

ProfiMessage D

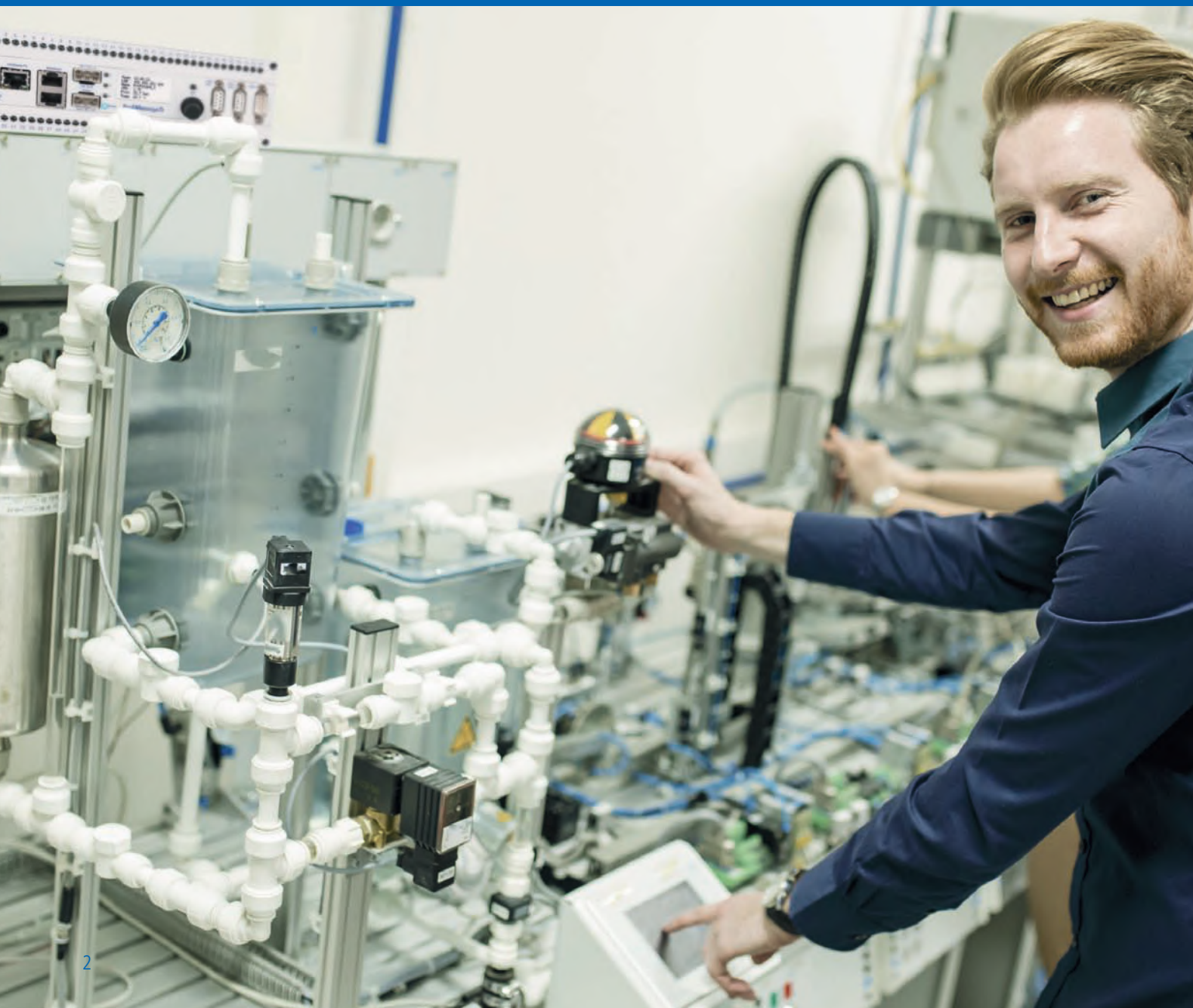


INDUSTRIAL ANALYTICS

Modular measuring. Monitoring. Automating.



FAST. EASY. **SMART.** DATA.



