Bar graph displays

- For process control, automation, and laboratory applications
- Current, voltage, resistance, frequency and temperature
- Up to 0.5% resolution

metrix electronics

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GMW GOSSEN Müller & Weigert

DINALOG A 96 x 24

Programmable quasi-analogue bar graph meters

Single channel meters with a LED light bar and additional digital display.

For DC and AC current and voltage, temperature and resistance measuring ranges. Models with two limits are available.

The limits are displayed simultaneously with the measured value on the light bar.

If a limit is exceeded, this is signalled via relay contacts on the rear side and by an LED on the scale.

All measured values at a glance

- Precise values due to additional digital display
- High-contrast LED displays
- High legibility, wide viewing angle
- Measurement circuit galvanically isolated from the power supply
- Front dimensions: 96 x 24 mm
- Front protection to IP65
- Small installation depth of less than 127 mm
- Quick installation due to slider mount for all control panel thicknesses
- Pre-wiring is possible due to plug in screw terminal blocks

These measuring instruments are suitable for all applications in which several measured values must be monitored simultaneously.

Due to high legibility, you have a good overview of important measured values at a glance, even in unfavourable light conditions.

Each meter can be configured to suit the respective measurement application, by means of various measurement modules.

With their high-contrast LED display, these meters are a good alternative to conventional analogue displays, or liquid crystal bar graph displays.

The LED light bar with 35 segments shows you the measured value with a resolution of 3%, on a scale which is 45 mm in length. By means of the additional polarity indicator, you can also use the full display range for bipolar measurement.

Simple programming with the three buttons enables you to adjust the display range on site.

Regulations and standards

Our bar graph displays comply with the regulations defined by the European Directives 73/23/EEC and 89/336/EEC, as verified by compliance with the following standards:
DIN/IEC 61 554 (housing)
IEC/EN 61 010-1:2001, VDE 0411 Part 1 (safety regulations)
IEC/EN 61 326-1/+A1 (interference resistance)
IEC/EN 61 326-1/+A1 (emitted interference)
EN 60 529 (protection class)

Technical characteristics – DINALOG A 96 x 24

Display	
Type	LED
Light colour	Red or green
Analogue	35 segments
Digital	3-character 7-segment display with polarity indicator
Digit height	Approximately 8 mm
Scale	
Format	96 x 24 mm, vertical or horizontal (horizontal format without digital display)
Scale length	45 mm
Scale colour	White or black
Measuring ranges	
DC voltage	0…2 V to 0…300 V and ± 2V to ± 300 V
DC current	0…4…20 mA 0…0.2 mA to 0..200 mA and ± 0.2 mA to ± 200 mA
AC voltage	0…0.2 V to 0…300 V and 700 V
AC current	0…2 mA to 0…200 mA and 0…1 A; 0…5 A
Temperature	Via Pt100 or thermocouples, types: J, K, R or S
Resistance	0…200 Ω to 0…20 kΩ
Supply voltages	230 V/115 V AC/ 90…260 V DC or 24 V AC/18…36 V DC
Outputs for limit monitors	
2 relays	Each with change-over contact
2 additional relays	Each with NO contact
Switching capacity	5 A/250 V AC, 5 A/30 V DC
Switching time	Max. 200 ms

DINALOG A 144 x 24

Programmable quasi-analogue bar graph meters

Bar graph displays serve to display measurement signals visually. It is generally possible to connect sensors directly, or via measuring transducers. Depending on the visual resolution of the values to be displayed, bar graph displays are subdivided into trend indicators, overview indicators, and measuring instruments.

Regulations and standards
Our bar graph displays comply with the regulations defined by the European Directives 73/23/EEC and 89/336/EEC, as verified by compliance with the following standards:
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EN 60 529 (protection class)

Display of measured values with a choice of red or green 101-segment light bar, plus a red or green 4-character digital display with a numerical range from –1999 to +9999 (12,000 counts).
Highly suitable for all applications in which several measured values must be read out simultaneously. (With meters mounted side by side).

