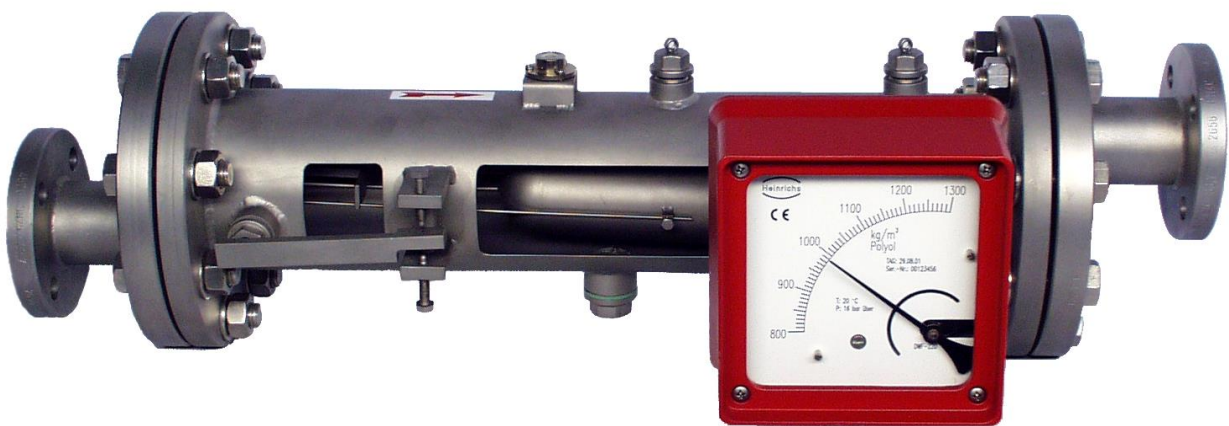
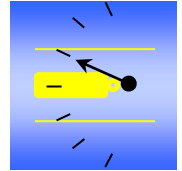


Density meter DWF

Installation and operating manual



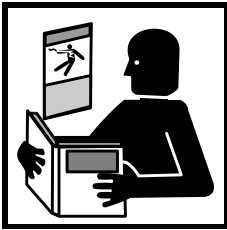
Read these Operation Instructions thoroughly and keep them available for reference!

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I. Steps prior to operation



It is essential that you read these operating instructions before installing and operating the device.

The device is to be installed and serviced by a qualified technician only.

The density - meter DWF is to be used exclusively to measure density, as well as liquid, in conjunction with technical specification by Heinrichs Messtechnik.

This installation and operating manual explains how to operate, install and perform maintenance on the density meter.

The manual doesn't apply to non-standard versions or applications.

All devices are thoroughly tested and checked for order compliance prior to shipping. Upon receipt of the device, check it for shipping damage.

If any problem comes to light, contact our head office in Cologne or the local sales office responsible for your area. Please describe the problem and indicate type and serial number of the device. Heinrichs Messtechnik extend no guarantee of any kind for repair work that is undertaken without notifying us in advance of the intention to carry out such work. Unless otherwise agreed, any part or component for which a claim is lodged is to be sent to us for examination.

Downloading of the present document from our web site www.heinrichs-mt.com and printing out this document is allowed only for purposes of using our DWF density-meter. All rights reserved. No instructions, wiring diagrams, and/or pictures, or any portion thereof, may be produced, stored, in a retrieval system or transmitted by any means, electronic, mechanical, photocopying or otherwise, without the prior written permission of Heinrichs Messtechnik GmbH.

Although the materials in the present document were prepared with extreme care, errors cannot be ruled out. Hence, neither the company, the programmer nor the author can be held legally or otherwise responsible for any erroneous information and/or any loss or damage arising from the use of the information herein.

Heinrichs Messtechnik GmbH extends no express or implied warranty in regard to the applicability of the present document for any purpose other than that described herein.

We plan to optimize and improve the products described herein and in so doing will incorporate not only our own ideas but also, and in particular, any suggestions for improvement made by our customers. If you feel that there is any way in which our products could be improved, please send your suggestions to the following address:

Heinrichs Messtechnik GmbH
HM-E (Development Department)
Headword: DWF

Robert-Perthel-Straße 9
D-50739 Köln

or:
via E-mail: <mailto:info@heinrichs-mt.com>



We reserve the right to change the technical data herein in the light of any technical progress that might be made. For updates regarding the product herein, visit our website at www.heinrichs-mt.com, where you will also find contact information for the Heinrichs Messtechnik distributor nearest you. For information regarding our own sales operations, contact us at info@heinrichs-mt.com.

1.1 Safety first!

The device described herein is to be installed and serviced only by a qualified specialist such as a qualified Heinrichs Messtechnik mechanic or service technician.



Warning

Before servicing the device, it must be completely empty, and disconnected from all peripheral devices. Only original replacement parts are to be used.

Heinrichs Messtechnik GmbH accepts no liability for any loss or damage of any kind arising from improper operation of any product, improper handling or use of any replacement part, or from external electrical or mechanical effects, over voltage or lightning. Any such improper operation, use or handling shall automatically invalidate the warranty for the product concerned.

In the event a problem arises with your device, please contact us at one of the following numbers to arrange to have your device repaired:

Phone: +49 221 49708-0
Fax: +49 221 49708-178

Contact our customer service department if your device needs repair or if you need assistance in diagnosing a problem with your device

1.2 Safety advisory for the user

The present document contains the information that you need in order to operate the product described herein properly. The document is intended for use by qualified personnel. This means personnel, who are qualified to operate the device described herein safely,

- mechanic engineers,
- service technicians

who are conversant with the safety regulations pertaining to the use of Measuring and control engineering devices and with the applicable laws and regulations in their own country.

Such personnel must be authorized by the facility operator to install, commission and service the product described herein, and are to read and understand the contents of the present operating instructions before working with the device.

1.3 Hazard warnings

The purpose of the hazard warnings listed below is to ensure that device operators and maintenance personnel are not injured and that the density-meter and any devices connected to it are not damaged.

The safety advisories and hazard warnings in the present document that aim to avoid placing operators and maintenance personnel at risk and to avoid material damage are prioritized using the terms listed below, which are defined as follows in regard to the instructions herein and the advisories pertaining to the device itself.

Danger

means that failure to take the prescribed precautions **will result** in death, severe bodily injury, or substantial material damage.

Warning

means that failure to take the prescribed precautions **could result** in death, severe bodily injury, or substantial material damage.

Caution

means that the accompanying text contains important information about the product, handling the product or about a section of the documentation that is of particular importance.

Note

means that the accompanying text contains important information about the product, handling the product or about a section of the documentation that is of particular importance.

1.4 Proper use of the device



Warning

The operator is responsible for ensuring that the material used in the sensor and housing is suitable and that such material meets the requirements for the fluid being used and the ambient site conditions. The manufacturer accepts no responsibility in regard to such material and housing.



Warning

In order for the device to perform correctly and safely, it must be shipped, stored, set up, mounted, operated and maintained properly.

1.5 Returning your sensor for servicing or calibration

Note: In accordance with the applicable German waste disposal legislation, the owner/client is responsible for the disposal of special waste and hazardous materials.

Consequently, all devices sent to us for repair must be free of any hazardous materials.

This also applies to possible hollow spaces and fissures in the devices. If repair is necessary, confirm the above-mentioned item in writing



Warning

The operator is liable for any loss or damage of any kind, including personal injury, decontamination measures, removal operations and the like that are attributable to inadequate cleaning of the device.

Any device sent in for servicing is to be accompanied by a certificate as specified in [Decontamination certificate for device cleaning](#).

The device is to be accompanied by a document describing the problem with the device. Please include in this document the name of a contact person that our technical service department can get in touch with so that we can repair your device as expeditiously as possible and therefore minimize the cost of repairing it.

If hazardous materials remain in or on the device after it has been returned, Heinrichs Messtechnik shall be authorized to remove them at the client's expense without further inquiry!

