



**Systems**



**Devices**



**Service**

*Individual solutions from one source*





Founded in June 1991 as a small company mainly concentrating on research and development of environmental measuring devices the Dr. Födisch Umweltmesstechnik AG has now gained a leading position for continuous emission measuring technology.

For more than 20 years the continuous tribo-electric dust measuring technology is one part of own developments. The scope of devices ranges from simple but very effective filter controllers to sophisticated dust concentration measuring devices e.g. for the application in wet gases.

In the field analytical engineering we develop and manufacture diverse gas analysers for the measurement of CO, NO, SO<sub>2</sub>, O<sub>2</sub> as well as HCl, NH<sub>3</sub>, N<sub>2</sub>O, H<sub>2</sub>O.

The portfolio of construction is completed by measuring devices for special applications (e.g. acid dew point measurement, biogas monitor).



## Individual solutions from one source

This is the guiding principle of Dr. Födisch Umweltmesstechnik AG. Long-time experiences of the employees in the field of process and environmental measuring technology as well as substantial knowledge in environmental law allow customised solutions.



As highly specialised service company we offer complete solutions for industry. Our engineers provide consulting, planning, installation as well as maintenance services for continuous emission monitoring systems in all industries.

We offer reliably working systems with low demand for maintenance and excellent price-performance ratio. All relevant system components are suitability tested according to German regulations.

**Dr. Födisch Umweltmesstechnik AG – Your competent world-wide partner.**

## Dust channel

The dust channel serves to investigate different measuring principles and influencing factors for the measurement of dust concentration, which is necessary for the development and test of new dust and flow measuring devices. The dust channel is a suitable test facility to simulate many different operating conditions for individual applications and device types.

For this purpose the Dr. Foedisch Umweltmesstechnik AG erected a test facility containing a dust channel in 1998. Next to research purposes, the dust channel offers the possibility to pre calibrate dust and flow measuring devices before they are supplied to the customer.



- possibility to produce dust contents within the range of 0.1...1000 mg/m<sup>3</sup> and velocities of 1...45 m/s
- simulation of different operating conditions and investigation of the variables influencing measuring principle and devices
- factory calibration of all dust and flow measuring devices

## Gas analytics “made by foedisch”

For research and testing purposes the company has different laboratory facilities including calibration workstations as well an in-house energy centre.



Among other things a small power plant allows to test measuring devices under raw and clean gas conditions being as close as possible to reality.

## Filter monitoring

The measurement of dust emissions becomes more and more important all over the world. Until recently optical dust measuring devices dominated this application field. However, due to their advantageous features triboelectric dust measuring devices have increased their market share steadily.

The filter monitoring devices of Dr. Födisch Umweltmesstechnik AG are highly sensitive systems for continuous, tribo-electric in-situ filter monitoring. Thereby a qualitative monitoring of the exhaust gas is done. The measurement is carried out via the tribo-electric measuring method.

### PFM 02

- suitability tested by TÜV according to "TA Luft"
- continuous measurement of dust emissions after de-dusting facilities
- real-time monitoring of dust emissions
- also available as PFM 02 HB and PFM 02 EX



### PFM 02 HB

- EC-type examination certificate according to DIN EN ISO 13849-1
- safe monitoring of residual dust content
- especially developed for wood-processing industry
- monitoring of filter systems with air recirculation

### PFM 02 Ex

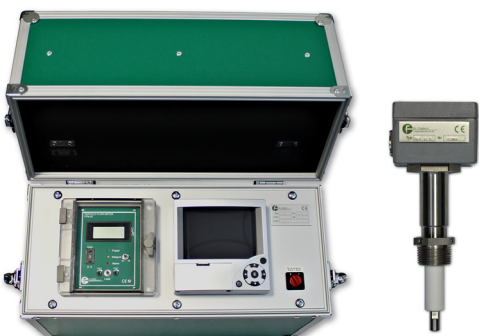
- suitability tested by TÜV according to "TA Luft"
- EC-type examination certificate according to EN 60079, ATEX directive
- application in potentially explosive atmospheres, approved for Ex II 1/3D Ex ia/tc IIIC T74 °C Da/Dc, Ex II 3G Ex ic nA IIC T4 Gc