All measured values at a glance

- Precise read-out of values due to additional digital display
- Programmable measurement rate: 3...16 per second
- High legibility and wide viewing angle
- 4-level brightness levels for the light bar and digital display
- Up to four programmable limit values
- Limit status display via additional LEDs on the scale
- Two or four relays available
- 4…20 mA DC current measurement with 24 V DC supply for 2-wire measuring transducer
- Quick installation possible due to metal slider
- Electrical connection occurs via plug in screw terminals
- Front dimensions: 144 x 24 mm to DIN 43718
- Installation depth: 152 mm

Technical characteristics – DINALOG A 144 x 24

Display

Type	LED
Light colour	Red or green
Analogue	101 segments
Digital	4-character LED display with polarity indicator
Digit height	Approximately 7 mm

Scale

Format	144 x 24 mm, vertical or horizontal (horizontal format without digital display)
Scale length	91 mm
Scale colour	White or black

Measuring ranges

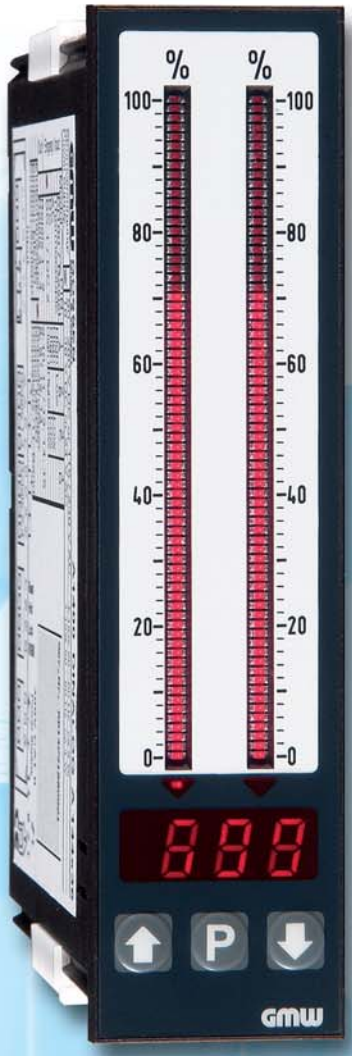
DC voltage	0...0.1 V to 0...200 V and ± 0.1 V to ± 200 V
DC current	0...4...20 mA 0...4...20 mA with 24 V DC supply for measuring transducer 0...2 mA to 0...5 A and ± 2 mA to ± 5 mA
AC voltage	0...0.2 V to 0...200 V and 600 V
AC current	0...2 mA to 0...200 mA and 0...1 A; 0...5 A
Temperature	Via Pt 100 or thermocouples, type: J or K
Resistance	0...200 Ω to 0...10 kΩ
Supply voltages	85...265 V AC/ 95...370 V DC or 15...48 V AC/10...72 V DC

Outputs for limit monitors

2 relays	Each with change-over contact
2 additional relays	Each with NO contact
Switching capacity	5 A/250 V AC, 5 A/30 V DC
Switching time	Max. 200 ms

DINALOG A 144 x 36

Programmable quasi-analogue bar graph meters



Bar graph displays serve to display measurement signals visually.
It is generally possible to connect sensors directly, or via measuring transducers. Depending on the visual resolution of the values to be displayed, bar graph displays are subdivided into trend indicators, overview indicators, and measuring instruments.

Single display

The measured value is displayed on a light bar, and simultaneously on the digital display.

For models which have limit settings, you can read the defined limits clearly on a second light bar alongside the measured value.

Therefore, you have a clear overview of the difference between the measured value and the limit values.

Double display

The measured values are displayed on two light bars side by side. You can select one measured value to be displayed simultaneously on the digital display.

A LED at the beginning of the respective light bar scale, shows you which measured value is being displayed by the digital display.

- 71 segments
- With a scale length of 91 mm, the measured value is displayed with a precision which is better than class 1.5.

Alarm messages:

Additional LEDs on the scale indicate when limits are exceeded.
The small installation depth of less than 127 mm enables installation into practically any control cabinet.

