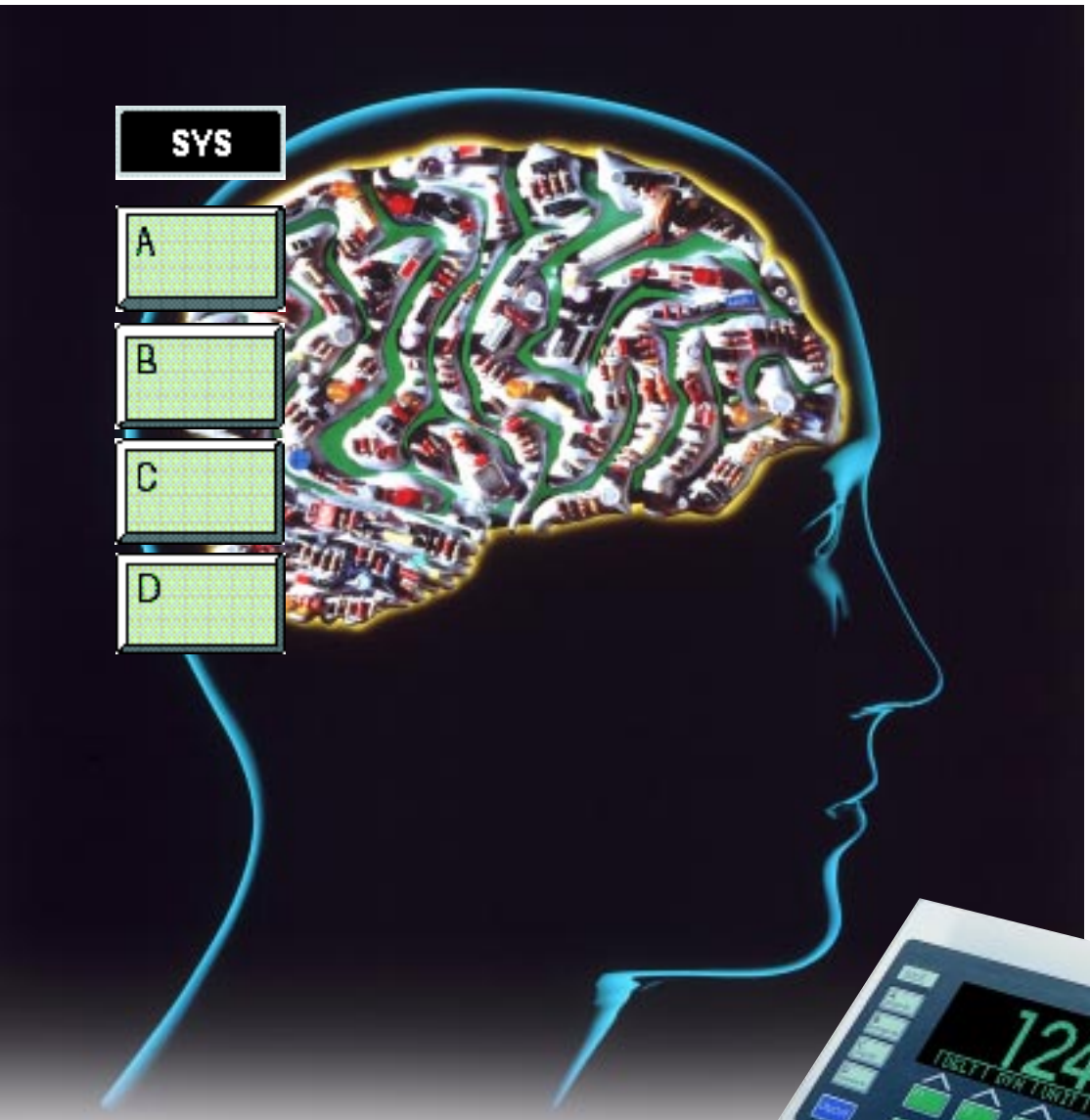
Custom-tailored solutions are suddenly so easy…



Your automation solution is unique, and as such requires tailor-made control. You have a specific idea of what you expect from your weighing application. A standard solution would perhaps meet your requirements, but not your wishes.