### PFM 13

- dust measurement and filter monitoring with one compact device
- no separate power supply necessary (2-wire transmitter)
- as PFM 13 C also available without graphic display



## Filter diagnosis



### PFM 92 K

- mobile filter diagnosis device for tribo-electric in-situ monitoring of dusty emissions
- immediate monitoring of the clean gas dust content after filter systems
- integrated recorder

## Dust concentration measurement

The tribo-electric signal depends on the mechanical and electrical properties of dust. Apart from the dust concentration it seems that the gas velocity has the most important influence on the tribo-electric charge transfer. In case of fluctuating exhaust gas velocities this influence has to be considered in the calculation of the dust concentration.

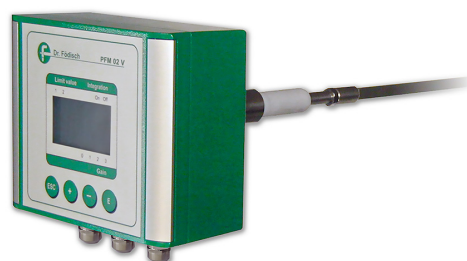
Based on the following mathematical correlation the tribo-electric dust signal is compensated by the velocity measured at the same time.

$$c_{i.o.} = A \cdot cal \cdot v^{exp.} + D$$

$c_{i.o.}$	dust concentration (in operating state)
cal	measuring value (raw signal)
A, D	calibration constants
v	velocity of measuring gas
exp.	exponent (constant or function)

### PFM 02 V

- suitability tested by TÜV according to "TA Luft", 13<sup>th</sup>, 17<sup>th</sup> and 27<sup>th</sup> BImSchV
- continuous in-situ dust concentration measurement in all industrial branches with dry exhaust gases
- additional input for connection of external measurement of exhaust velocity respectively flow and temperature



In case of droplets or aerosols in the exhaust gas the dust concentration has to be measured extractively. For this, a representative measuring gas sample is sucked off continuously from the stack, heated, diluted with dry air and finally measured in a cell with constant flow.

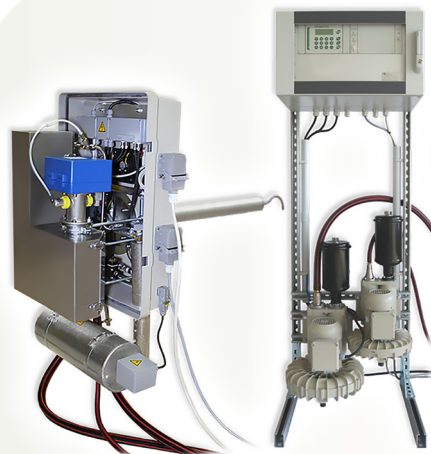
With the devices PFM 97 ED and PFM 06 ED of Dr. Födisch Umweltmesstechnik AG the continuous dust concentration measurement in wet and sticky exhaust gases is possible - independent of dew-point spread and flow. Thereby an automatic self-cleaning is carried out.

### PFM 97 ED

- suitability tested by TÜV according to "TA Luft", 13<sup>th</sup>, 17<sup>th</sup>, 27<sup>th</sup> and 30<sup>th</sup> BImSchV
- extractive tribo-electric dust measurement
- tribo-electric measuring cell

### PFM 06 ED

- suitability tested according to DIN EN 15267, certified in compliance with QAL1
- extractive optic dust measurement
- optical laser lance unit



## Flow measurement

The continuous measurement of velocity and temperature of gas flows is much important at operation of a system with flowing gases (e.g. hall outlet air, exhaust etc.). At emission measurements the current concentrations are determined. For the translation to absolute emitted masses the volume is necessary; this is calculated through the gas velocity.