- Front dimensions: 144 x 36 mm to DIN 43718

Regulations and standards

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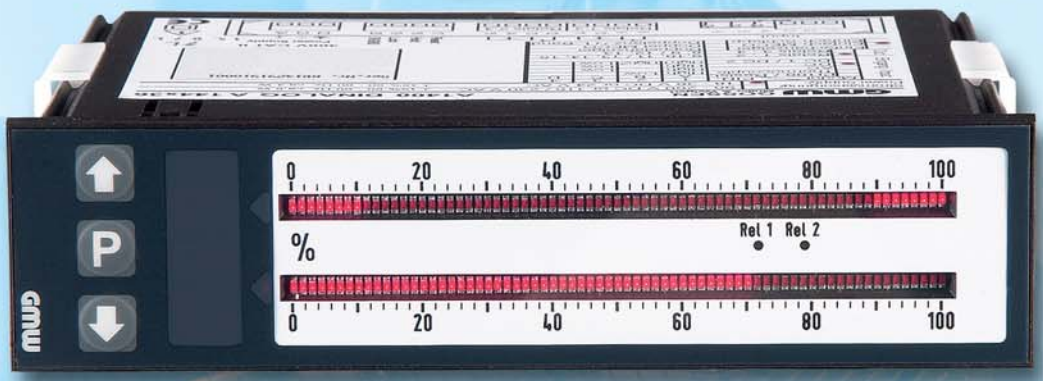
IEC/EN 61 010-1:2001, VDE 0411, Part 1 (safety regulations)
IEC/EN 61 326-1/+A1 (interference resistance)
IEC/EN 61 326-1/+A1 (emitted interference)
EN 60 529 (protection class)



Technical characteristics – DINALOG A 144 x 36

Display

Type	LED
Light colour	Red or green
Analogue	71 Segments
Digital	3-character 7-segment display with polarity indicator
Digit height	Approximately 8 mm

Scale

Format	144 x 36 mm, vertical or horizontal (horizontal format without digital display)
Scale length	91 mm
Scale colour	White or black

Measuring ranges

DC voltage	0…2 V to 0…300 V and ± 2V to ± 300 V
DC current	0…4…20 mA 0…0.2 mA to 0…200 mA and ± 0.2 mA to ± 200 mA
AC voltage	0…0.2 V to 0…300 V and 700 V
AC current	0…2 mA to 0…200 mA and 0…1 A; 0…5 A
Temperature	Via Pt100 or via thermocouples, types: J, K, R or S
Resistance	0…200 Ω to 0…20 kΩ
Supply voltages	230 V/115 V AC/ 90…260 V DC or 24 V AC/18…36 V DC

Outputs for limit monitors

2 relays	Each with change-over contact
2 additional relays	Each with NO contact
Switching capacity	5 A/250 V AC, 5 A/30 V DC
Switching time	Max. 200 ms

LS 200

Quasi-analogue bar graph meters 144 x 48 mm

All measured values at a glance

- Electronic panel-mounted measuring instrument with gas discharge display
- 201 distinguishable segments
- Single display without limit values, or with two limit values
- Double display without limit values, or with two limit values
- Two limit values can be set and displayed
- Front panel controls to set limit values
- Measuring range adjustment possible
- Display of limit values with pointers on the scale
- An exceeded limit is displayed by means of an LED on the scale
- Highly suitable for control rooms and process control systems which require high resolution and precise read-outs of measured values
- Installable in any location, vibration-resistant
- Front dimensions: 144 x 48 mm to DIN 43718
- Installation depth: 163 mm

Regulations and standards

Our bar graph displays comply with the regulations defined by the European Directives 73/23/EEC and 89/336/EEC, as verified by compliance with the following standards:
DIN/IEC 61 554 (housing)
IEC/EN 61 010-1:2001, VDE 0411 Part 1 (safety regulations)
IEC/EN 61 326-1/+A1 (interference resistance)
IEC/EN 61 326-1/+A1 (emitted interference)
EN 60 529 (protection class)

Technical characteristics – LS 200 bar graph displays

Analogue bar graph display

Type	Gas discharge
Light colour	Neon red
Over range display	Flashing
Resolution	0,5 %

Scale

Format	144 x 48 mm, vertical or horizontal
Scale length	100 mm
Scale colour	Black or white

Measuring ranges

DC voltage
DC current
AC voltage
AC current
Temperature
Resistance
Frequency

— See measuring range card, page 9

Supply voltage

24 V AC
115/230 V AC
24 V DC

Limit values

Number	4
Adjustable via	Potentiometers
Display on the scale	Pointers
Signalling	LED
Outputs	4 relays
Hysterese	Approximately 0.5 %

Versions

1 measurement input, no limit value	LS 210
1 measurement input, 2 limit values	LS 212
2 measurement inputs, no limit value	LS 220
2 measurement inputs, 4 limit values	LS 224

