly integrated controller-operating panel combination is possible directly on the machine.

Field bus connection
_PROFIBUS

notion#plc-S7-416[2]

The **notion#plc-S7-416** functionality emulates a hardware PLC with real-time behavior.

The PLC program runs on a **notion.computer**.
notion#plc-S7-416 behaves like an original **SIMATIC[2]** PLC. In addition to the S7 programming software for Windows®, the original **STEP7[2]** programming tool or **TIA Portal[2]** can also be used. Online connections can be serial, via Ethernet, via PROFIBUS, via PROFINET or directly on the Windows operating system of **notion.computer**.

Configuration and diagnosis of PROFIBUS or PROFINET are also possible with the original **STEP7[2]** tool or **TIA Portal[2]**. The program of an S7 hardware PLC or a Siemens **WinAC SoftSPS[2]** including **PROFIBUS[2]** or **PROFINET** configuration can be transferred to **notion#plc-S7-416**.

Data exchange occurs via S7 for Windows, the **SIMATIC[2]** Manager or via **TIA Portal[2]** from Siemens.

notion#plc-S7-416 can be configured on **notion** systems which are designed for **notion.computer** applications.

Field bus connection
_PROFIBUS
_PROFINET

[2]registered trademarks of Siemens AG Munich and Berlin

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