The flow measuring devices of Dr. Födisch Umweltmesstechnik AG measure continuously the gas velocity and the temperature of gas flows in pipelines. Moreover it is possible to display and provide the flow in operating and norm state. The use of the measuring principle of dynamic-pressure and PT100 guarantees devices simply to install and handle as well as a timely monitoring of the measuring parameters.

### FMD 02

- suitability tested by TÜV according to "TA Luft", 13<sup>th</sup>, 17<sup>th</sup>, 27<sup>th</sup> and 30<sup>th</sup> BImSchV
- continuous flow, velocity and temperature measurement in exhaust gases



### FMD 09

- suitability tested according to DIN EN 15267, certified in compliance with QAL1
- continuous flow, velocity and temperature measurement in exhaust gases
- probe cleaning system for plants with dust content > 100 mg/m<sup>3</sup>
- operating and display unit integrated in weather protection casing

## Oxygen measurement

For optimisation of combustion control and emission monitoring, accurate and rapid oxygen measuring values by a direct local measurement are often required.

The oxygen measuring device of Dr. Födisch Umweltmesstechnik AG is used for the measurement of the oxygen concentration in flue gases and process gases. The oxygen measurement is carried out by means of a zirconium dioxide cell, whereat the concentration of the free oxygen is measured.

### OMD 14

- regulated sensor heating
- potentiometric zirconium dioxide sensor
- steady exactness in all oxygen concentration ranges



## Gravimetric measurement

For the calibration of dust measuring devices the gravimetric dust measurement is used as reference measuring method. The gravimetric measuring devices of Dr. Födisch Umweltmesstechnik AG are compact and high-grade automated system for isokinetic gravimetric dust measurement in exhaust ducts and stacks. All relevant parameters for determination of dust content are registered by the system on standard conditions. The measuring gas sampling is regulated fully automatic isokinetic.

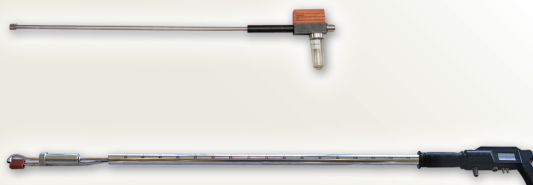


### GMD 12

- measurement of all marginal parameters which are necessary for dust measurement on its own
- selection of the appropriate sample nozzle is assisted by the measuring unit
- storage of the current measuring values during measurement for future analysis
- ergonomic sample probe with integrated aerosol filter

### GMD 13

- sampling, weighting and evaluation in one system on location
- value accuracy by hot weighting
- semi-automated weighting process
- project-based software



## Sensor technology

To make out health hazards by fine dust loading of the environment a continuous measurement and control of fine dust contents in ambient air is most important.

With the optical fine dust sensor of Dr. Födisch Umweltmesstechnik AG the monitoring for fine dust in the range of production, in offices and public institutions as well as in the private domain is possible.



### FDS 15

- scattered light measurement
- integrated pre-separator
- active suction
- network-compatible, WLAN
- to be used in stationary application or mobile

## Gas analysis

The gas analysers of Dr. Födisch Umweltmesstechnik AG serve the continuous emission measurement of pollutants in flue gas as well as the continuous process control. They are applicable all-purpose for measurement of emissions, raw gases or processes.