2. Definition of the device

Vendor / Manufacture

Heinrichs Messtechnik GmbH
Robert – Perthel - Str. 9 · D-50739 Köln
Phone +49 (221) 49708 - 0
Fax +49 (221) 49708 - 178
Internet: <http://www.heinrichs-mt.com/>
E-Mail: <mailto:info@heinrichs-mt.com>

Product type and designation

Mechanical density - meter DWF

Manual issue date

30.06.2020

Version No.

20.01
file: DWF_BA_20.01_en

3. Applications

The sensor DWF is used for density metering of liquid media in pipes. The scale on the device shows the density rate expressed as grams per liter or kg per m³. Special scale on your request.

Applications: density -metering, -monitoring, and control of liquid media.
The device can be fitted with limit switches for purposes or ES converter of process monitoring.

Note: The device is of limited use for the metering of potentially hazardous liquids. It is imperative that the operator takes steps to ensure that, no personnel are harmed and no equipment is damaged. The system operator is legally responsible for any effects provoked by operation of the device.

4. Operating principle and system configuration

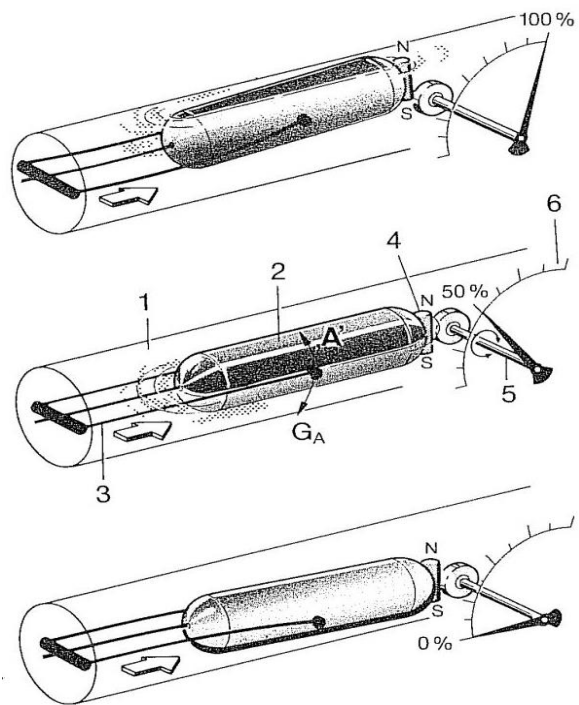
The measuring element is composed of a measuring chamber (1), measuring spring-rods (3), float (2) and a magnetic coupling system (4+5).

If a liquid medium flows through the horizontal measuring chamber (1) and in direction to the arrow, the float surrounded by the liquid is lifted until a state of balance between the lift force (A), the measuring spring-rods (3) and the float weight (G_A) is reached.

The vertical position of the float in the chamber is a measure for the density of the medium and will be transmitted to the scale (6) by an encapsulated magnetic coupling system (4+5).

Density changes thus entail an adjustment of the local indication or of the electrical output signal.

The readings obtained apply solely to the medium for which the device has been calibrated or for a medium with the same viscosity.

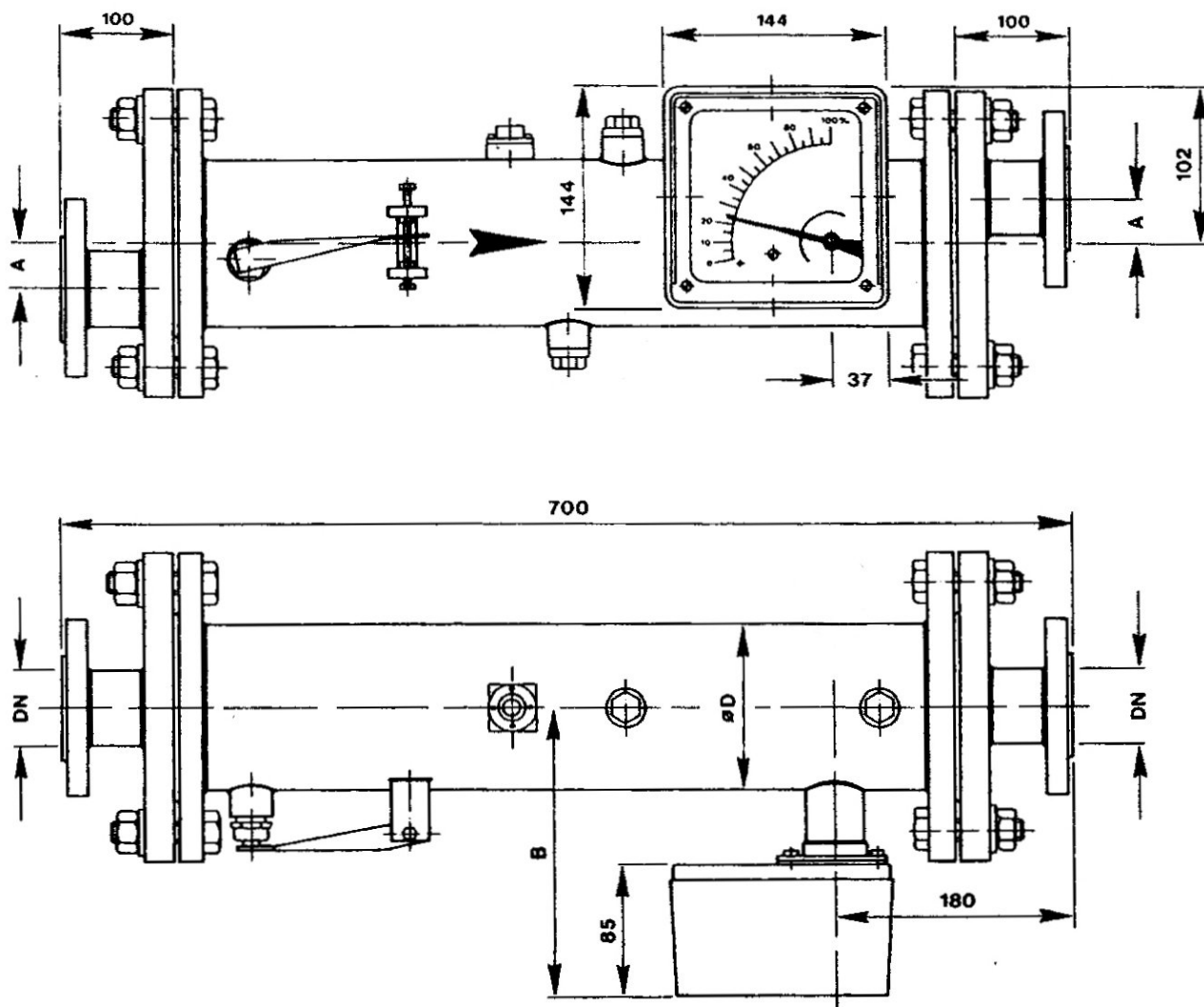


5. Technical Data

Equipment execution:	DWF-S	Stainless steel
	DWF-H	Hastelloy
Process - connection		DIN / EN
	Body 1 Ø D=108mm	25 PN40
	Body 2 Ø D=140mm	50 PN40
	Body 3 Ø D=194mm	50 PN40
Max. process pressure	PN16	higher pressure on request
Ambient conditions	dimension	700mm
	Flow direction	horizontal
	Flow in and out	horizontal
Largest flow range water 20°C	Body 1	max. 2500 l/h
	Body 2	max. 5000 l/h
	Body 3	max. 10000 l/h
Measuring range	density	700 – 1900 g/l
	Measuring span	50g/l ... 600g/l
		Measured error
	50 g/l	± 1,25 g/l
	100 g/l	± 2 g/l
	200 g/l	± 3 g/l
	300 g/l	± 4,5 g/l
	600 g/l	± 6 g/l
	Repeatability	± 1% of Measuring span
	Linearity	± 1% of Measuring span
Ambient conditions	Ambient temperature	-20°C ... +80 °C without electrical accessories -20°C ... +70 °C with ES converter -20°C ... +65 °C with limit transducer
	Storage temperature	identical to the ambient temperature ranges.
	Climatic category	weather-protected and/or unheated locations, class C according to IEC 654 Part 1
	Shock resistance / vibration resistance	the meter should be protected against extreme shocks and vibrations, which could end in damage.
Fluid conditions	Fluid temperature	-20°C ... +150°C
	Max. flow	max. flow ranges of the bodys based on density and viscosity of water at 20°C. It will be less by higher density and viscosity.
	Physical state	liquid
	Viscosity	measuring output will be changed by viscosity of liquid.
Options	Limit switches	KEI 1 (inductive) KEI 2 (inductive)
	ES converter	HART [*] Profibus PA
	Magnetic filter	On request
	Connections	special connections on request