However, the perfect tool is now available to meet all of these conditions: Using ID7-Sys, we will create a solution that is tailor-made, precise, and very flexible.

METTLER TOLEDO

Relax in the knowledge that you're working with ID7-Sys…

The combination of perfected hardware with flexible software ensures ideal results.

- ☐ Rugged, sealed housing with IP68 protection
- ☐ **BIG WEIGHT®** display, easy to read even from a distance
- ☐ 3 different types of scales can be connected, offering optimal flexibility
- ☐ Keys A…D and softkeys F1…F6 provide ergonomic operation
- ☐ Versatile interfaces are available for the connection of external systems
- ☐ Version available for use in hazardous areas of zones 2 and 22. Available with separate keypad terminal for zone 1

Simply tell us what you want, and we'll provide it!

■ Freely programmable

We will work together with you to develop a solution that is tailor-made for your requirements:

- Keypad inputs and screen displays on the ID7
- Simple and more complex (label) printing
- Recording, checking and evaluating your bar codes
- Flexible data exchange with your computer system

ID7-Sys can provide you with exactly the solution you need.

■ Tailor-made solution

Unnecessary program parts are not implemented or – if required internally – operate in the background, invisible to the user. Installation effort is reduced considerably through the use of preconfigured interface parameters, printing formats, etc.,
and is restricted to site-specific adaptations such as the specification of network/bus node addresses or the setting of date/time.

■ Standardized hardware

The ID7 or ID7xx hardware platform used here is already in use in thousands of standard customer applications. It offers the highest possible level of functionality, rugged design and reliable quality. There will be no "surprises".

■ Reliable operation

The ID7 is the ideal reliable, user-friendly and ergonomic front-end. The easy-to-use keypad and large, 5-line display optimize operation and inputs.

■ Can also be used in hazardous zone 1

With the special hazardous area keypad terminal, your ID7-Sys application can be used completely and without restriction even in hazardous zone 1.

■ Communication is the key

The ID7 already offers a unique selection of digital and serial interfaces. Standards such as

- Ethernet (with TCP/IP and FTP protocol)
- Profibus-DP

are supported, as are various bar code scanners, printers and remote displays. Using the integrated WEB server, you can also display and operate your ID7-Sys from the management office, the control room or even over the Internet. This opens up great new opportunities for servicing.

■ Customer-specific solutions are expensive...

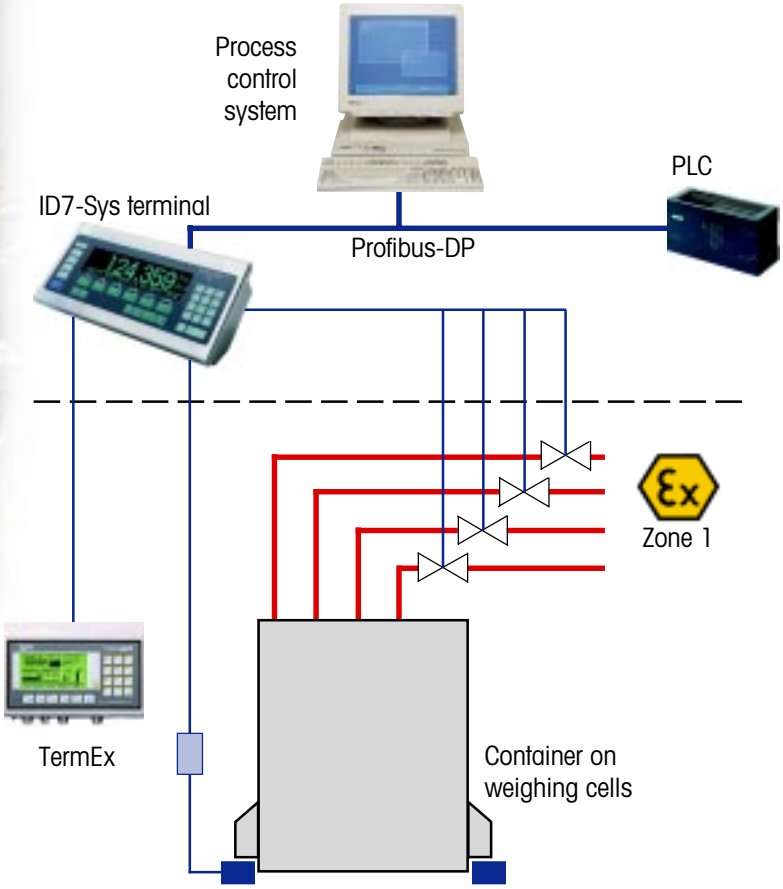
… at least that's what you've always thought. ID7-Sys will soon prove you wrong. Our application programmers work with high-level language C and are supported by a professional PC development tool. The ID7-Sys function library provides powerful, perfected and thoroughly tested function blocks. This ensures that your software is created to the highest possible standards of quality: perfectly designed, ready on time, and cheaper than you think…