Measuring methods at cold gas analysis:

- infrared photometer
- paramagnetic measuring method <sup>[1]</sup>
- electrochemical cell

Measuring methods at hot gas analysis:

- bi-frequency measuring method
- gas filter correlation
- zirconium dioxide cell

### Cold gas analyser MGA 12

- suitability tested according to DIN EN 15267-3, certified in compliance with QAL1
- system: suitability tested and certified for systems after "TA Luft", 13<sup>th</sup> and 27<sup>th</sup> BImSchV according to DIN EN 15267-3



#### Measuring ranges

CO:	0...125 mg/m <sup>3</sup> (0...100 ppm)	0...1000 mg/m <sup>3</sup> (0...800 ppm)
CO <sub>2</sub> :	0...20 vol. %	-
SO <sub>2</sub> :	0...200 mg/m <sup>3</sup> (0...70 ppm)	0...1000 mg/m <sup>3</sup> (0...350 ppm)
NO:	0...300 mg/m <sup>3</sup> (0...225 ppm)	0...1000 mg/m <sup>3</sup> (0...750 ppm)
NO <sub>2</sub> <sup>[1]</sup> :	0...200 mg/m <sup>3</sup> (0...95 ppm)	0...1000 mg/m <sup>3</sup> (0...485 ppm)
CH <sub>4</sub> <sup>[1]</sup> :	0...300 mg/m <sup>3</sup> (0...420 ppm)	0...1000 mg/m <sup>3</sup> (0...1400 ppm)
H <sub>2</sub> S <sup>[1] [2]</sup> :	0...75 mg/m <sup>3</sup> (0...50 ppm)	-
H <sub>2</sub> O <sup>[1]</sup> :	0...3 vol. % <sup>[4]</sup>	-
O <sub>2</sub> <sup>[2] [3]</sup> :	0...25 vol. %	-

<sup>[1]</sup> not part of the suitability test, <sup>[2]</sup> measurement via electrochemical cell, <sup>[3]</sup> measurement via paramagnet <sup>[1]</sup>, <sup>[4]</sup> residual moisture after cooling unit



## Gas analysis

### Hot gas analyser MCA 04

- suitability tested according to DIN EN 15267-3, certified according to QAL1 and MCERTS Performance Standards
- system: suitability tested and certified for systems after "TA Luft", 13<sup>th</sup>, 17<sup>th</sup> and 30<sup>th</sup> BImSchV acc. to DIN EN 15267-3
- deliverable as emission measuring device in analyser container, e.g. for systems requiring approval and systems according to 27<sup>th</sup> BImSchV
- also available as mobile variant



#### Measuring ranges

CO:	0...75 mg/m <sup>3</sup>	0...300 mg/m <sup>3</sup>	
CO <sub>2</sub> :	0...20 vol. %	-	
NO:	0...200 mg/m <sup>3</sup>	0...395 mg/m <sup>3</sup>	
NO <sub>2</sub> :	0...50 mg/m <sup>3</sup>	0...1000 mg/m <sup>3</sup>	
N <sub>2</sub> O:	0...50 mg/m <sup>3</sup>	0...1000 mg/m <sup>3</sup>	
NH <sub>3</sub> :	0...30 mg/m <sup>3</sup>	0...75 mg/m <sup>3</sup>	
SO <sub>2</sub> :	0...75 mg/m <sup>3</sup>	0...300 mg/m <sup>3</sup>	
HCl:	0...15 mg/m <sup>3</sup>	0...90 mg/m <sup>3</sup>	
HF*:	-	0...20 mg/m <sup>3</sup>	
CH <sub>4</sub> *:	-	0...50 mg/m <sup>3</sup>	
H <sub>2</sub> O:	0...40 vol. %	-	
TOC, C <sub>n</sub> H <sub>m</sub> (optional):	0...15 mg/m <sup>3</sup>	0...30 mg/m <sup>3</sup>	
O <sub>2</sub> :	0...25 vol. %	-	

\* not part of the suitability test

### Hot gas analyser MCA 10 HWIR

- suitability tested according to DIN EN 15267-3, certified in compliance with MCERTS Performance Standards
- field-proven components
- modern photometer technology
- also available as mobile variant