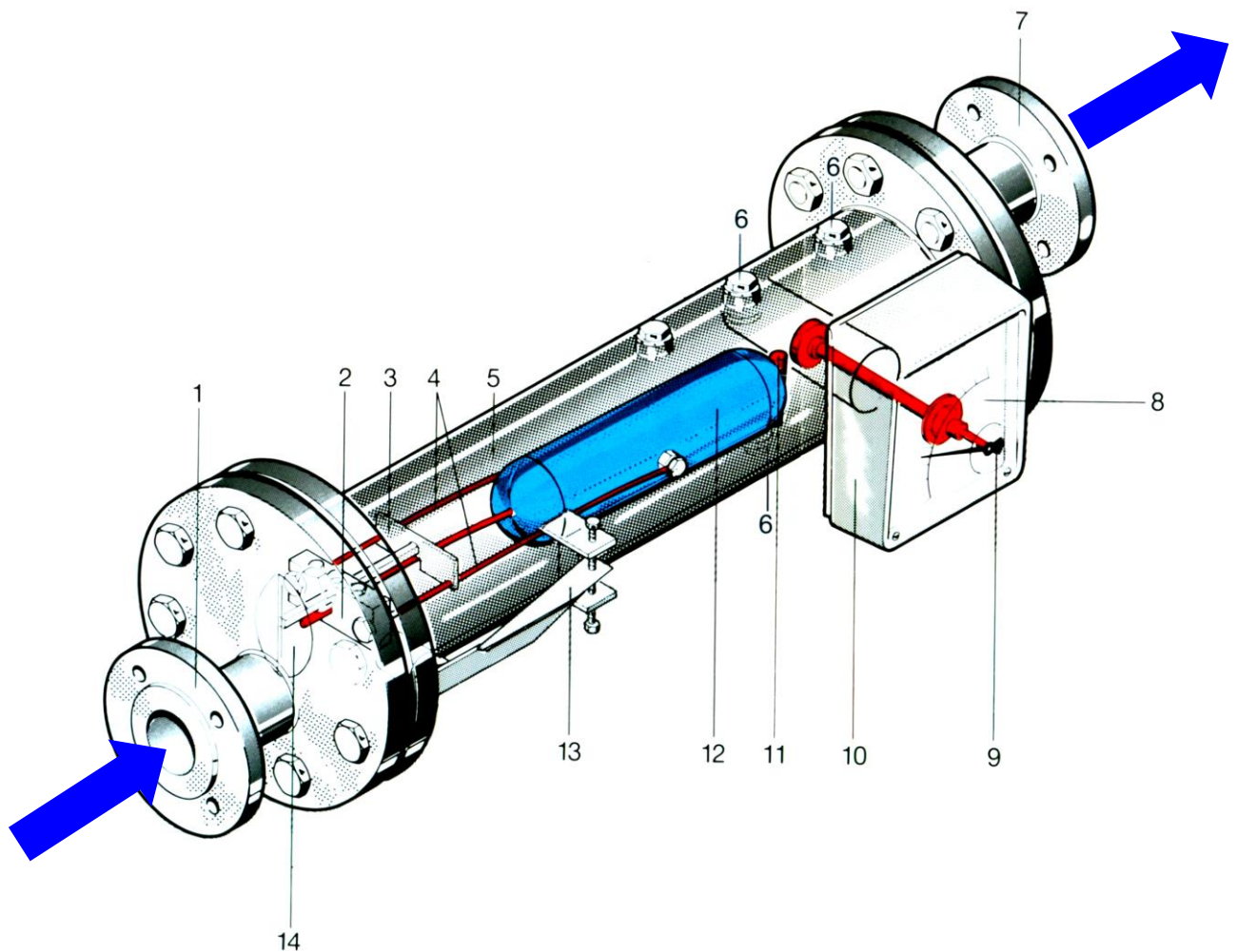
6. Construction

6.1 Type of dimensions



DN / EN	PN	$\varnothing D$ (mm)	A (mm)	B(mm)	DWF Nr.
25	40	108	30	258	1
50	40	140	40	258	2
50	40	194	65	258	3

6.2 Construction details



Pos.	Bezeichnung	Pos.	Bezeichnung
1	process connection - flow inlet	8	measuring scale
2	spring-rods - float suspension	9	follow magnet indication system
3	measuring range adjustment	10	indication part compl.
4	measuring spring -rods	11	coupling magnet
5	measuring chamber	12	float
6	closing screw - Transport-safety device G1/2"	13	zero point adjustment compl.
7	process connection - flow outlet	14	flow deflector

7. Output

Various electrical contact makers or converter may be installed in the indicator unit.

7.1 KEI 1 or KEI 2 limit switches

1 or 2 limit switches, type SJ 3,5N, make Pepperl + Fuchs to the connection to NAMUR electrical circuits to EN 60974-5-6. (special switch possible, e.g. SN version)

Technical data:

Safety class, SJ 3,5 N	PTB Nr. 99ATEX 2219 X
------------------------	-----------------------

7.2 Analog output with the ES magneto-electric transmitter

The magneto-electric transmitter is factory-calibrated to the scale values upon shipment. The signal output is supplied exclusively in a two-wire connection at 4-20 mA. Normally, the 4-20 mA signal has the HART[→] protocol; alternatively it can have PROFIBUS PA.

Additional options:

1-2 limit values.

The signal output and the limit values can be configured using a HART[→] modem operating on the following configuration programs: SensorPort from Bopp & Reuther, PDM from Siemens or AMS from Rosemount.

Furthermore, a HART[→] hand-held terminal (with DD software) can also be used.

For more information about configuration, please refer to the separate Operating Instructions for the ES.

Safety class: DMT 00 ATEX 075 / II 2G Ex ia IIC T6 Gb

When installing electrical equipment in hazardous areas, the conditions and provisions specified in the approval documents must be followed.

8. Characteristic values

Density of fluid:

700 – 1900 g/l

Measuring range:

50g/l ...600g/l

Measuring accuracy:

Measuring span	Measuring accuracy
50 g/l	± 1,25 g/l
100 g/l	± 2 g/l
200 g/l	± 3 g/l
300 g/l	± 4,5 g/l
600 g/l	± 6 g/l

Additional inaccuracy for:

ES = +/- 0.2%

Repeatability:

+/- 1 % of measuring span

Linearity:

+/- 1% of measuring span

Influence of ambient temperature

- Without electrical equipment and with limit switches without influence
- With ES transmitter:
+/- 0.5 % / 10 K reference temperature 22°C

Influence of fluid temperature

Deviations in fluid temperature from the temperature observed during calibration can result in a proportional display fault because of the corresponding change in density. Changes in viscosity cause a non-linear display.

9. Operating conditions

9.1 Fluid conditions

Liquids with:

- sufficient flow ability
- that are free of solids
- do not bond
- do not tend to settle

9.2 Mounting requirements,

The mounting location must be suitable for a horizontal direction of flow from left to right.

