

Current terms and conditions apply.

Details are available on ...

Es gelten unsere aktuellen Verkaufs- und Lieferbedingungen siehe unter ...

Toute commande est assujettie à nos conditions de ventes et de fournitures dans leur dernière version en vigueur, voir sous ...

Se aplican nuestras condiciones actuales de venta y de suministro, que se pueden consultar en ...

www.wika.de

Operating instructions
Betriebsanleitung
Mode d'emploi
Manual de instrucciones

S-10, S-11

Pressure transmitter /
Druckmessumformer /
Transmetteur de pression /
Transmisor de presión



S-10



S-11

WIKA Alexander Wiegand SE & Co. KG

Alexander-Wiegand-Straße 30

63911 Klingenber/Germany

Tel +49 / (0) 93 72/132-295

Fax +49 / (0) 93 72/132-706

E-Mail support-tronic@wika.de

www.wika.de

WIKA

Part of your business

Contents	Page 3-18	GB
1.	Important details for your information	
2.	A quick overview for you	
3.	Signs, symbols and abbreviations	
4.	Function	
5.	For your safety	
6.	Packaging	
7.	Starting, operation	
8.	Adjustment of zero point / span	
9.	Maintenance, accessories	
10.	Trouble shooting	
11.	Storage, disposal	

Inhalt	Seite 19-34	D
1.	Wichtiges zu Ihrer Information	
2.	Der schnelle Überblick für Sie	
3.	Zeichenerklärungen, Abkürzungen	
4.	Funktion	
5.	Zu Ihrer Sicherheit	
6.	Verpackung	
7.	Inbetriebnahme, Betrieb	
8.	Einstellung Nullpunkt / Spanne	
9.	Wartung, Zubehör	
10.	Störbeseitigung	
11.	Lagerung, Entsorgung	

Contenu	Page 35-50	F
1.	Informations importantes	
2.	Aperçu rapide	
3.	Explication des symboles, abréviations	
4.	Fonction	
5.	Pour votre sécurité	
6.	Emballage	
7.	Mise en service, exploitation	
8.	Réglage du zéro / gain	
9.	Entretien, accessoires	
10.	Elimination de perturbations	
11.	Stockage, mise au rebut	

Contenido	Paginás 51-66	E
1.	Detalles importantes para su información	
2.	Resumen rápido para usted	
3.	Signos, símbolos y abreviaciones	
4.	Función	
5.	Para su seguridad	
6.	Embalaje	
7.	Puesta en servicio, funcionamiento	
8.	Ajuste de cero / margen	
9.	Mantenimiento, accesorios	
10.	Eliminación de perturbaciones	
11.	Almacenaje, eliminación de desechos	

1. Important details for your information

Read these operating instructions before installing and starting the pressure transmitter. Keep the operating instructions in a place that is accessible to all users at any time.

The following installation and operating instructions have been compiled by us with great care but it is not feasible to take all possible applications into consideration. These installation and operation instructions should meet the needs of most pressure measurement applications. If questions remain regarding a specific application, you can obtain further information:

- Via our Internet address www.wika.de / www.wika.com
- The product data sheet is designated as PE 81.01
- Contact WIKA for additional technical support (+49) 9372 / 132-295

With special model number, e.g. S-10000 or S-11000, please note specifications in the delivery note.

If the serial number and/or the 2D code on the hexagon gets illegible (e.g. by mechanical damage or repainting), the retraceability of the instrument is not possible any more.

WIKA pressure transmitters are carefully designed and manufactured using state-of-the-art technology. Every component undergoes strict quality and environmental inspection before assembly and each instrument is fully tested prior to shipment. Our environmental management system is certified to DIN EN ISO 14001.

Use of the products in accordance with the intended use:

Use the pressure transmitter to transform the pressure into an electrical signal.

Knowledge required

Install and start the pressure transmitter only if you are familiar with the relevant regulations and directives of your country and if you have the qualification required. You have to be acquainted with the rules and regulations on measurement and control technology and electric circuits, since this pressure transmitter is „electrical equipment“ as defined by EN 50178. Depending on the operating conditions of your application you have to have the corresponding knowledge, e.g. of aggressive media.