#### Measuring ranges

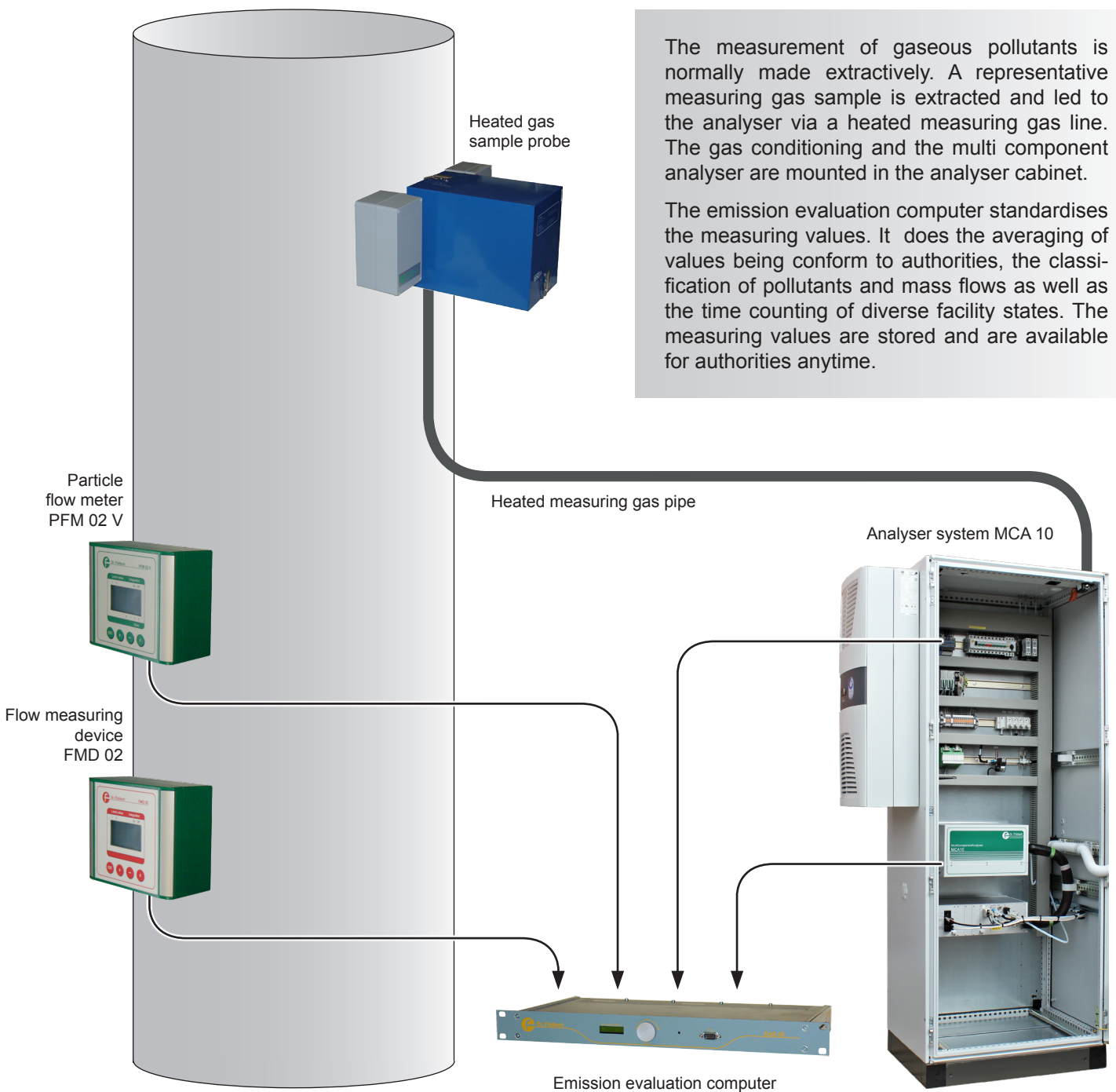
CO:	0...75 mg/m <sup>3</sup>	0...300 mg/m <sup>3</sup>	0...5000 mg/m <sup>3</sup>
CO <sub>2</sub> :	0...25 vol. %	0...50 vol. %	-
NO:	0...200 mg/m <sup>3</sup>	0...400 mg/m <sup>3</sup>	0...3000 mg/m <sup>3</sup>
NO <sub>2</sub> :	0...50 mg/m <sup>3</sup>	0...500 mg/m <sup>3</sup>	-
N <sub>2</sub> O:	0...50 mg/m <sup>3</sup>	0...3000 mg/m <sup>3</sup>	-
NH <sub>3</sub> :	0...10 mg/m <sup>3</sup>	0...50 mg/m <sup>3</sup>	0...500 mg/m <sup>3</sup>
SO <sub>2</sub> :	0...75 mg/m <sup>3</sup>	0...300 mg/m <sup>3</sup>	0...2500 mg/m <sup>3</sup>
HCl:	0...15 mg/m <sup>3</sup>	0...90 mg/m <sup>3</sup>	0...5000 mg/m <sup>3</sup>
HF:	-	0...20 mg/m <sup>3</sup>	-
H <sub>2</sub> O:	0...40 vol. %	-	-
CH <sub>4</sub> :	0...50 mg/m <sup>3</sup>	0...500 mg/m <sup>3</sup>	-
TOC:	0...15 mg/m <sup>3</sup>	0...30 mg/m <sup>3</sup>	-
O <sub>2</sub> :	0...25 vol. %	-	-