The limit values for temperature and air humidity at the mounting location must be maintained. Avoid corrosive atmospheres. If this cannot be avoided, ventilation must be installed.

Please make sure that there is adequate clearance from parts that might cause magnetic interferences such as solenoid valves and ferromagnetic components like steel brackets/supports. We recommend that the minimum lateral distance between two adjacently mounted devices be **300 mm**. The devices can be mounted close together if offset by one device length. The minimum lateral clearance for interfering steel parts should be **200 mm**. In case of doubt, check the interference by moving the device back and forth in the selected distance by about 200 mm and testing whether the pointer position changes.

Select the mounting location so as to enable a reliable reading of the scale values. Please take note as well of the space requirement for any possible disassembly of the device.

9.3 Transport safety

Process connection will be protected by yellow caps

The float will be protected by two transport locks in plastic during transportation and storage. This transport locks need to be changed before installation with two closing screws which are fixed at the body.

9.4 Mounting/start-up

The device must be mounted in horizontal direction of flow from left to right

The nominal size of the device and that of the pipes must be the same. The pressure stages and, hence, the dimensions of the flanges must coincide. The surface roughness of the flange-sealing surface must be suitable for the prescribed gaskets.

Check whether the mounting clearance between the flanges of the pipes corresponds to the assembly dimension of the device plus two gaskets. To achieve stress-free mounting, the connections of the pipes must be aligned parallel to the connections of the device.

Use connecting bolts and gaskets in the prescribed dimensions. The gaskets must be suitable for the operating pressure, the temperature and the measured medium

Tighten the screws crosswise so that the process connections are tight.

Please check whether the pipe is adequately stable to rule out the possibility of vibration or swinging of the device. (Do not use steel mounting parts on the device.)

The DWF-density meter be sensitive by dirt in fluids

If there is risk of dirt or solid matter penetrating the process pipes, flush them beforehand so that these materials do not get caught in the device. If these materials are still present during normal operating conditions, mount a filter in front of the device.

Especially Ferromagnetic solid matter such as spatter can lead to the breakdown of the device. If these materials are still present during normal operating conditions, mount a magnetic filter (accessory) in front of the device.

When using liquids, flush to avoid a surge of gas bubbles. Basically, avoid activation using solenoid valves to prevent the float from shooting upwards.

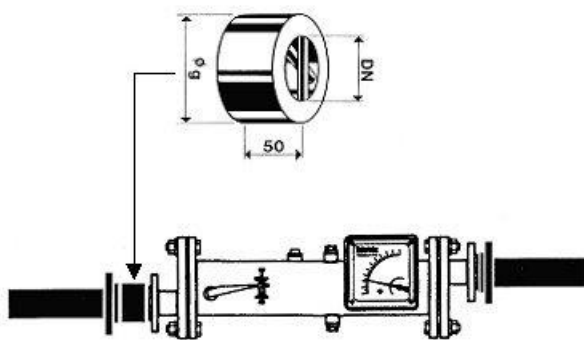
9.5 Magnetic filter

When dealing with flow media with ferrous particles, we recommend the connection of a magnetic filter.

To protect from corrosion, encapsulated permanent magnets are laid out in spiral form. The spiral mounting produces optimum effect at small pressure loss. The filter can be supplied with groove or tongue, projection or return, other standards or special connections according to customer wishes.

Dimension:

DN	g (mm)
25	68
50	102



9.6 Device settings

The measuring equipment is delivered ready for operation according to your order specifications.

The limit transducers are set to the desired values. If you have submitted no requirements, the basic setting for:

1 contact device: - Minimum contact switching point at 10% of descending density (damped / closed-circuit principle).

2 contact devices: Minimum contact switching point at 10% of descending density and maximum contact switching point at 90% of ascending density.

9.6.1 Adjusting the limit transducer

The contacts are adjustable through the contact position indicators located on the scale. Dismantle the indicator cover, unfasten the contact position indicators, set to the desired value and reattach them.

9.7 Ambient conditions

Ambient temperature ranges

Warning



Without electrical accessories:	-40 °C to + 80 °C
With limit transducer:	-40 °C to + 65 °C
With ES signal output:	-40 °C to + 70 °C

For the hazardous area version, take note of the maximum ambient temperatures depending on the temperature class as specified in the Type Examination Certificate.

Storage temperature



The storage temperature is identical to the ambient temperature ranges

Climatic category

Weather-protected and/or unheated locations, class C according to IEC 654 Part 1

Degree of protection

IP 65 (Aluminum indicator unit)

IP 67 (Stainless steel indicator unit)

Shock resistance/vibration resistance

Warning



The meter should be protected from extreme shocks and vibrations, which could cause damage.

9.8 Electromagnetic compatibility

EN 61000-6-2:2011

Immunity industrial environment

EN 61000-6-1:2007

Emitted interference residential environment

EN 55011:2011

Group 1, Class B

NAMUR recommendation

NE 21

10. Operation in hazardous areas

10.1 Without electrical equipment

The basic version of the density meter is a *non-electrical device* without its own ignition sources and meets DIN EN 13463-1 requirements. It can be used in hazardous areas that require Category 2 equipment.

Marking:  II 2G Ex h IIC TX Gb
II 2D Ex h IIIC TX°C Db

Reg. Nr.: BVS 03 ATEX H/B 112
Tech. File Ref. 03-02 X

Since the device does not have its own power sources that would result in a temperature increase, the fluid temperature is decisive for the maximum surface temperature.

When used in potentially explosive dust atmospheres, the device must be cleaned regularly in order to avoid deposits exceeding 5 mm.

10.2 With built-in electrical limit transducers

When the limit transducers are installed, the device becomes an electrical assembly and receives a marking in accordance with DIN EN 50014 from the entire device with the built-in electrical limit transducers. The electrical and thermal data and the special conditions of the EC Type Examination Certificate of the built-in limit transducers must be observed.

The influence of the fluid temperature on the built-in limit transducers must be observed. The over temperature of the maximum fluid temperature based on the maximum ambient temperature must be considered with a factor according 0,3.

10.2.1 Example for built-in limit transducer:

Max. ambient temperature $T_{amb} = 40^{\circ}\text{C}$
 Max. fluid temperature $T_m = 120^{\circ}\text{C}$
 Factor for brought-in heat $F = 0.3$
 Temperature class T4
 $T_{\ddot{u}} =$ Over temperature
 $T_a =$ Ambient temperature of limit transducer

$$T_{\ddot{u}} = T_m - T_{amb} = 120^{\circ}\text{C} - 40^{\circ}\text{C} = 80^{\circ}\text{C}$$

$$T_a = T_{\ddot{u}} * F + T_{amb} = 80^{\circ}\text{C} * 0,3 + 40^{\circ}\text{C} = 64^{\circ}\text{C}$$

In accordance with the tables in the PTB 99 ATEX 2219 X EC Type Examination Certificate, the SJ 3,5-... N... inductive sensor must be operated in the T5 temperature class with an intrinsically safe circuit that does not exceed the maximum values of the Type 3 circuit.

When using the device in hazardous areas, follow the applicable national installation rules.