2. A quick overview for you

If you want to get a quick overview, read **Chapters 3, 5, 7 and 11**. There you will get some short safety instructions and important information on your product and its starting. **Read these chapters in any case.**

3. Abbreviations, signs and symbols



Potential danger of life or of severe injuries.



Potential danger of life or of severe injuries due to catapulting parts.



Potential danger of burns due to hot surfaces.



Notice, important information, malfunction.



The product complies with the applicable European directives.



CSA
Canadian Standard Association

The product was tested and certified by CSA International. It complies with the applicable Canadian standards on safety.

2-wire Two connection lines are intended for the voltage supply.
The supply current is the measurement signal.

3-wire Two connection lines are intended for the voltage supply.
One connection line is intended for the measurement signal.

U+ Positive supply connection

U- Negative supply connection

S+ Positive measurement connection

4. Function

S-10: Pressure connection with internal diaphragm(standard version).

S-11: Pressure connection with flush diaphragm for highly viscous or solids entrained media which might clog the pressure port.

Function

The pressure prevailing within the application is transformed into a standardised electrical signal through the deflection of the diaphragm, which acts on the sensor element with the power supply fed to the transmitter. This electric signal changes in proportion to the pressure and can be evaluated correspondingly.

5. For your safety



Select the appropriate pressure transmitter with regard to scale range, performance and specific measurement conditions prior to installing and starting the instrument.

Observe the relevant national regulations (e.g.: EN 50178) and observe the applicable standards and directives for special applications (e.g. with dangerous media such as acetylene, flammable gases or liquids and toxic gases or liquids and with refrigeration plants or compressors). **If you do not observe the appropriate regulations, serious injuries and/or damage can occur!**

Open pressure connections only after the system is without pressure!

Please make sure that the pressure transmitter is only used within the overload threshold limit all the time!

Observe the ambient and working conditions outlined in section 7 „Technical data”.

Observe the technical data for the use of the pressure transmitter in connection with aggressive / corrosive media and for the avoidance of mechanical hazards.

Ensure that the pressure transmitter is only operated in accordance with the provisions i.e. as described in the following instructions.

Do not interfere with or change the pressure transmitter in any other way than described in these operating instructions.

Remove the pressure transmitter from service and mark it to prevent it from being used again accidentally, if it becomes damaged or unsafe for operation

Take precautions with regard to remaining media in removed pressure transmitter. Remaining media in the pressure port may be hazardous or toxic!

Have repairs performed by the manufacturer only.
Open circuit before removing connector / cover.

6. Packaging

Has everything been supplied?



Check the scope of supply:

- Completely assembled pressure transmitters.
- With flush version (S-11) including pre-assembled sealings and protection cap.
- Inspect the pressure transmitter for possible damage during transportation. Should there be any obvious damage, inform the transport company and WIKA without delay.
- Keep the packaging, as it offers optimal protection during transportation (e.g. changing installation location, shipment for repair).
- Ensure that the pressure connection thread and the connection contacts will not be damaged.

In order to protect the diaphragm, the pressure connection of the instrument S-11 is provided with a special protection cap.



- Remove this protection cap by hand only just before installing the pressure transmitter in order to prevent any damage to the diaphragm or the thread.
- Keep the protection cap of the pressure connection thread and the diaphragm for later storage or transport.
- Mount the protection cap when removing and transporting the instrument.

7. Starting, operation



Required tools: wrench (flats 27), screw driver

Diaphragm test for your safety

It is necessary that before starting the pressure transmitter you test the diaphragm visually, as this is a **safety-relevant component**.



Warning

- Pay attention to any liquid leaking out, for this points to a diaphragm damage.
- Check the diaphragm visually for any damage (S-11).
- Use the pressure transmitter only if the diaphragm is undamaged.
- Use the pressure transmitter only if it is in a faultless condition as far as the safety-relevant features are concerned.