Intelligent **measurement technology** under the influence of Industry 4.0

The dynamics of Big Data are being shaped by Industry 4.0. Industrial measurement technology then functions as an interface: in virtual worlds where production processes are automatically planned and simulated; and in the real world where everything should run according to plan. ProfiMessage D functions as an all-rounder in modular measurement technology. It enables data to be acquired quickly and easily – ideal to begin evaluating and analysing measurement data.

Today's measurement technology forms a bridge between Industry 4.0 and Big Data. In the era of digitised worlds, measurement tasks are multi-layered. Depending on testing methodology, distinctions are made between high-precision measurement technologies in testing, and process-integrated and process-supported technologies in production. ProfiMessage D enables measurement data to be acquired quickly and easily – an ideal basis for intelligently further processing data. Designed as a modular measuring, control and monitoring device, ProfiMessage D possesses the capabilities to function as an IT module in a smart factory. This represents an intelligent and sustainable method to positively influence the quality of production processes.

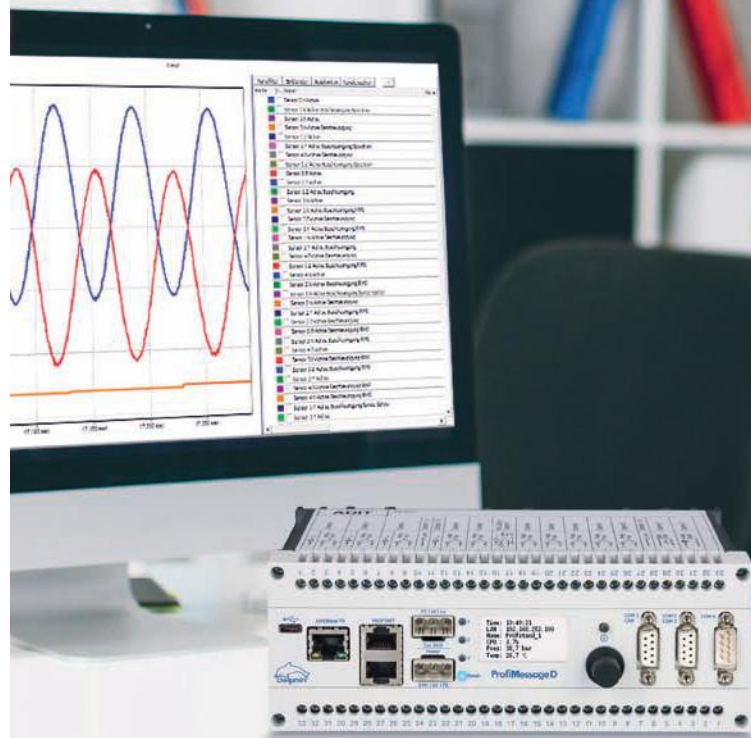
GREATER **BENEFITS**

If you want to make production more efficient, you need to exploit and leverage the wealth of data you have. ProfiMessage D helps you make the move to industrial analytics. The series of devices is designed to monitor processes as well as automate test stands. These devices reveal their effectiveness wherever measured data needs to be acquired quickly, precisely and under galvanic isolation, as well as when intelligent pre-processing and monitoring of data is required.

Whether used in machines, systems or test stands, ProfiMessage D enables applications to be designed in practical, comprehensible and forward-looking ways. An OPC UA software interface makes this possible by enabling open data exchange between all systems within a company – from the executive floor to field-based applications – no matter what operating systems, busses, protocols and drivers are used. Measuring technology from Delphin ensures the harmonisation of even complex communications.

FROM THE DATA WORLD

Big Data and **Industrial Analytics**



ProfiMessage D



Product features

- New: with PROFINET interface (optional)
- New: with display for monitoring and network settings
- Acquisition, signal preprocessing and independent storage of measured data
- Compact and modular design
- Monitoring functions with limit values and alarms
- Universal analog inputs with high measurement precision
- High galvanic isolation between channels
- Simple and intuitive configuration and operation
- Ethernet interface for online operation
- USB interface for data memory read out
- ModBus, CAN Bus and serial interfaces
- Two PROFIBUS interfaces (single or redundant)
- Optional WLAN interface
- OPC UA client/server interface for transferring measured data at field level

ProfiMessageD – THE DIVERSE SYSTEM

Monitoring, analysis,
documentation

Acquiring, preprocessing,
monitoring, storing

Measurement
data generation



Operating at the heart of production

Fully open for system peripherals: ProfiMessage D uses a master/slave concept and has a range of I/O modules to meet the requirements of any system – ideal for multi-channel applications. The device’s inputs and outputs are differentially and galvanically isolated from each other as well as from power supplies.