10.2.2 Example for built-in sensor Type ES:

$$T_a = 70^{\circ}\text{C}$$

$$T_{\text{amb}} = 60^{\circ}\text{C}$$

$$F = 0.2$$

$$T_m = \left(\frac{T_a - T_{\text{amb}}}{F} \right) + T_{\text{amb}} = \left(\frac{70^{\circ}\text{C} - 60^{\circ}\text{C}}{0,3} \right) + 60^{\circ}\text{C} = 93^{\circ}\text{C}$$

10.3 Marking for the electric device

10.3.1 Marking when the SJ 3,5...N... limit transducer is mounted



PTB 99 ATEX 2219 X
II 2G Ex ia IIC T6-T4 Gb

10.3.2 Marking for the device when the ES magneto-electric transmitter is mounted



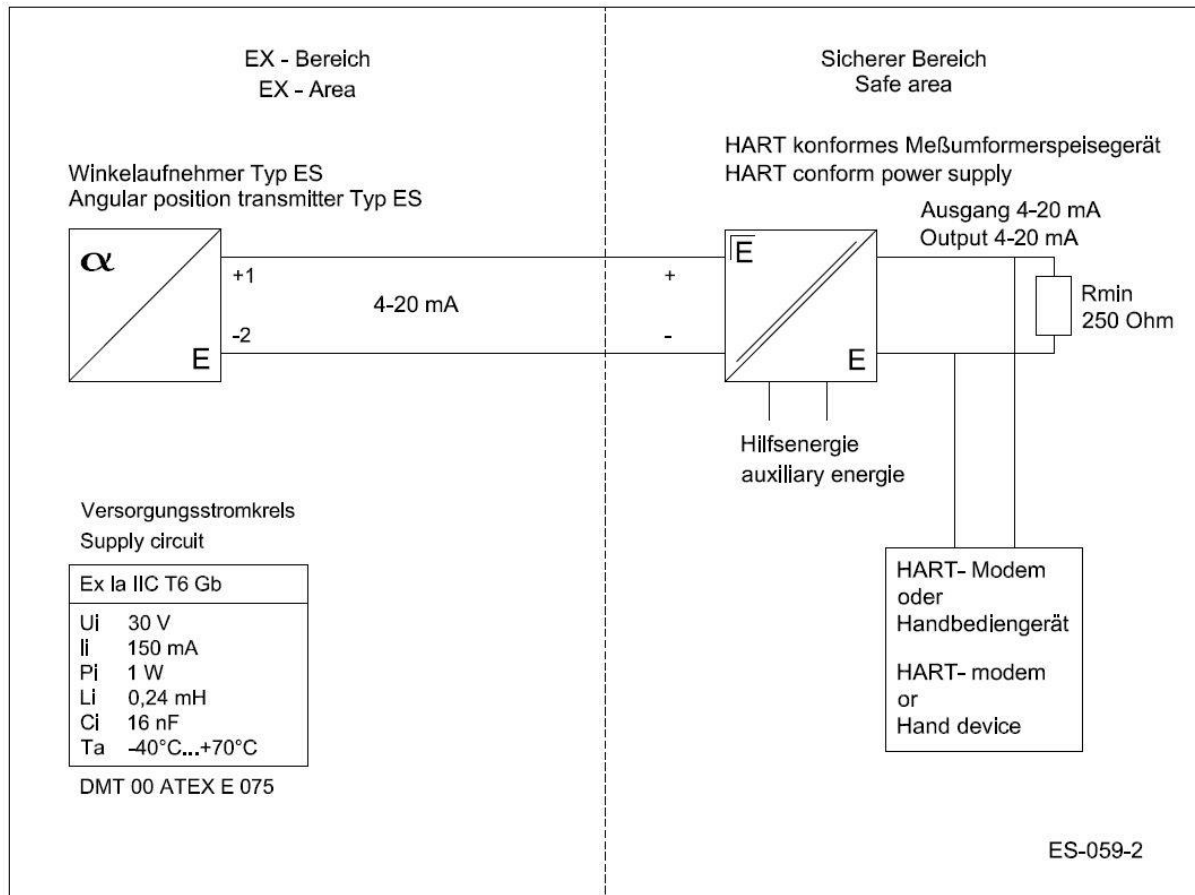
DMT 00 ATEX 075
II 2G Ex ia IIC T6 Gb

11. Electrical connection

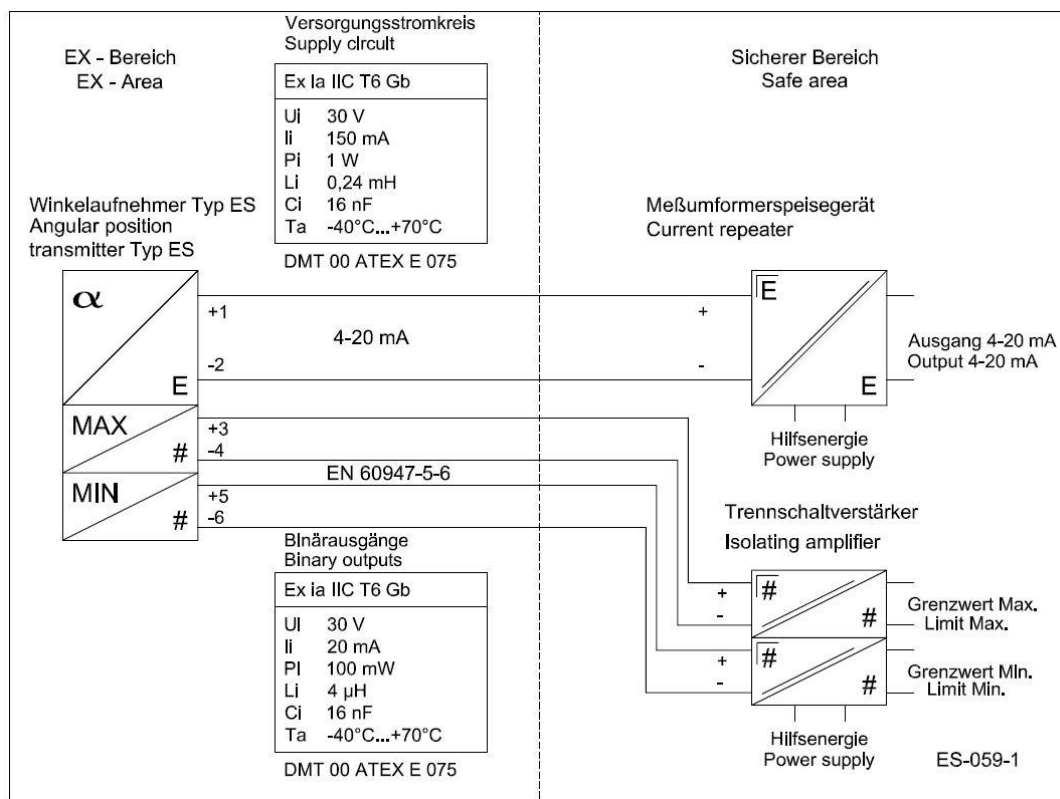
Wiring

To connect the auxiliary power, remove the indicator cover, insert the connector cable into the cable gland and attach it to the terminals according to terminal diagram. Tighten the cable gland securely, remount the indicator cover and close it tightly.