Mechanical connection



Generally the serial number on the product label applies. If there is no serial number on the product label, the number on the hexagon will apply.



- Remove the protection cap by hand only just before installation and absolutely avoid any damage to the diaphragm during installation as well (S-11).
- For Model S-10 you have to provide for a sealing element; exceptions are instruments with self-sealing threads (e.g. NPT thread). For Model S-11 the sealing is included in delivery.
- Please refer to our data sheet "Pressure gauge sealing washers AC 09.08" in WIKA's product catalog Pressure and Temperature Measurement or our website www.wika.de for details about sealing washers.
- When mounting the instrument, ensure that the sealing faces of the instrument and the measuring point are clean and undamaged.
- Screw in or unscrew the instrument only via the flats using a suitable tool and the prescribed torque. The appropriate torque depends on the dimension of the pressure connection and on the sealing element used (form/material). Do not use the case as working surface for screwing in or unscrewing the instrument.
- When screwing the transmitter in, ensure that the threads are not jammed.
- For tapped holes and welding sockets please see Technical Information IN 00.14 for download at www.wika.de - Download

Product label (example)



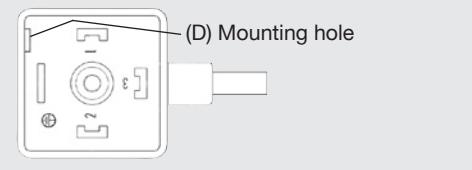
Signal	DC 10 ... 30 V	1 + 2 -
Power Supply		
S #	Serial No.	
P #	Product No.	
	PIN assignment	
	Coded manufacture date	

Electrical connection

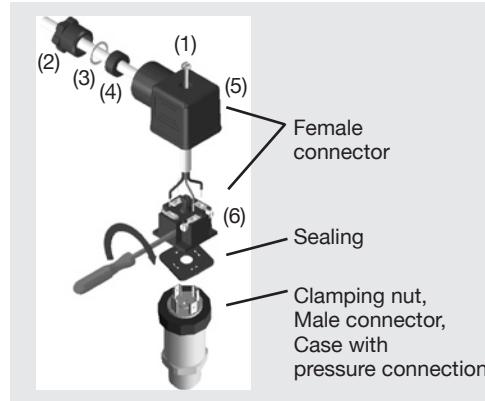
- i** ■ Connect the instrument to earth via the pressure connection.
- For transmitter with voltage output signal: Operate the pressure transmitter with a shielded cable and earth the shield at least on one side of the cable, if the cable is longer than 30 m or if it is run outside of the building.
- For North America: The connection shall be made to „Class 2 Circuits“ or „Class 2 Power Units“ according to CEC (Canadian Electrical Code) or NEC (National Electrical Code).
- Ingress protection per IEC 60529 (The ingress protection classes specified only apply while the pressure transmitter is connected with female connectors that provide the corresponding ingress protection).
- Ensure that the cable diameter you select fits to the cable gland of the connector. Ensure that the cable gland of the mounted connector is positioned correctly and that the sealings are available and undamaged. Tighten the threaded connection and check the correct position of the sealings in order to ensure the ingress protection.
- Please make sure that the ends of cables with flying leads do not allow any ingress of moisture.

Electrical connections

	L-connector DIN 175301-803 A	Circular connector M12x1	Flying leads with 1.5 m of cable
2-wire		U+ = 1 U- = 2	U+ = brown U- = green
3-wire	U+ = 1 U- = 2 S+ = 3	U+ = 1 U- = 3 S+ = 4	U+ = brown U- = green S+ = white
Cable screen			grey
Wire gauge	up to max. 1.5 mm ²	-	0.5 mm ² (AWG 20)
Diameter of cable	6-8 mm (ship approval: 10-14 mm)	-	6.8 mm
Ingress protection per IEC 60 529	IP 65	IP 67	IP 67 or IP 68
	The ingress protection classes specified only apply while the pressure transmitter is connected with female connectors that provide the corresponding ingress protection.		