LS 300

Quasi-analogue bar graph meters 144 x 36 mm

All measured values at a glance

- 300 series bar graph displays in the are robust, quasi-analogue display devices with one or two light bars
- 101 segments per light bar
- In addition, depending on the type, limit relays can be included
- The zero point and full-scale value of the light bars are independent of each other and can be adjusted separately
- Buttons on the front side enable segment tests and brightness adjustment
- 2 limit values can be set on the front side and displayed
- Limit breaches are signalled
- Serial interface
- Installable in any location, vibration-resistant
- Front dimensions: 144 x 36 mm to DIN 43718
- Installation depth: 186 mm

Regulations and standards

Our bar graph displays comply with the regulations defined by the European Directives 73/23/EEC and 89/336/EEC, as verified by compliance with the following standards:
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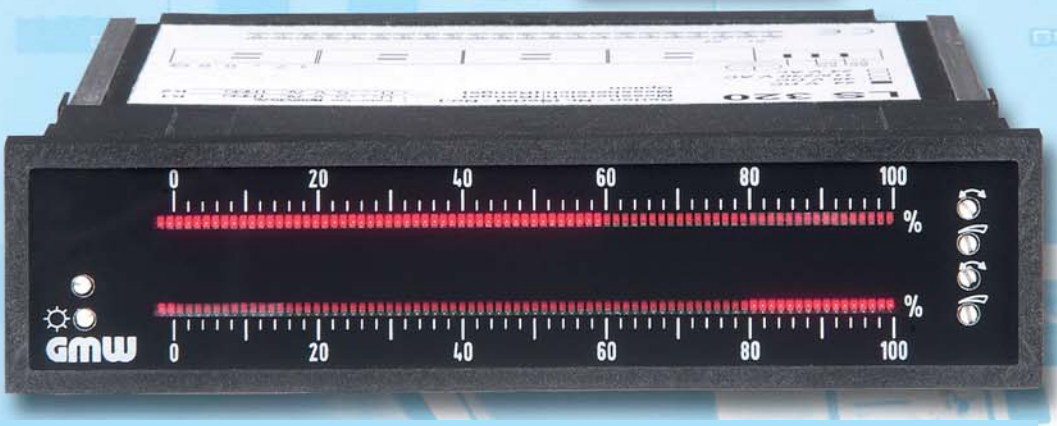
EN 60 529 (protection class)



Technical characteristics – LS 300 bar graph displays

Analogue bar graph display	
Type	LED line
Light colour	Red or green
Over range display	Flashing
Resolution	1.0 %
Scale	Dot display or flashing display
Format	144 x 36 mm, vertical or horizontal
Scale length	100 mm
Scale colour	Black or white
Measuring ranges	
DC voltage	See measuring range card, page 9
DC current	
AC voltage	
AC current	
Temperature	
Resistance	
Frequency	

Supply voltage	24 V AC 115/230 V AC 24 V DC 48 V DC
Limit values	
Number	2
Adjustable via	Potentiometers
Display on the scale	LED bar or LED dot
Signalling	LED
Outputs	2 relays
Hysteresis	Approximately 1.0 %
Versions	
1 measurement input, no limit value	LS 310
1 measurement input, 2 limit values	LS 312
2 measurement inputs, no limit value	LS 320
Analogue output	
Optional	0...10 V or 0/4...20 mA

LS 40

Quasi-analogue bar graph meters 96 x 24 mm

Bar graph displays serve to display measurement signals visually. It is generally possible to connect sensors directly, or via measuring transducers. Depending on the visual resolution of the values to be displayed, bar graph displays are subdivided into trend indicators, overview indicators, and measuring instruments..

All measured values at a glance

- Electronic panel-mounted measuring instrument with LED light bar
- 41 individual LEDs
- Measuring range adjustable via DIP switches
- ± 25 % range adjustment for all measuring ranges
- LED colours freely selectable
- Dot or bar display selectable
- Brightness setting via adjustable voltage
- Over range display via flashing LEDs
- Horizontal or vertical installation possible
- Installable in any location, vibration-resistant
- Front dimensions: 96 x 24 mm to DIN 43718
- Installation depth: 84 mm