A unique system architecture prevents ground loop distortions and enables problem-free measurement of non-isolated signals.

ProfiMessage D has a diversity of interfaces to enable simple communication with external systems. This might concern data being exchanged between a PLC, a frequency inverter or an intelligent field device. Setting up the interfaces and data exchange is easy to understand. Integrated display function: A display and jog wheel is used to make vital network settings such as IP address and network mask. Furthermore, pre-defined measured values can be constantly displayed. Depending on the I/O module being used, each input can be individually configured for measuring mV, mA, RTD and thermocouples. Universal use of the inputs for voltage, current or temperature measurements makes the device particularly flexible.

I/O module	Analog inputs	Analog outputs	Frequency, Status inputs	Status inputs	Switch outputs	Sampling rate
ADGT	8 channels, V / mV, 20 mA, Pt100, thermocouple					60 Hz
ADIT	10 channels, V / mV, 20 mA, Pt100, thermocouple	1 channel, 20 mA			1 channel	600 Hz
ADVT	15 channels, V / mV, 20 mA, Pt100, thermocouple					600 Hz
ADFT	8 channels, V / mV, 20 mA	2 channels, 0 .. 10 VDC	2 channels	2 channels	4 channels	8 kHz
AMDT	8 channels, V / mV, 20 mA	2 channels, 0 .. 10 VDC	2 channels	2 channels	4 channels	10 .. 160 kHz
AAST	8 channels, V / mV, 20 mA, Pt100, thermocouple	4 channels, 20 mA		2 channels	2 channels	600 Hz
IOIT				24 channels	1 channel	
OTPT				1 channels	24 channels	
DIOT			11 channels	1 channels	16 channels	

MODULAR. **SCALABLE.** COMMUNICATIVE.

Modular **data acquisition** with software functions

The ProfiMessage D software configuration is fully open. Software channels provide countless function modules, easily created at the click of a mouse. Optionally available is ProfiSignal as extendible universal software that provides measurement-data functions ranging from basic data archiving through to visualisation procedures and fully automated systems with report functions. Function modules are selected as required for data acquisition, test stand automation as well as process data acquisition.

A software configurator included in the delivery is used to set up the ProfiMessage D devices. All channels are clearly portrayed. An intuitive configuration dialog opens in which the required functions can be set. Configuration files are stored in the ProfiMessage D devices in XML format and can also be processed offline using an XML editor. All measured values can be transferred online and stored on a PC or server. Measurement data can be calculated online using calculation channels.

Limit value channels monitor measurement data and activate alarms or send emails in emergency situations. Software channels are basically unlimited in number. All functions are independently processed by a powerful internal processor to ensure fully secure functioning of the device.

ProfiMessage D

Software channel examples

- **Online analysis**

Calculation channel: Any number of channels can be computed together, e.g. temperature differences

Statistics channel: Calculation of moving and triggered statistical values to determine maximum values in a test

- **Monitoring**

Limit values: Limit value violations generate an event, e.g. an alarm when storage temperatures are too high