Assembly of L-connector DIN EN 175301-803 Form A

(D) Mounting hole



1. Loosen the screw (1).
2. Loosen the cable gland (2).
3. Pull the angle housing (5), with the terminal block (6) inside, away from the instrument.
4. Using the head of a small screwdriver in the mounting hole (D), lever the terminal block (6) out of the angle housing (5).
In order not to damage the sealing of the angle housing, do not try to push the terminal block (6) out using the screw hole (1) or the cable gland (2).
5. Ensure that the conductor outer diameter you select is matched to the angle housing's cable gland. Slide the cable through the cable gland nut (2), washer (3), gland seal (4) and angle housing (5).
6. Connect the flying leads to the screw terminals on the terminal block (6) in accordance with the pin-assignment drawing.
7. Press the terminal block (6) back into the angle housing (5).
8. Tighten the cable gland (2) around the cable. Make sure that the sealing isn't damaged and that the cable gland and seals are assembled correctly in order to ensure ingress protection.
9. Place the flat, square gasket over the connection pins on the top of the instrument housing.
10. Slide the terminal block (6) onto the connection pins.
11. Secure the angle housing (5) and terminal block (6) to the instrument with the screw (1).

Specifications**Model S-10, S-11**

Pressure ranges	bar	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10	16
Over pressure safety	bar	1	1.5	2	2	4	5	10	10	17	35	35	80
Burst pressure	bar	2	2	2.4	2.4	4.8	6	12	12	20.5	42	42	96
Pressure ranges	bar	25	40	60	100	160	250	400		600		1000 ¹⁾	
Over pressure safety	bar	50	80	120	200	320	500	800		1200		1500	
Burst pressure	bar	96	400	550	800	1000	1200	1700 ²⁾		2400 ²⁾		3000	
Pressure ranges	psi	50 INWC	100 INWC	5	10	15	25	30	60	100			
Over pressure safety	psi	14.5		29		29	58	72	145	145	240	500	
Burst pressure	psi	29		35		35	69	87	170	170	290	600	
Pressure ranges	psi	200		300		500	600	1000		1500		2000	
Over pressure safety	psi	1160		1160		1160	1160	1740		2900		4600	
Burst pressure	psi	1390		1390		5800	5800	7970		11,600		14,500	
Pressure ranges	psi	3000		5000		8000		10,000 ¹⁾		15,000 ¹⁾			
Over pressure safety	psi	7200		11,600		17,400		17,400		21,750			
Burst pressure	psi	17,400		24,650 ²⁾		34,800 ²⁾		34,800		43,500			

{Vacuum, gauge pressure, compound range, absolute pressure are available}.

¹⁾ Only model S-10.²⁾ For model S-11: The value specified in the table applies only when sealing is realised with the sealing ring underneath the hex. Otherwise max. 1,500 bar / 21,000 psi applies.**Materials**

■ Wetted parts	(Other materials see WIKA diaphragm seal program)
» Pressure connection	316 Ti, S-11: O-ring: NBR ³⁾ {FPM/FKM}
» Pressure sensor	316 Ti (as of 40 bar / 600 psi 13-8 PH)
■ Case	Stainless steel
Internal transmission fluid ⁴⁾	Synthetic oil

³⁾ O-ring made of FPM/FKM for model S-11 with integrated cooling element.⁴⁾ Not for model S-10 with pressure ranges > 25 bar / 300 psi