Regulations and standards

Our bar graph displays comply with the regulations defined by the European Directives 73/23/EEC and 89/336/EEC, as verified by compliance with the following standards:
DIN/IEC 61 554 (housing)
IEC/EN 61 010-1:2001, VDE 0411 Part 1 (safety regulations)
IEC/EN 61 326-1/+A1 (interference resistance)
IEC/EN 61 326-1/+A1 (emitted interference)
EN 60 529 (protection class)

Technical characteristics – LS 40 bar graph displays

Analogue bar graph display

Type	41 bar LEDs (2x5 mm)
Light colour	Red (other colours available on request)
Over range display	Flashing
Resolution	2,5 %

Scale

Format	96 x 24 mm, vertical or horizontal
Scale length	Approximately 80 mm
Scale colour	Black or white

Measuring ranges

DC voltage	0...150 mV to 0...200 V DC Input resistance 50 kΩ/V
DC current	0...20 mA, 4...20 mA DC Voltage drop via shunt: 200 mV

Supply voltage	5 V DC, not galvanically isolated 24 V DC
Working temperature	0 to 50 °C
Storage temperature	–20 to +70 °C
Current consumption	Max. 250 mA with bar display, max. 50 mA with dot display
Installation dimensions	$91^{-0.5}$ x $22{,}5^{-0.3}$ mm
Housing	Closed, black thermoplastic
Scale faceplate	Black plastic

LK 75

Quasi-analogue bar graph meters 75 x 38 mm

Bar graph displays serve to display measurement signals visually. It is generally possible to connect sensors directly, or via measuring transducers. Depending on the visual resolution of the values to be displayed, bar graph displays are subdivided into trend indicators, overview indicators, and measuring instruments.

All measured values at a glance

- Electronic panel-mounted measuring instrument with LED line
- 21 individual LEDs
- LED colours freely selectable
- Dot or bar display selectable
- Brightness setting via adjustable voltage
- Over range display via flashing LEDs
- Horizontal or vertical installation possible
- Installable in any location, vibration-resistant
- Front dimensions: 75 x 38 mm
- Installation depth: 43 mm

Regulations and standards

Our bar graph displays comply with the regulations defined by the European Directives 73/23/EEC and 89/336/EEC, as verified by compliance with the following standards:
DIN/IEC 61 554 (housing)
IEC/EN 61 010-1:2001, VDE 0411 Part 1(safety regulations)
IEC/EN 61 326-1/+A1 (interference resistance)
IEC/EN 61 326-1/+A1 (emitted interference)
EN 60 529 (protection class)

Technical characteristics – LK 75 bar graph displays

Display	
Type	21 round LEDs (2.5 mm diameter)
Light colour	Red (other colours available on request)
Over range display	Flashing
Resolution	5%
Scale	
Format	75 x 38 mm, vertical or horizontal
Scale length	Approximately 51 mm
Scale colour	Black or white
Measuring ranges	
DC voltage	0...60 mV to 0...200 V DC Input resistance 50 kΩ/V
DC current	0...1 mA to 0...200 mA, 4...20 mA DC Voltage drop via shunt: 200 mV

Supply voltage	5 V DC, not galvanically isolated
Working temperature	0 to 50 °C
Storage temperature	–20 to +70 °C
Current consumption	Max. 250 mA with bar display Max. 50 mA with dot display
Housing	Closed, black thermoplastic
Scale faceplate	Black plastic

MEASURING RANGE CARDS
for LS 200 and LS 300

DC voltage	
Measuring range	0...10 mV to 0...250 V/overvoltage 350 V max.
Range suppression	Up to 50% of the full-scale value
DC current	
Measuring range	0...20 µA to 0...200 mA/overload 0.5 W max.
Range suppression	Up to 50% of the full-scale value
AC voltage (Sinusoidal)	
Measuring range	0...60 mV to 0...250 V/overvoltage 350 V max.
Frequency range	10 Hz...35 Hz...2kHz...4 kHz
AC current (Sinusoidal)	
Measuring range	0...10 µA to 0...1 A/overload 0.5 W max.
Voltage drop	60 mV approx.
Frequenzbereich	10 Hz...35 Hz...2 kHz...4 kHz
True RMS AC voltage	
Messbereich	0...60 mV to 0...250 V/overvoltage 350 V max.
Frequency range	DC, 15 Hz...10 kHz
True RMS AC current	
Measuring range	0...2 mA to 0...2A/overload 0.5 W max
Voltage drop	60 mV approx
Frequency range	DC, 15 Hz...10 kHz
Frequency measurement	
Measuring range	20 Hz...2 kHz
Maximum input	Input voltage range up to 25 V: 100 V Input voltage range up to 250 V: 350 V
Temperature with thermocouple	
Measuring range	NiCr-Ni (K) 0...1200 °C Fe-CuNi (J or L) 0... 900 °C Cu-Cu-Ni (T or U) 0... 600 °C PtRh-Pt 10% (S) 400...1700 °C PtRh-Pt 13% (R) 500...1700 °C
Temperature resistance thermometer Pt 100	
Measuring ranges	–200 °C...850 °C
Resistor or potentiometer	
Measuring ranges	20 Ω ... 20 kΩ