# Emission measuring systems

## Emission measuring systems accord. to "TA Luft", 13<sup>th</sup>, 17<sup>th</sup>, 27<sup>th</sup>, 30<sup>th</sup> BImSchV

- project management
- engineering
- mounting
- commissioning
- maintenance
- service



The measurement of gaseous pollutants is normally made extractively. A representative measuring gas sample is extracted and led to the analyser via a heated measuring gas line. The gas conditioning and the multi component analyser are mounted in the analyser cabinet.

The emission evaluation computer standardises the measuring values. It does the averaging of values being conform to authorities, the classification of pollutants and mass flows as well as the time counting of diverse facility states. The measuring values are stored and are available for authorities anytime.

## Systems

- first-class complete solutions for emission monitoring
- support for implementing authority requirements
- compact design of measuring systems
- planning, production, installation
- professional after-sales support and service independent from brand



## Devices

- planning, production, installation and after-sales service
- serial production and customisation
- customised solutions

## Service

- maintenance and service for own- or foreign-constructed systems for emission or process measurement
- approval management
- authority engineering
- process-related and other services



# Contact persons



## CEO

Mr Dr. Holger Födisch  
Phone: +49 34205 755-0  
E-mail: [vorstand@foedisch.de](mailto:vorstand@foedisch.de)



## Head office

Dr. Födisch Umweltmesstechnik AG  
Zwenkauer Strasse 159  
04420 Markranstädt (Germany)



## Research & development

Mr Jörg Schulz,  
director of research and development  
Phone: +49 34205 755-41  
E-mail: [schulz@foedisch.de](mailto:schulz@foedisch.de)



## Sales

Mr Helmut Kaczmarek, sales director  
Phone: +49 34205 755-13  
E-mail: [kaczmarek@foedisch.de](mailto:kaczmarek@foedisch.de)



## Gas analytics

Mr Hagen Amboldt,  
director of gas analytics  
Phone: +49 34205 755-31  
E-mail: [amboldt@foedisch.de](mailto:amboldt@foedisch.de)



## Sales branch office North, Großburgwedel

Mr Reiner Krogbeumker  
Phone: +49 172 7572884  
E-mail: [krogbeumker@foedisch.de](mailto:krogbeumker@foedisch.de)



## Engineering

Ms Gabriele Dietrich,  
director of engineering  
Phone: +49 34205 755-18  
E-mail: [dietrich@foedisch.de](mailto:dietrich@foedisch.de)