Specifications			Model S-10, S-11		
■ Power supply U+	UB in VDC	10 < U+ ≤ 30 (14 ... 30 with signal output 0 ... 10 V)			
Signal output and maximum ohmic load RA	RA in Ohm	4 ... 20 mA, 2-wire 0 ... 20 mA, 3-wire 0 ... 5 V, 3-wire 0 ... 10 V, 3-wire	RA ≤ (U+ - 10 V) / 0.02 A RA ≤ (U+ - 3 V) / 0.02 A RA > 5000 RA > 10000		
		{Other signal output on request}			
Adjustability zero/span	%	± 5 using potentiometers inside the instrument			
Response time (10 ... 90 %)	ms	≤ 1 (≤ 10 ms at medium temperatures below <-30 °C (-22°F) for pressure ranges up to 25 bar / 300 psi or with flush diaphragm (S-11).			
Insulation voltage	VDC	500 ⁵⁾	Use NEC Class 02 power supply (low voltage and low current max. 100 VA even under fault conditions)		
Accuracy	% of span	≤ 0.25 {0.125} ⁶⁾ (BFSL) ≤ 0.5 ⁷⁾ {0.25} ^{6) 7)}			
		6) Accuracy { } for pressure ranges ≥ 0.25 bar (100 INWC).			
		7) Including non-linearity, hysteresis, zero point and full scale error (corresponds to error of measurement per IEC 61298-2).			
		Adjusted in vertical mounting position with lower pressure connection.			
Non-linearity	% of span	≤ 0.2 (BFSL) according to IEC 61298-2			
Non-repeatability	% of span	≤ 0.1 according to IEC 61298-2			
1-year stability	% of span	≤ 0.2 (at reference conditions)			
Permissible temperature of					
■ Medium		-30 ... +100 °C	-22 ... +212 °F		
		{-40 ... +125 °C}	{-40 ... +257 °F}		
» S-11 with cooling element		{-20 ... +150 °C}	{-4 ... +302 °F}		
■ Ambience		-20 ... +80 °C	-4 ... +176 °F		
» S-11 with cooling element		-20 ... +80 °C	-4 ... +176 °F		

Specifications			Model S-10, S-11		
■ Storage			-40 ... +100 °C	-40 ... +212 °F	
» S-11 with cooling element			-20 ... +100 °C	-4 ... +212 °F	
Rated temperature range			0 ... +80 °C	32 ... +176 °F	
Temperature coefficients within rated temperature range					
■ Mean TC of zero	% of span	≤ 0.2 / 10 K (< 0.4 for pressure range ≤ 0.25 bar (100 INWC))			
■ Mean TC of range	% of span	≤ 0.2 / 10 K			
CE- conformity					
■ Pressure equipment directive		97/23/EC			
■ EMC directive		2004/108/EC, EN 61 326 Emission (Group 1, Class B) and Immunity (industrial locations)			
Shock resistance	g	1000 according to IEC 60068-2-27 (mechanical shock)			
Vibration resistance	g	20 according to IEC 60068-2-6 (vibration under resonance)			
Wiring protection					
■ Short-circuit proofness		S+ towards U-			
■ Reverse polarity protection		U+ towards U-			
Weight	kg	Approx. 0.2 (approx. 0.4 lb) Approx. 0.3 with option accuracy 0.25% of span due to longer case			

{ } Items in curved brackets are optional extras for additional price.

Specifications Oxygen version of model S-10

Pressure ranges	bar	As of 0 ... 0.1 / 50 INWC
Type of pressure		Gauge pressure
Materials		
■ Wetted parts		316 Ti (up to 40 bar / 600 psi F 1058)
Internal transmission fluid ¹⁾		Halocarbon oil
		¹⁾ Not for model with pressure ranges > 25 bar / 300 psi
Permissible temperature of		
■ Medium	-20 ... +60 °C	-4 ... +140 °F

i When designing your plant, take into account that the stated values (e.g. burst pressure, over pressure safety) apply depending on the material, thread and sealing element used.

Functional test

i The output signal must be proportional to the pressure. If not, this might point to a damage of the diaphragm. In that case refer to chapter 10 „Troubleshooting“.



Warning

- Open pressure connections only after the system is without pressure!
- Observe the ambient and working conditions outlined in section 7 „Technical data“.
- Please make sure that the pressure transmitter is only used within the over-load threshold limit at all times!