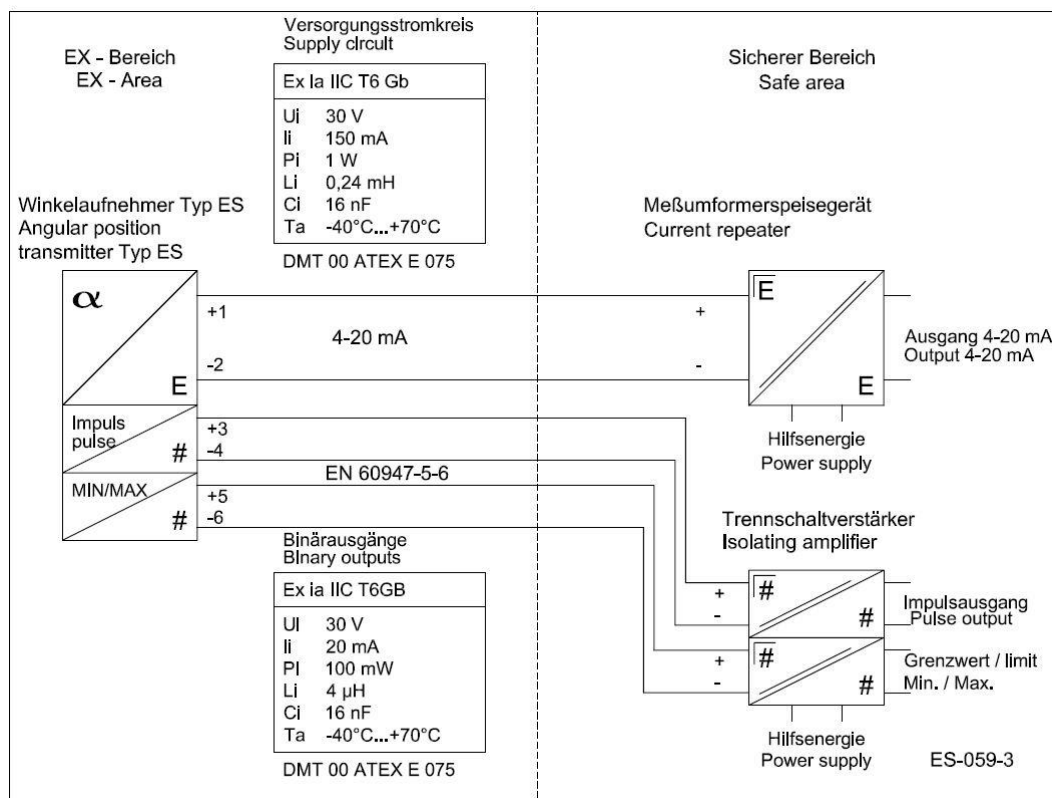
11.1 Wiring diagram for ES transmitter (signal output 4-20 mA with HART®)



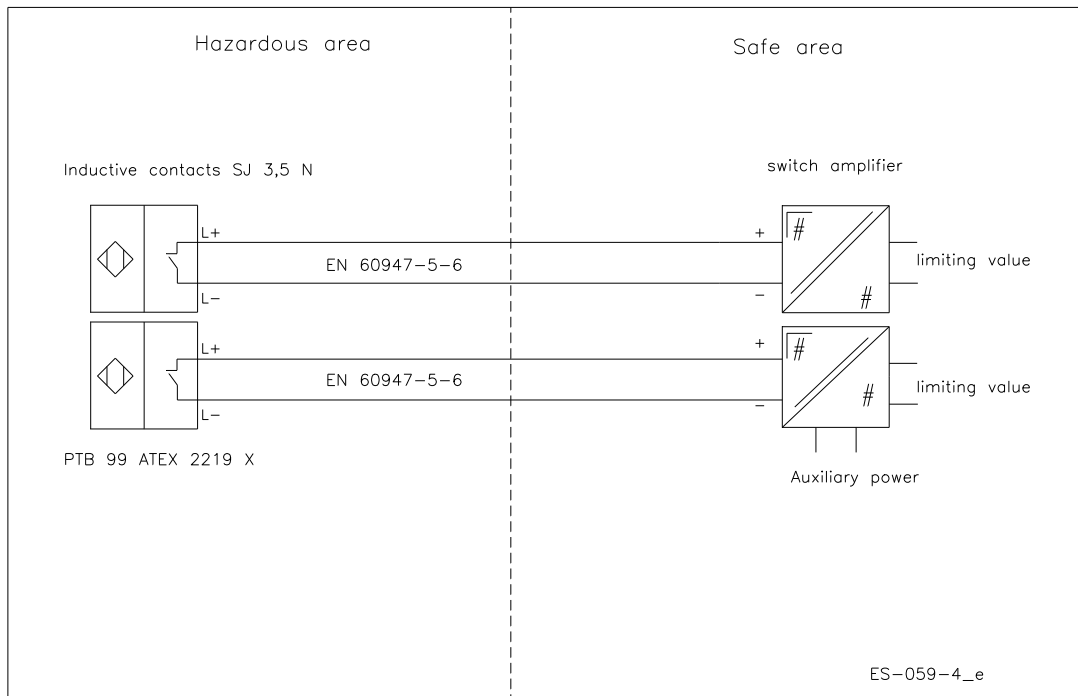
11.2 Wiring diagram for ES with 4-20 mA output and 2 limit contacts



11.3 Wiring diagram for ES with 4-20 mA output, pulse output and limit contacts



11.4 Wiring diagram for two inductive limit contacts



12. Indicator unit

- Analog indicator approx. 90° with pointer
- Customized product scale
- ES transmitter with freely programmable user interface
- Parameters may be changed based on the ES Operating Instructions.

13. Auxiliary power

see Electrical connection

14. CE mark

The measuring system meets the statutory requirements of the following EU directives: Directive 2014/34/EU (Equipment and Protective Systems for Use in Potentially Explosive Atmospheres), the Electromagnetic Compatibility (EMC) Directive 2014/30/EU and the Pressure Equipment Directive 2014/68/EU.

Measuring sensors with a connection nominal size equal to or smaller than or DN 25 fall within the scope of application of Article 4, Paragraph 3, of the Pressure Equipment Directive and need no CE mark in accordance with this directive.

Heinrichs Messtechnik confirms compliance with the directives by attaching the CE mark.

15. Order information

Please include the following information in your order:

Product data, medium, norm density, measuring span, temperature, pressure, viscosity, material design, connection size, desired accessories, required approvals and material certificates.

16. Accessories

- 1 or 2 inductive limit transducers
- ES electric transmitter, (HART→)
- ES electric transmitter, (PA)
- Stainless steel indicator unit, glass window IP 66
- Magnetic filter

17. Standards and directives, certificates and approvals

- Certified to DIN-EN 9001
- Production in accordance with AD guidelines and HPO approval (TRB200/TRD201)
- TÜV approval for welding requirements in accordance with DIN-EN 729-2
- Directive 2014/34/EU (Ex-Equipment Directive)
- Directive 2014/30/EU (EMC Directive)
- EN 61000-6-2:2011 – Immunity industrial environment
- EN 61000-6-1:2007 – Emitted interference residential environment
- EN 55011:2011 – Group 1, Class B
- NAMUR recommendation NE 21
- EN 60529 – Degrees of protection through housing (IP code)
- EN 61010 – Safety requirements for electrical measuring, control and laboratory devices
- EN 60947-5-6:2000 – Switchgear and control gear
- Directive 2014/68/EU (Pressure Equipment Directive)

Refer also to Declaration of Conformity in section 24

18. Safety advisories

18.1 Intended purpose

The DWF density-meter may be used only for density measurements of fluid media.
The manufacturer shall not be liable for damages that may result from unintended or inappropriate use.
When dealing with an aggressive medium, clarify the material durability of all wetted parts.
When using the device in hazardous areas, follow the applicable national installation rules.
The manufacturer accepts no responsibility for any damage or loss resulting from any other use or from improper use.

18.2 Installation, commissioning, operating personnel

Mechanical and electrical installation, as well as commissioning, maintenance and operation, are to be realized solely by qualified personnel that are authorized by the installation operator to perform such work. All such personnel must read and understand the content of the applicable operating instructions before working with the device.

19. Maintenance

The device requires no servicing insofar as it is operated in accordance with the manufacturer's recommendations. If, however, the measuring chamber or float needs to be cleaned, the service technician should take note of the following:

Warning:

- Before dismantling the device, check to ensure that all pipes and density-meter are devoid of media, have been depressurized, and have cooled down.
- The density meter can be emptied by the lower seal screw. The lower seal screw ideally is replaced by a suitable emptying device. This device will be closed 100% during normal operation.
- The inside of devices containing foreign matter should be cleaned carefully with a suitable cleaning agent. Respect not working with hard objects on the float and spring-rods.