■ New technologies

The world of communication technology is constantly changing. Today we can barely imagine what technology will be in use in a few years' time. However, the ID7 is prepared for the future due to its modular structure, which enables the quick integration of new technologies, so you can be sure you'll always be up-to-date.

BigWeight® is a registered trademark of Mettler-Toledo (Albstadt) GmbH

■ Application example 1: Multicomponent dispensing control with Profibus-DP connection to PLC and process control system

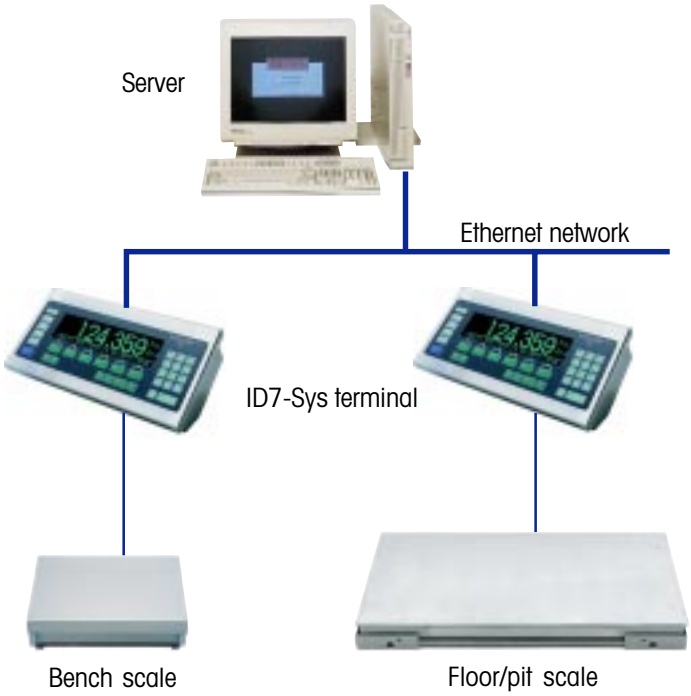


The diagram opposite illustrates the structure of a multicomponent dispensing system in hazard zone 1. The hazardous area keypad/display terminal is connected to the ID7-Sys terminal in the hazard-free zone. The ID7 terminal is networked with a standard PLC via Profibus-DP.

The formulations generated by the process control system are prepared by the PLC either completely or by component, and are transferred to the ID7. The ID7 application program then completely executes the dispensing jobs and reports the results to the PLC. The dispensing valves are directly controlled by relay boxes 8 connected to the ID7, which ensures excellent fail-safe behavior, reduces the load on the bus and above all, considerably reduces development and installation costs.

Alternatively, this application can use an Ethernet network with TCP/IP protocol for data transport instead of Profibus-DP. In this case, the amount of data to be transmitted is usually high, but the transmission speed is lower than for Profibus.
Complete job databases can be transmitted from the process control system to the ID7 as ASCII files.

■ Application example 2: PC-controlled formulation system with Ethernet connection



The diagram opposite illustrates the use of ID7-Sys terminals as formulation systems. In this case, the focus is on data processing: data is entered, detected and stored using the ID7 terminals.

Data is transferred to a higher-level computer either immediately (in real time) or after a delay. In the first case, individual data items or complete data records are transferred directly to the computer.
In the case of delayed transmission, up to 500 data records can be stored in the ID7 and transferred to the computer on request. This data can be managed on the computer using a program such as ACCESS or EXCEL.