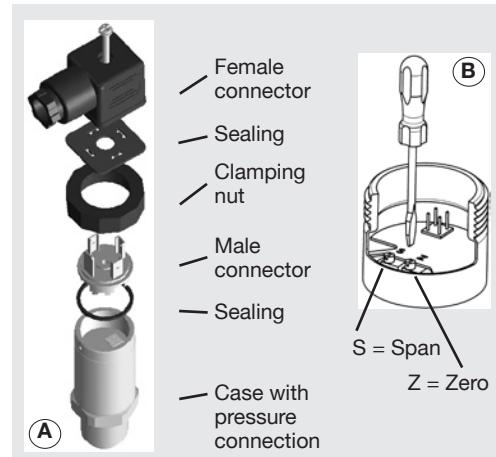
Caution

When touching the pressure transmitter, keep in mind that the surfaces of the instrument components might get hot during operation.

8. Adjustment of zero point / span (only for pressure transmitter with clamping nut)

We do not recommend to adjust the span potentiometer. It is used for adjustment ex factory and should not be adjusted by you unless you have adequate calibration equipment at your disposal (at least three times more accurate than the instrument being tested).

- Make sure wires are not cut or pinched during disassembly and reassembly of the connector.
- Remove the female connector. Open the pressure transmitter by detaching the clamping nut (see Fig. A). Carefully remove the male connector from the case.
- Adjust the zero point (Z) (see Fig. B) by generating the lower limit of the pressure range.
- Adjust the span (S) by generating the higher limit of the pressure range.
- Check the zero point.
- If the zero point is incorrect, repeat procedure as required.
- Reassemble the instrument carefully.
- Make sure all sealings and o-rings are not damaged and correctly installed to assure the rated moisture ingress protection.



Recommended recalibration cycle: yearly



For further information (+49) 9372/132-295

9. Maintenance, accessories

-  WIKA pressure transmitters require no maintenance.
- Have repairs performed by the manufacturer only.

Accessories

For details about the accessories (e. g. connectors), please refer to WIKA's price list, WIKA's product catalog on CD or contact our sales department.

10. Trouble shooting



Open pressure connections only after the system is without pressure!

-  Take precautions with regard to remaining media in removed pressure transmitters. Remaining media in the pressure port may be hazardous or toxic!
- Remove the pressure transmitter from service and mark it to prevent it from being used again accidentally, if it becomes damaged or unsafe for operation.
- Have repairs performed by the manufacturer only.

-  Do not insert any pointed or hard objects into the pressure port for cleaning to prevent damage to the diaphragm of the pressure connection.

Please verify in advance if pressure is being applied (valves/ ball valve etc. open) and if the right voltage supply and the right type of wiring (2-wire/ 3-wire) has been chosen?

Failure	Possible cause	Procedure
No output signal	Cable break No/incorrect voltage supply or current spike	Check connections and cable Adjust the voltage supply to correspond with the Operating Instructions *)
No/False output signal	Incorrectly wired (e.g. Connected as 2-wire instead of 3-wire system)	Follow pin assignment (see Instrument Label / Operating Instructions)
Output signal unchanged after change in pressure	Mechanical overload through over-pressure	Replace instrument; if failure reoccurs, consult the manufacturer *)
Signal span dropping off/too small	Mechanical overload through over-pressure Diaphragm is damaged, e.g. through impact, abrasive/aggressive media; corrosion of diaphragm/pressure connector; transmission fluid missing. Seal/Sealing face damaged/contaminated, seal mounted incorrectly, threads crossed	Replace instrument; if failure reoccurs, consult the manufacturer *) Contact the manufacturer and replace the instrument Clean the seal/sealing face, possibly replace the seal.
Signal span erratic / incorrect	Electromagnetic interference source in the vicinity, e.g. inverter drive Working temperature too high/too low	Shield the device; shield the cables; remove the interference source Ensure permissible temperatures as per the Operating Instructions
Instrument not grounded	Violent fluctuations in the process media pressure	Ground instrument Damping; consult with manufacturer
Abnormal zero point signal	Working temperature too high/too low Abnormal mounting position Overload limits exceeded	Ensure permissible temperatures as per the Operating Instructions Correct the zero point through the potentiometer, control panel or software Ensure permissible overload limits are observed (see Operating Instructions *)

In case of unjustified reclamation we charge the reclamation handling expenses.