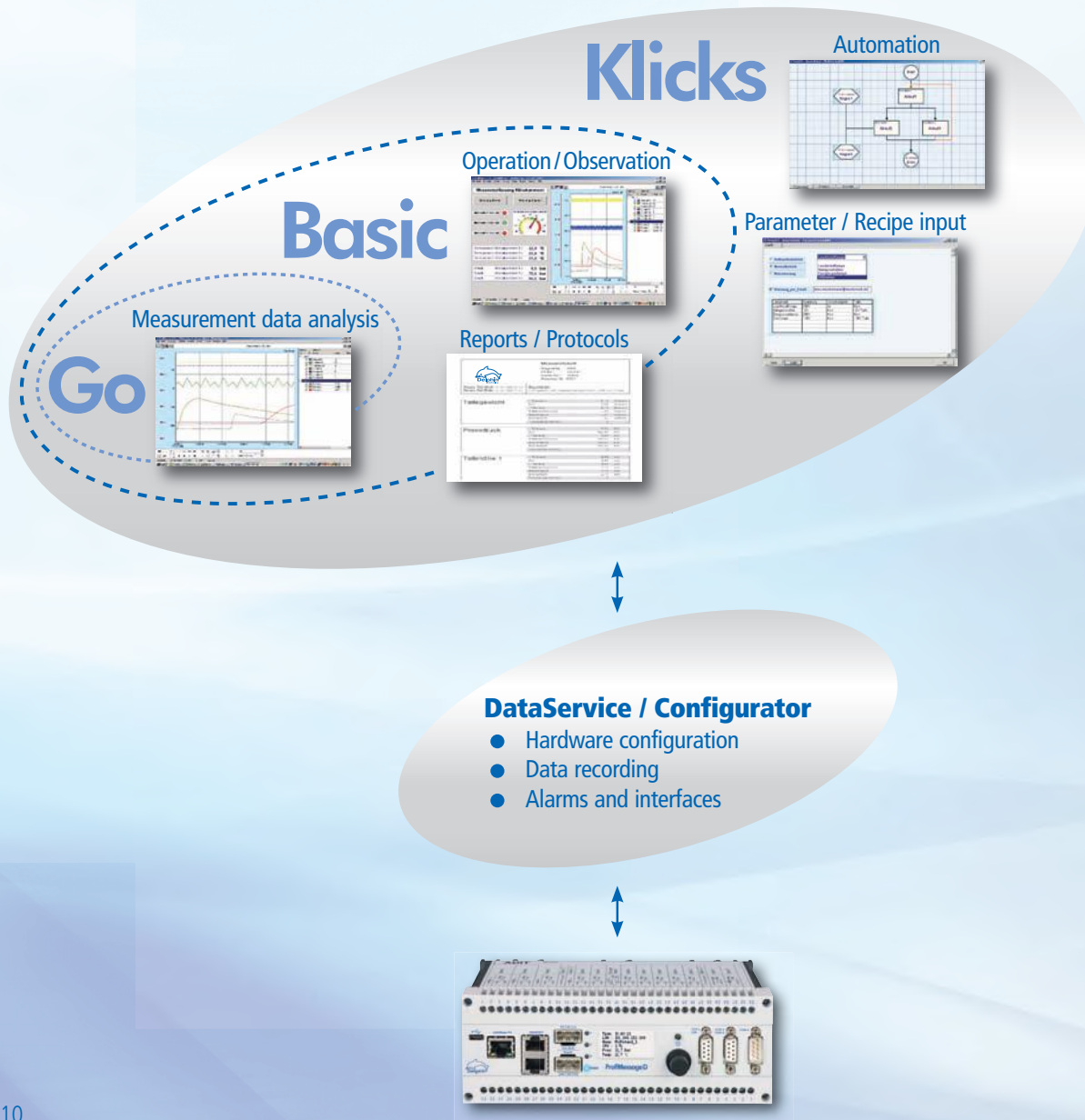
Status monitoring: Evaluates the status of measurement data and generates an alarm in the event of a mA signal wire breakage

- **Automation**

Setpoint channel: Automatic execution of setpoint curves with reset, hold and start triggers

Timer channel: Timer channels provide, for example, time delayed starts for a procedure in an experiment

- **All channels** can be found on our website delphin.com



BRANCH INDEPENDENT. **UNIVERSAL.**

Software – made **complete** by using ProfiSignal

Highly user friendly and optimised for applications, ProfiSignal functions as a universal tool for measurement / process data acquisition, test stand automation and measurement technology. Three scalable software packages are available to ensure easy acquisition of any measured data: ProfiSignal Go, Basic and Klicks.

ProfiSignal offers users a wide scope of options by being structured into modular function blocks. This enables users to have precisely the functions that are required. It is then easy to generate integrated processes independently – without the need for any programming expertise. Common areas of application for the software include diverse functionality and load tests as well as measurement data evaluation for multiple test stands. The following are examples of its wide range of the software's minor and major capabilities:

- Modular measurement data acquisition
- Monitoring and tracking systems
- Process data acquisition and preprocessing
- Fault data acquisition and fault diagnostics
- Acquisition, processing and recording of PLC and field bus signals
- Automation tool for experiments and test stands
- Remote monitoring tool for plant and machinery
- Laboratory measurement data acquisition and automation

Mobile devices as **dashboards**

Is a mobile phone or tablet a constant companion in your daily routine? With the new ProfiSignal Web add-on, you get constant access to a personal dashboard to enable location-independent visualisation and management of your processes. Mobile on-site access to measurement and characteristic data at test stands or production units saves time because it avoids the need to sit at a Windows PC in the office or control room. Remote monitoring of machines and systems is also easy using ProfiSignal Web.