Order information (example)

Model, scale:	LS 224, vertical scale, black	Limit values:	– Measurement input 1: 2 max. contacts, fail safe
Measurement input 1:	0...100 V, bar display 0...100%		– Measurement input 2: 1 min. / 1 max. contact, inverse
Measurement input 2:	0...20 mA, dot display 0...4 bar	Analogue output 1:	0...20 mA
Auxiliary voltage:	24 V DC	Analogue output 2:	0...10 V

Certificates


СИСТЕМА СЕРТИФИКАЦИИ ГОСТ Р
ГОССТАНДАРТ РОССИИ

СЕРТИФИКАТ СООТВЕТСТВИЯ

№ РОСС DE.ДЕ01.В28505 7248589

Срок действия с 30.04.2007г. по 29.04.2008г.

ОРГАН ПО СЕРТИФИКАЦИИ
РОСС DE.0001.11ДЕ01
ДИН ГОСТ ТЮФ БЕРЛИН-БРАНДЕНБУРГ Общество по сертификации в Европе,

ПРОДУКЦИЯ
дисплей с светодиодными световыми диодами, серия Dinalog
серийный выпуск
код ОК 005 (ОКП): 42 2400

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ НОРМАТИВНЫХ ДОКУМЕНТОВ
ГОСТ Р 51350-99, ГОСТ Р 51522-99
код ТН ВЭД России: 9030 33 100 0

ИЗГОТОВИТЕЛЬ
GOSSEN Müller & Weigert, Kleinreuther Weg 88, D-90408 Nürnberg, ФРГ

СЕРТИФИКАТ ВЫДАН
GOSSEN Müller & Weigert, Kleinreuther Weg 88, D-90408 Nürnberg, ФРГ

НА ОСНОВАНИИ
-протоколов ИЦ ТЮФ Рейнланд Продукт Сейфти ГмбХ (РОСС DE.0001.21МЦ13) № 21129556_001/1 от 27.04.2007г.
-сертификата ДИН ГОСТ ТЮФ № 0730-07 от 30.04.2007г.

ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ
Руководитель органа
Эксперт
Сертификат имеет юридическую силу на всей территории Российской Федерации

GOST certificate


LGA InterCert
Zertifizierungsgesellschaft mbH

Zertifikat

General Elektronik GmbH, Am Stadtweg 3, DE - 39167 Hohendodeleben
mit den Fertigungsstätten
GOSSEN Müller & Weigert, Kleinreuther Weg 88, DE - 90408 Nürnberg
General Elektronik GmbH, Am Stadtweg 3, DE - 39167 Hohendodeleben
GMW měřicí technika s.r.o., Hybešova 584, CZ - 67801 Blansko
ein gemeinsames
Qualitätsmanagementsystem
nach
DIN EN ISO 9001:2000
in den Bereichen:
Entwicklung, Herstellung, Vertrieb und Wartung von Messumformern und Prüfgeräten sowie Geräten zur Anzeige elektrischer Messgrößen
eingeführt hat und anwendet.
Durch ein Zertifizierungsaudit der LGA InterCert Zertifizierungsgesellschaft mbH wurde der Nachweis erbracht, dass das QM-System des Unternehmens die Anforderung des oben genannten Standards (Ausgabe Dezember 2000) erfüllt.
Gültigkeit des Zertifikates bis 17. April 2010
Erstzertifizierung im März 2004
Nürnberg, den 18. April 2007
Registriernummer: QM-1870580
Dr. Herfried Kohl
Hauptgeschäftsführer
Michael Leininger
Leitender Auditor
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DIN EN ISO 9001:2000 certificate