Software aspects

System structure and functionality

High-level language C	The application program is created exclusively in ANSI-C-compatible high-level language.
Multitasking	Up to 4 tasks can be generated with any priority and cycle time.
Database	The flexible database system enables complete adaptation to customer data.
Passwords	ID7-Sys offers up to 9 different password levels, for example for master mode, database, interfaces, etc. 3 password levels are available in the application program itself.
Multilingual	Up to 6 languages are supported directly.
Download	The complete application program can be downloaded to the ID7 via serial interface (RS232) or Ethernet (or via Internet on request).

Device driver

The application programmer can select the required driver from an extensive list of device-specific drivers. The following drivers are currently available:

Com	Simple serial communication
TCP/IP client	Network connection using Ethernet-ID7
FTP client	Network file transfer
WEB server	ID7 operation via a browser
Profibus	Up to 8 data words via Profibus-DP-ID7, 1-word data consistency
SICS	METTLER-TOLEDO SICS protocol
TC and TSC	TOLEDO Continuous and TOLEDO Short Continuous
GA46	Printouts to GA46 printer
FX880	Printouts to Epson FX880 dot matrix printer
BIU	Relay box 8-ID7
IO4	4 I/O-ID7 or relay box 4-ID7
Analog Output	Analog Out ID7
DisplayLocal	ID7 display, including **BigWeight®** and ID7 keypad
Termex200	ExTec hazard zone 1 display, four-line, softkeys
F15	Simple remote display, single-line

Other device drivers are currently being developed.

Error handler

The internal error handler generates automatic outputs to the internal/external display or to a printer. The error messages are divided into 5 priority levels. In addition, 4 different acknowledgment procedures are available (acknowledgment by the user, by the system, after a waiting time, by the application program). Errors with lower priority remain stored until all higher priority error messages have been acknowledged. The application program can control the error messages or generate its own error messages.

External MFII keyboard

The following keyboard layouts are supported: United Kingdom, USA/International, Germany, France, The Netherlands, Italy, Spain, Finland.

Menu system (master mode)

The relevant configuration points appear in master mode, depending on the installed hardware or device driver. They are documented in the manual for the basic instrument and generally correspond to the ID7-2000 standard.
The programmer can also integrate customer-specific configuration points, depending on the application. These points are then documented in the application description.

Notes for the programmer

PC development tool

KEIL µVision2	Integrated development with C251 compiler, A251 assembler, L251 linker and OH251 object hex converter for Win95/98/NT/2000. Includes an integrated debugger for online debugging via RS232 ID7/COM4.

Programming libraries

Programmers Guide	Detailed function library with programming rules and tips.
Application Library	Library with higher-level modules with increased functionality.

Development kits

Debugging kit	Modified ID7 motherboard, memory board and boot EPROM, indispensable for fast program development and online debugging.
Pro kit	Includes all the above components together with a special ID7 demo case, consisting of ID7 with various interfaces, GA46, scale, MFII keyboard, accessories and case.

Training

2/3-day introductory seminar including Pro kit on request.

Supported hardware

ID7-Sys supports ID7 hardware from device number 2288791.

Interfaces

RS232-ID7	Up to 6 on COM1 to COM6
CL20mA-ID7	Up to 5 on COM2 to COM6
Ethernet-ID7	1 on COM2 to COM6
Profibus-DP-ID7	1 on COM2 to COM6
RS485-ID7	Up to 2 on COM5 to COM6, also as RS422
Relay box 8-ID7	Up to 8 via COM6 / RS485-ID7
4 I/O-ID7	Up to 2 on COM5 (I/O 5 to 8) and COM6 (I/O 1 to 4), also with relay box 4-ID7
Analog Out ID7	Up to 2 on COM5 to COM6
Alibi Memory ID7	1 on COM2 to COM6

Scale connections

IDNet scales	Up to 3
Analog scales	Up to 2

Metrological notes

ID7-Sys can be operated on certifiable scales and this is approved by the PTB. Various internal measures prevent the application programmer manipulating the displayed and printed weight values.