## Sales branch office West, Mülheim a.d.Ruhr

Mr Dirk Roloff  
Phone: +49 174 3344354  
E-mail: [roloff@foedisch.de](mailto:roloff@foedisch.de)



## Production

Mr Uwe Riemann,  
director of production  
Phone: +49 34205 755-16  
E-mail: [riemann@foedisch.de](mailto:riemann@foedisch.de)



## Sales branch office Rhine/Main, Hünstetten

Mr Thomas Lambertz  
Phone: +49 177 3461083  
E-mail: [lambertz@foedisch.de](mailto:lambertz@foedisch.de)



## Maintenance & service

Mr Jens Gläßer,  
director of maintenance & Service  
Phone: +49 34205 755-48  
E-mail: [gluesser@foedisch.de](mailto:gluesser@foedisch.de)



## Export / international sales

Ms Simone Schramm  
Phone: +49 34205 755-54  
E-mail: [schramm@foedisch.de](mailto:schramm@foedisch.de)

## Service centres

DFU Analysenservice GmbH  
Baukauer Strasse 86  
44653 Herne (Germany)

DFU Service GmbH  
In den Gartenwiesen 4  
65830 Kriftel (Germany)

Dr. Födisch Umweltmesstechnik AG/  
Service office North  
Lübeck (Germany)

## Sales areas

Our sales areas are divided corresponding to the following postcode areas.

### East

0xxxx, 1xxxx, 39xxx, 98xxx/99xxx

### South

8xxxx, 90xxx - 96xxx

### North

2xxxx, 30xxx/31xxx, 37xxx/38xxx

### West

32xxx/33xxx, 4xxxx, 50xxx-53xxx,  
57xxx-59xxx

### Rhine/Main

34xxx-36xxx, 54xxx-56xxx, 6xxxx,  
7xxxx, 97xxx



### Representative office China

Room 1002, Jingui Mansion,  
No.387 Gudun Road  
Hangzhou, P.C.310012  
P.R. China  
[www.foedisch-china.com](http://www.foedisch-china.com)

## Subsidiaries



100%

DFU Analysenservice GmbH  
Baukauer Strasse 86  
44653 Herne (Germany)



100%

DFU Service GmbH  
In den Gartenwiesen 4  
65830 Kriftel (Germany)



100%

*Fanalmatic - Gesellschaft für Umwelttechnik und Industrieautomation mbH*

The company's scope of performance with regard to planning, engineering, assembly, commissioning and service for electrical facilities, automation and monitoring systems combined with necessary know-how guarantees future-proof solutions in the sectors:

- environmental technology
- water management
- clean room technology
- industrial automation

Fanalmatic GmbH  
Cösitzer Weg 2  
06369 Weissandt-Gölsau  
(Germany)

Phone: +49 34978 268-0  
Fax: +49 34978 268-20  
E-mail: info@fanalmatic.com



67%

*Peter Nitschke Service und Dosieranlagentechnik GmbH*

The company offers numerous methods for the treatment of drinking water, process water, waste water and bathing water - not only for new plants but also for remediation and optimisation of existing facilities. The following scope of supply is possible:

- tank farm accord. to WHG §19
- dosing stations for liquid chemicals
- gas dosing and warning facilities
- storage, treatment and dosing of powdery substances and granulates
- measuring, control and evaluation technology for drinking water, process water and waste water

Peter Nitschke GmbH  
Zwenkauer Strasse 159  
04420 Markranstädt (Germany)

Phone: +49 34205 4278-0  
Fax: +49 34205 4278-9  
E-mail: info@peter-nitschke.de

## Investments



40%

*Gesellschaft für Ingenieurbau, Bauwerksinstandhaltung und Anlagenmanagement mbH*

Zwenkauer Strasse 159  
04420 Markranstädt (Germany)

Phone: +49 34205 2009-10  
Fax: +49 34205 2009-20  
E-mail: giba@giba-online.de



57%

*AllTec Automatisierungs- und Kommunikationstechnik GmbH*

AllTec ... everything with system.