20. Trouble shooting

- **Indicator window clouds over:** Water in the indicator unit.
- **Indicator cover is not tight enough:** Adjust the cover seal tighten the cover.
- **Window is opaque:** Corrosive atmosphere, ventilate.
- **Window ices over due to cold and damp atmosphere:** The device can be equipped at the factory with an air/nitrogen flush.
- **Window ices over due to very cold medium and damp atmosphere:** The device can be equipped at the factory with an air/nitrogen flush. Flush will be warming up
- **Device shows incorrect values:** Compare process data, density, viscosity, temperature and pressure with the values on the scale. If process data be correct contact our service office please
- **Pointer does not react in spite of varying density:** The pointer may have gotten stuck; remove the cover and move the pointer; if the pointer can be moved easily, the float cannot move. If the pointer is unable to move further, send the device to the head office for servicing.
- **The float is stuck at one place due to dirt:** Disassemble the device. If necessary, dismantle and clean the float. Install a magnetic filter if there are magnetic contaminants.
- **Float is stuck at one place:** Send the device to the head office for servicing.
- **Scale pointer pulsates:** When dealing with liquids, prevent pulsation of the product by using a volume receptacle. If necessary, have Heinrichs Messtechnik install a double eddy-current damping set.
- **Electrical equipment is not functioning:** Check the auxiliary power. Are suitable power supply equipment connected, have the terminals been selected correctly, has the parameterization carried out correctly?

21. Replacement parts

The following parts can be ordered as replacement parts:

- Indicator cover with window/gasket/screws
- Scale with standard scaling (required serial number)
- Pointer
- Limit value indicator
- Pointer stop
- Limit value initiator

22. Packaging, storage, transport

Carefully unpack the device to avoid damaging it.

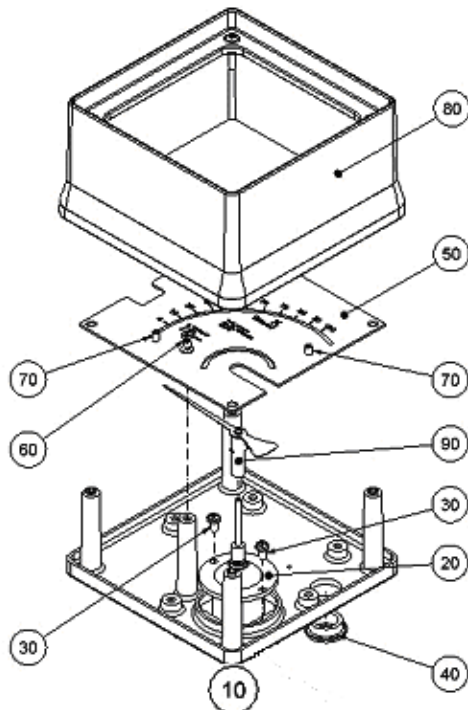
The float is secured against damage in transit. Remove this transport protection from the body and the openings will be closed with the enclosed seal screws

With the help of the delivery note enclosed in the packaging, check whether all technically relevant data coincide with your requirements.

Storage and installation must be done in a clean and dry room so that contamination – especially of the interior of the fitting – is avoided. Follow the limit values for ambient temperature. When transporting the device to a remote mounting location, we recommend that you reuse the factory-issued packaging and the transport protection.

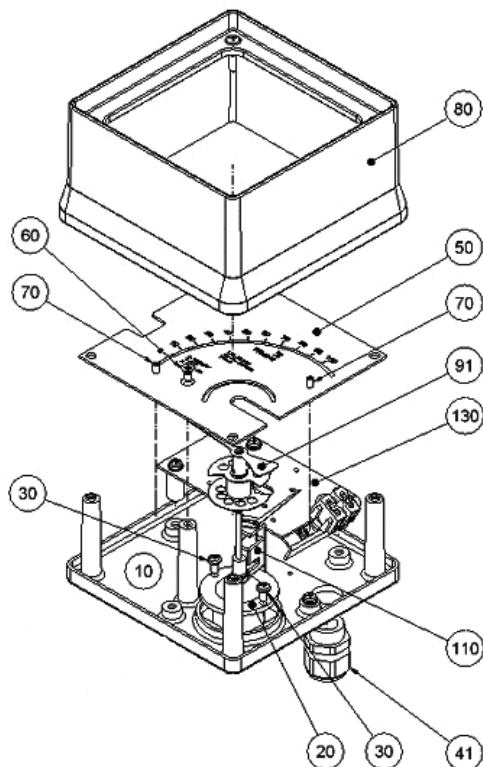
23. Exploded views

23.1 Complete indicator unit, local with scale

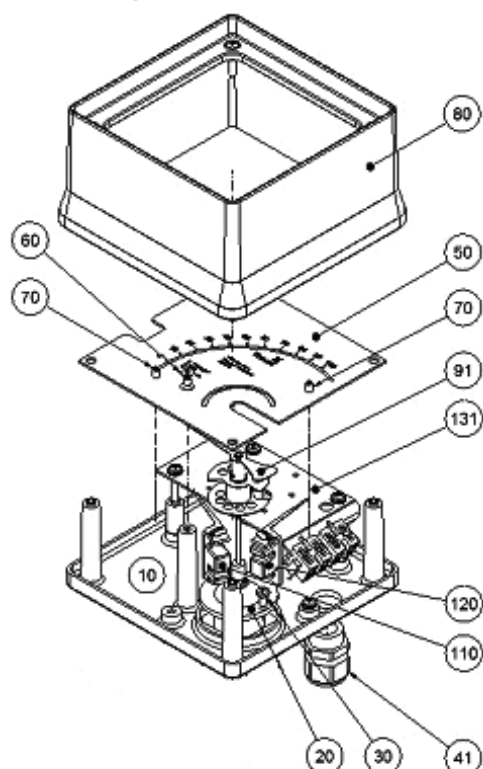


Name	Part no.
Mounting plate with 1 thread M 20 x 1.5	10
Bearing unit	20
Fixing screws for bearing unit	30
Dummy plug M 20 x 1.5	40
Cable gland	41
Scale, product scale according to original shipment (order no. necessary)	51
Screw for fixing the scale	60
Zero-point screw with nut	70
Indicator cover with glass window, gasket,	80
Scale pointer with hub	90
Scale pointer with hub and 2 switching dials	91
Scale pointer with hub and linearization disc	92
Scale pointer with hub and linearization	93
Scale pointer with hub and 2 switching dials and ES position magnet	94
1. SJ 3,5 N limit transducer with limit value	110
2. SJ 3,5 N limit transducer with limit value	120
Connection plate for 1 limit transducer with	130
Connection plate for 2 limit transducers with	131
Installation set transmitter ES Ex Hart	140

23.2 Complete indicator unit with 1 SJ 3,5 N limit transducer

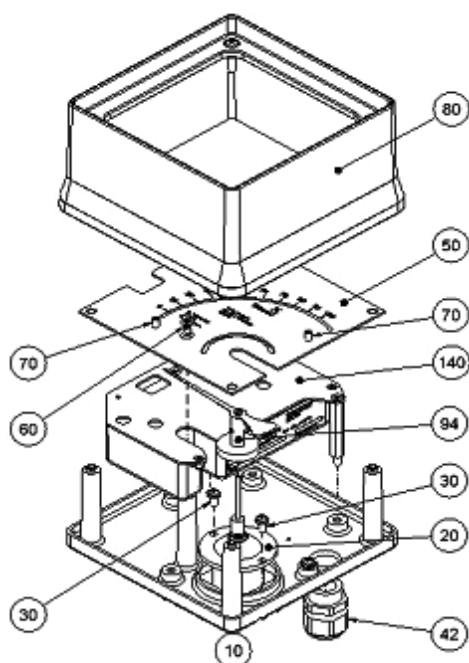


23.3 Complete indicator unit with 2 SJ 3,5 N limit transducers



Name	Part no.
Mounting plate with 1 thread M 20 x 1.5	10
Bearing unit	20
Fixing screws for bearing unit	30
Dummy plug M 20 x 1.5	40
Cable gland	41
Scale, product scale according to original shipment (order no. necessary)	51
Screw for fixing the scale	60
Zero-point screw with nut	70
Indicator cover with glass window, gasket, screws	80
Scale pointer with hub	90
Scale pointer with hub and 2 switching dials	91
Scale pointer with hub and linearization disc	92
Scale pointer with hub and linearization disc/switching dial	93
Scale pointer with hub and 2 switching dials and ES position magnet	94
1. SJ 3,5 N limit transducer with limit value indicator	110
2. SJ 3,5 N limit transducer with limit value indicator	120
Connection plate for 1 limit transducer with mounting parts	130
Connection plate for 2 limit transducers with mounting parts	131
Installation set transmitter ES Ex Hart	140