Simply install ProfiSignal Web on your ProfiMessage D master device or on a central server and connect directly to the system using any device (PC, laptop, tablet, mobile phone). Individualised dashboards provide an instant overview of current process parameters. Live/historical data can also be portrayed in trends. For tablets and desktop versions, an editor is available which you can use to combine visualisation and control elements to create personalised views. And the beauty of it is that software installation is unnecessary. All that is required is a browser.

WEB-BASED VISUALISATION



ProfiMessageD – TECHNICAL SPECIFICATIONS

Modul Type	ADVT / AAST / ADIT		ADGT	AMDT / ADFT	IOIT / OTPT / DIOT
Analog inputs					
Voltage and current ranges	± 156 mV .. ± 10 V / 0 .. 20 mA, 4 .. 20 mA				-
Galvanic isolation to system	750 VDC				-
Max. differential voltage channel to channel	110 V	650 V	100 V		-
Resolution	24 bit	24 bit	14 bit		-
Analog outputs					
Resolution	16 bit	-	12 bit		-
Galvanic isolation	750 V	-	100 V		-
Output	0/4 .. 20 mA	-	0 .. 10 V		-
Digital inputs					
Galvanic isolation / input measurement range	2.5 kV / low: 0 .. 1.5 VDC@0 .. 1.5 mA / high: 3.5 .. 90 VDC@2 mA				
Frequency / counter inputs					
Galvanic isolation / input measurement range	2.5 kV / low: 0 .. 1.5 VDC@0 .. 1.5 mA / high: 3.5 .. 90 VDC@2 mA				
Measurement frequency	up to 30 kHz				
Digital outputs					
Galvanic isolation / switching voltage	2.5 kV / max. 50 VDC@2.5 A				
Data storage					
Internal	2 .. 14 GB (approx. 40 million readings per GB / 300 million readings per GB for AMDT, ADFT)				
Interfaces					
Physical COM 1 / COM 2	RS485, 9-pin Sub-D-plug, DIN EN ISO 19245-1				
Physical COM 3 / COM 4	RS232, 9-pin Sub-D connector				
Protocols COM 1 / COM 2	PROFIBUS DPV1 slave (both interfaces), also redundant, to PNO 2.212 V1.2				
Protocols COM 1 .. COM 4	Modbus RTU master / slave, customer-specific protocols, ASCII				
Ethernet	RJ45 (8-pin STP-plug), 1000Base-T, protocols: TCP/IP, HTTP, SMTP, NTP, Modbus TCP und OPC UA client / server				
PROFINET (optional)	2x RJ45 (8-pin STP socket) for any topologies; conformity class CC-B; ring redundancy MRP				
WLAN (optional)	802.11 b/g				
USB	USB 2.0 type C to configure and read out the data memory				
CAN	9-pin Sub-D-plug, protocols: CAN, RAW; baud rates: 50 k .. 1 MBaud				
Module bus baud rate / length	1 MBaud / 10 m .. 25 kBaud / 100 m				
General technical information					
Dimensions / Weight	W 200 x H 73 x D 118 mm / 1 kg				
Fixing	Rail mounting DIN EN 60715 or screw fixing				
Signal connection	Detachable screw terminals , 33 terminals in 2 rows, lead protection, connecting cabling max. 2.5 mm²				
Display	6 lines à 23 characters, operation via jog wheel				
Temperature range	-20 .. 50 °C				
Supply voltage	12 .. 36 VDC / ± 10 %				
Power input	< 10 Watt				

ProfiMessage D

Simply impressive!

- **Minimises costs in testing** – just one system for measurement, monitoring and automation
- **Modular measurement processes** for efficient engineering
- **Future-proof IoT** communication using OPC UA
- **Preventive condition monitoring**



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