*) Make sure that after the setting the unit is working properly. In case the error continues to exist send in the instrument for reparation (or replace the unit).

If the problem persists, contact our sales department.

USA, Canada

If the problem continues, contact WIKA or an authorized agent for assistance. If the pressure transmitter must be returned obtain an RMA (return material authorization) number and shipping instructions from the place of purchase. Be sure to include detailed information about the problem. Pressure transmitters received by WIKA without a valid RMA number will not be accepted.

Process material certificate (Contamination declaration for returned goods)

Purge / clean dismounted instruments before returning them in order to protect our employees and the environment from any hazard caused by adherent remaining media.

Service of instruments can only take place safely when a Product Return Form has been submitted and fully filled-in. This Return Form contains information on all materials with which the instrument has come into contact, either through installation, test purposes, or cleaning. You can find the Product Return Form on our internet site (www.wika.de / www.wika.com).

11. Storage, disposal



Storage

i Mount the protection cap when storing the pressure transmitter in order to prevent any damage to the diaphragm (S-11).

Disposal

i Dispose of instrument components and packaging materials in accordance with the respective waste treatment and disposal regulations of the region or country to which the instrument is supplied.

WIKA reserves the right to alter these technical specifications.

1. Wichtiges zu Ihrer Information

Lesen Sie diese Betriebsanleitung vor Montage und Inbetriebnahme des Druckmessgerätes. Bewahren Sie die Betriebsanleitung an einem für alle Benutzer jederzeit zugänglichen Ort auf. Die nachfolgenden Einbau- und Betriebshinweise haben wir mit Sorgfalt zusammengestellt. Es ist jedoch nicht möglich, alle erdenklichen Anwendungsfälle zu berücksichtigen. Sollten Sie Hinweise für Ihre spezielle Aufgabenstellung vermissen, können Sie hier weitere Informationen finden:

- Über unsere Internet-Adresse www.wika.de / www.wika.com
- Die Bezeichnung des zugehörigen Datenblattes ist PE 81.01
- Anwendungsberater: (+49) 9372/132-295

Bei Sondertypennummer, z.B. S-10000 oder S-11000, beachten Sie die Spezifikationen gemäß Lieferschein.

Wird die Seriennummer und/oder der 2D-Code auf dem Sechskant unleserlich (z. B. durch mechanische Beschädigung oder Übermalen), ist eine Rückverfolgbarkeit nicht mehr möglich. Die in der Betriebsanleitung beschriebenen WIKA-Druckmessgeräte werden nach den neuesten Erkenntnissen konstruiert und gefertigt. Alle Komponenten unterliegen während der Fertigung strengen Qualitäts- und Umweltkriterien. Unser Umweltmanagementsystem ist nach DIN EN ISO 14001 zertifiziert.

Bestimmungsgemäße Produktverwendung

Verwenden Sie den Druckmessumformer, um Druck in ein elektrisches Signal zu wandeln.

Ihre erforderlichen Kenntnisse

Montieren und nehmen Sie das Druckmessgerät nur in Betrieb, wenn Sie mit den zutreffenden landesspezifischen Richtlinien vertraut sind und die entsprechende Qualifikation besitzen. Sie müssen mit den Kenntnissen von Mess- und Regeltechnik sowie elektrischen Stromkreisen vertraut sein, da das Druckmessgerät ein „elektrisches Betriebsmittel“ nach EN 50178 ist. Je nach Einsatzbedingung müssen Sie über entsprechendes Wissen verfügen, z. B. über aggressive Medien bzw. hohe Drücke.

2. Der schnelle Überblick für Sie

Wollen Sie sich einen schnellen Überblick verschaffen, lesen Sie **Kapitel 3, 5, 7 und 11**. Dort erhalten Sie kurze Hinweise zu Ihrer Sicherheit und wichtige Informationen über Ihr Produkt und zur Inbetriebnahme. **Lesen Sie diese unbedingt.**