23.4 Indicator unit with transmitter type ES Ex HART→



24. Declaration of conformity

EU-Konformitätserklärung **EU-Declaration of Conformity**



Nº. 20.3982.01

Hersteller: Heinrichs Messtechnik GmbH
 Manufacturer: Robert-Perthel-Strasse 9
 50739 Köln

Produktbeschreibung: **Dichtemessgerät vom Typ DWF mit ES**
 Product description: **Density meter Model DWF with ES**

Hiermit erklären wir, in alleinige Verantwortung, dass das oben genannte Messsystem den Anforderungen der folgenden EU-Richtlinien, einschließlich allen bis heute veröffentlichten Änderungen bzw. Nachträgen entspricht:

We declare herewith, in sole responsibility, that the product described above is conform with the provisions of the following EU-directives, including all published changes and amendments as of today:

- | | |
|--------------------------|--|
| 2014/30/EU (EMC) | EU-Richtlinie über die Elektromagnetische Verträglichkeit
<i>EU-Directive relating to electromagnetic compatibility</i> |
| 2014/34/EU (ATEX) | EU-Richtlinie über Geräte zur Bestimmungsgemäße Verwendung in explosionsgefährdeten Bereichen.
<i>EU-Directive relating to electrical equipment intended for use in potentially explosive atmospheres</i> |
| 2014/35/EU (LVD) | EU-Richtlinie über die Bereitstellung elektrischer Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen auf dem Markt
<i>EU-Directive relating to the making available on the market of electrical equipment designed for use within certain voltage limits</i> |
| 2014/68/EU (PED) | EU-Richtlinie zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Druckgeräten auf dem Markt
<i>EU-Directive on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment</i> |

Anhang N und X sind ein integraler Bestandteil dieser Erklärung
Annex N and X are an integral part of this declaration

Köln, den 01.04.2020



Joseph Burke
 (Explosionsschutzbeauftragter /
 Explosion Protection Representative)



Michael Manderfeld
 (Druckgerätebeauftragter /
 PED Representative)



Guido Thometzki
 (Geschäftsführung / Managing Director)

Kontakt:
Contact:

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 Email: info@heinrichs.eu
 Web: www.heinrichs.eu

Konformitätserklärung-DWF_20-3982-01.docx

Seite 1 von 3



Anhang N zur EU-Konformitätserklärung Annex N of the EU-Declaration of Conformity



Nº. 20.3982.01

Produktbeschreibung: **Dichtemessgerät vom Typ DWF mit ES**
Product description: **Density meter Model DWF with ES**

Die Konformität mit den auf Seite 1 genannten Richtlinien diese Erklärung wird nachgewiesen durch die Einhaltung folgenden Normen (abhängig von Gerätvariant):
Conformity to the Directives referred to on Page 1 of this Declaration is assured through the application of the following standards (depending on version of device):

Richtlinie Directive	Norm –Ref. Nr. Standard / Ref. Nº.	Ausgabe Edition	Norm Beschreibung Standard Description	ES	DWF
	DIN EN -				
2014/30/EU	61000-6-2	2011-06	Immunity Industrial enviroment	X	
	61000-6-3	2012-11	Emission residential enviroment	X	
	55011	2011-04	Radio frequency disturbance	X	
	61326-1	2011-07	EMC requirements	X	
2014/34/EU	60079-0	2012+A11	General requirements	X	
	60079-11	2012	Intrinsic Safety „i“	X	
	80079-36	2016	General requirements non electrical devices		X
	80079-37	2016	Protection by constructional safety „c“		X
2014/35/EU	61010-1	2011-07	Safety requirements	X	
2014/68/EU	AD 2000-Merkblätter		Module H		X

X: Zutreffende Norm / Applicable Standard

Name und Anschrift der Notifizierte Stelle / Name and Address of the Notified Body

TÜV-SÜD Industrie Service GmbH
TÜV SÜD Gruppe
Westendstraße 199
D-80686 München
ID-Nr. / ID-Nº.: RL 2014/68/EU: 0036

DEKRA Testing and Certification GmbH
Carl-Beyling-Haus
Dinnendahlstraße 9
D-44809 Bochum
ID-Nr. / ID-Nº.: RL 2014/34/EU: 0158





**Anhang X zur EU-Konformitätserklärung
Annex X of the EU-Declaration of Conformity**



Nº. 20.3982.01

Produktbeschreibung: **Dichtemessgerät vom Typ DWF mit ES**
Product description: **Density meter Model DWF with ES**

Gerät Zulassungen / Device certification

EG-Baumusterprüfbescheinigung EC-type examination certificate	Nachtrag Supplement	Kennzeichnung Marking	ES	DWF	
DMT 00 ATEX E 075	2	II 2G	X		
BVS 03 ATEX H/B 112	1	II 2G II 2D		X	
Tech. File Ref.	-	03-02 X		X	

X: Zutreffende Norm / Applicable Standard

Konformitätserklärungen für die als Option verwendeten Schalter werden von der Hersteller auf deren Homepage bereitgestellt.

For proximity switches offered as an option in conjunction with the above-mentioned products, the Declarations of Conformity are provided by the switch manufacturer on their homepage.

Die oben genannten Produkte entsprechen der Richtlinie 2014/34/EU. Neue Editionen können bereits eine oder mehrere der in den jeweiligen EG-Baumusterprüfbescheinigungen genannten Normen ersetzt haben. Der Hersteller erklärt, dass alle Produkte erwähnt in dieser Konformitätserklärung auch der Anforderungen der neuen Editionen einhalten, weil die veränderten Anforderungen der neuen Editionen entweder keinen Einfluss auf das Produkt haben, oder das Produkt die Anforderungen erfüllt.

The above-mentioned products comply with the Directive 2014/34/EU. New editions may have already replaced one or more of the Standards stated in the respective EC-Type-examination certificates. The manufacturer declares that all products mentioned in this Declaration of Conformity also comply with the requirements of the new editions since either the changed requirements of the new editions do not affect the product, or the product also fulfills the requirements.

**Heinrichs Messtechnik
GmbH**

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<http://www.heinrichs.eu>
info@heinrichs.eu

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Konto-Nr. 0955 051300
IBAN :
DE58 3708 0040 0955 0513 00
SWIFT-BIC: DRES DE FF 370

**Erfüllungsort und
Gerichtsstand:**

Köln
Amtsgericht Köln HRA 37040
Ust.IDNr.: DE813416533
Steuer-Nr.: 217/5743/0386

Geschäftsführer

Dipl. Ing. (FH)
Guido Thometzki

26. Decontamination certificate for device cleaning

Company name:..... Address:.....

Department:..... Name (Contact):.....

Phone:

Information pertaining to the enclosed DWF

Model DWF.....

Was operated using the following fluid:

.....

In as much as this fluid is *:



☐
toxic



☐
health hazard-



☐
corrosive



☐
radioactive



☐
safe



☐
explosive



☐
combustible



☐
bio hazard

we have performed the following:

- Checked all cavities in the device to ensure that they are free of fluid residues* ☐
- Washed and neutralized all cavities in the device* ☐
- Cleaned all seals / gaskets and other components that come into contact with the fluid* ☐
- Cleaned the housings and all surfaces* ☐

*cross all applicable items.

We hereby warrant that no health or environmental hazard will arise from any fluid residues on or in the enclosed device.

Date: Signature:

Stamp