The system integrator in the field of automation and communication plants offers already today system solutions for tomorrow with consequent orientation at customers' requirements.

The core competencies automation, switchgear construction as well as information technology are concentrated under one roof.

Alltec serves customers in the fields of:

- mining
- power plant technology
- material handlings equipment
- environmental technology

AllTec Automatisierungs- und Kommunikationstechnik GmbH  
Gewerbegebiet Eula-West Nr.11  
04552 Borna (Germany)

Phone: +49 3433 246-0  
Fax: +49 3433 246-333  
E-mail: info@alltec-borna.de

## Europe

### *Czech Republic*

LEVEL INSTRUMENTS CZ - LEVEL EXPERT s.r.o.  
[www.levelexpert.cz](http://www.levelexpert.cz)

### *Finland*

Kontram Oy  
[kontram@kontram.fi](mailto:kontram@kontram.fi)

Oy Anatec Instruments AB  
[www.anatec.fi](http://www.anatec.fi)

### *France*

Solstice SAS  
[www.solstice-analyse.com](http://www.solstice-analyse.com)

### *Italy*

Mavetec srl Unipersonale  
[www.mavetec.it](http://www.mavetec.it)

### *Poland*

Analytics International Ltd.  
[www.analyticspl.eu](http://www.analyticspl.eu)

Atut Sp. z.o.o.  
[www.atut.lublin.pl](http://www.atut.lublin.pl)

MLU sp. z.o.o.  
[www.mlu.pl](http://www.mlu.pl)

### *Russia*

Evrotechlab  
[www.evrotechlab.ru](http://www.evrotechlab.ru)

### *Serbia*

WIG  
[www.wig.rs](http://www.wig.rs)

### *Spain*

PSA Ingenieros  
[www.psaingenieros.com](http://www.psaingenieros.com)

### *Sweden*

ALFAKOMP AB  
[www.alfakomp.se](http://www.alfakomp.se)

ALNAB Armatur AB  
[www.alnab.se](http://www.alnab.se)

### *The Netherlands*

Arvansys b.v.  
[www.arvansys.com](http://www.arvansys.com)

### *United Kingdom*

CEM Solutions (UK) Ltd.  
[www.cemsolutions.co.uk](http://www.cemsolutions.co.uk)

## Middle East

### *Iran*

Delta Gas Mobin Group  
[www.delta-gas.com](http://www.delta-gas.com)

### *Kazakhstan*

BKKS Ltd. - Batys Kazakhstan Kuat Service  
[www.bbks.kz](http://www.bbks.kz)

### *Saudi Arabia*

GACS ARABIA - Gulf Advanced Control Systems  
[www.gacsarabia.com](http://www.gacsarabia.com)

### *Turkey*

Ekosis  
[www.ekosisltd.com.tr](http://www.ekosisltd.com.tr)

## Asia

### *India*

DNP International  
[www.dnpinternational.net](http://www.dnpinternational.net)

Techmark Engineers & Consultants  
[www.techmark.co.in](http://www.techmark.co.in)

### *Malaysia*

Turcomp Engineering Services Sdn Bhd  
[www.turcomp.com](http://www.turcomp.com)

### *South Korea*

Eroom Technology Co. Ltd.  
[www.eroomtech.co.kr](http://www.eroomtech.co.kr)

Dr. Födisch Umweltmesstechnik AG  
Zwenkauer Strasse 159  
04420 Markranstädt  
Germany

Phone: +49 34205 755-0  
Fax: +49 34205 755-40  
E-mail: [vertrieb@foedisch.de](mailto:vertrieb@foedisch.de)  
Internet: [www.foedisch.de](http://www.foedisch.de)

