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Depiction of reference symbols

<Key>	Inscription of the keys on the display and operator control unit.
Reading	Non-flashing readings in the display
<u>Reading</u>	Flashing readings in the display

The indications "right", "left", "top" or "bottom" imply that the viewer is looking at the front panel of the instrument unless stated otherwise.

Important Instructions for your Safety! Please read and observe!

Correct and safe operation of the apparatus calls for appropriate transportation and storage, expert installation and commissioning as well as correct operation and meticulous maintenance.

Only those persons conversant with the installation, commissioning, operation and maintenance of similar apparatuses and who possess the necessary qualifications are allowed to work on the apparatus.

Please take note of the contents of this Operating Manual and the safety regulations affixed to the apparatus.

The directives, norms and guidelines mentioned in this Operating Manual are applicable in the Federal Republic of Germany. When using the apparatus in other countries, please observe the national regulations prevailing in the respective country.

This apparatus has been designed and tested in accordance with DIN EN 61010-1, "Safety requirements for electronic, process measuring and laboratory instruments" and has been supplied in a safe condition. In order to retain this condition and to ensure safe operation, the safety instructions in this Operating Manual bearing the headline „Attention“ must be observed. Otherwise, persons can be endangered and the apparatus itself as well as other equipment and facilities can be damaged.

If the information in this Operating Manual should prove to be insufficient in any point, the Service Department will be delighted to give you more information.

Short description

The recorder is a microprocessor-controlled continuous-line recorder with 1 to 4 line channels or 1 to 3 line channels and 1 printer channel. The printer channel enables the recording of a measured value and creates text printouts.

The recorder is connected to the transmitter and is to be used for measuring process signals. The measuring channels are electrically separated from each other and unearthed.

Complementary publication

Instructions for parameter setting
Interface Description

Installation and Commissioning

Scope of delivery

The recorder is supplied with the following:

- 1 operating manual
- 2 mounting brackets *Be*
- 1 fibre pen *Fe* for each measuring channel
- 1 print unit *De* (option)
- 1 pack of fanfold chart *Fp* or 1 roll chart *Sr*
- 24 plug-in jumpers for universal version
- depending on the order the corresponding number of screw-plug terminals *Sk*, Sub-D connector, 9-pin and ruler(s).

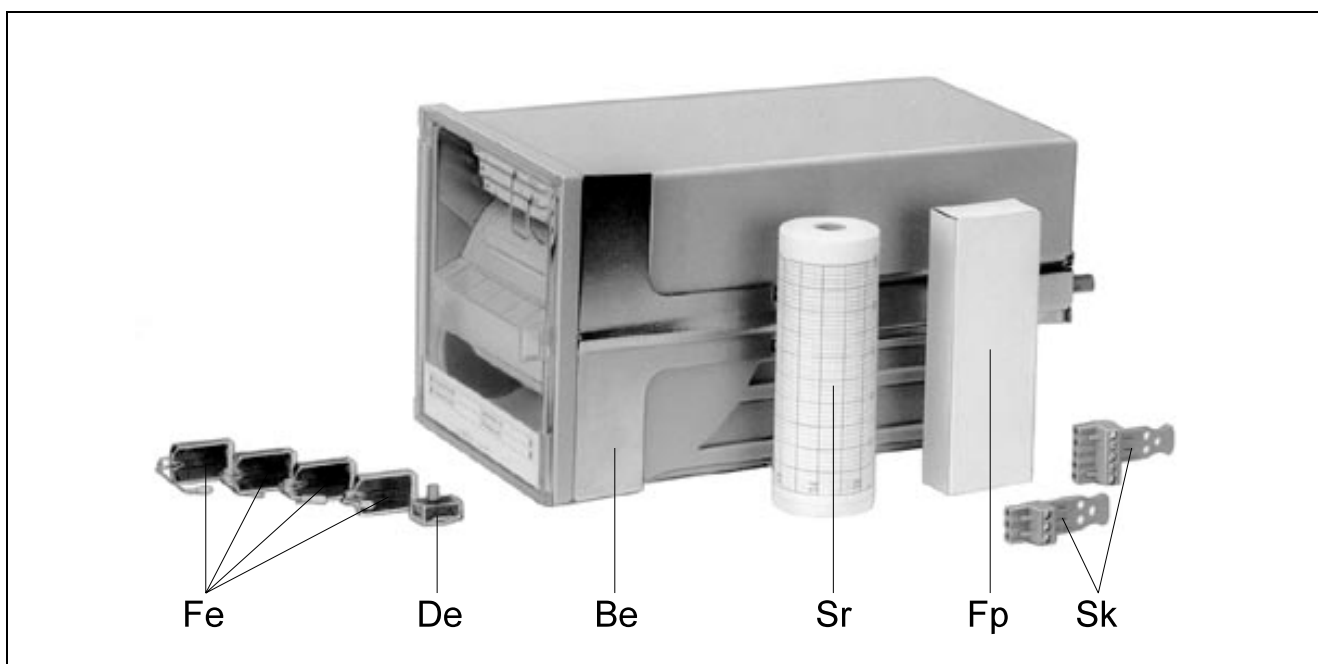


Fig. 1 Scope of delivery

Z-17538	<i>Be</i>	Mounting brackets
	<i>De</i>	Print unit (option)
	<i>Fe</i>	Fibre pens
	<i>Fp</i>	Fanfold chart
	<i>Sk</i>	Screw-plug terminals
	<i>Sr</i>	Roll chart

1. Mounting location

Mounting orientation

Lateral $-30^{\circ} \dots 0 \dots +30^{\circ}$

Inclination backwards 20° , forwards 20°

Ambient temperature

$0 \dots 50^{\circ} \text{C}$

Relative humidity

$\leq 75\%$ annual average, max. relative humidity $\leq 85\%$ during operation. Avoid condensation!

2. Mounting

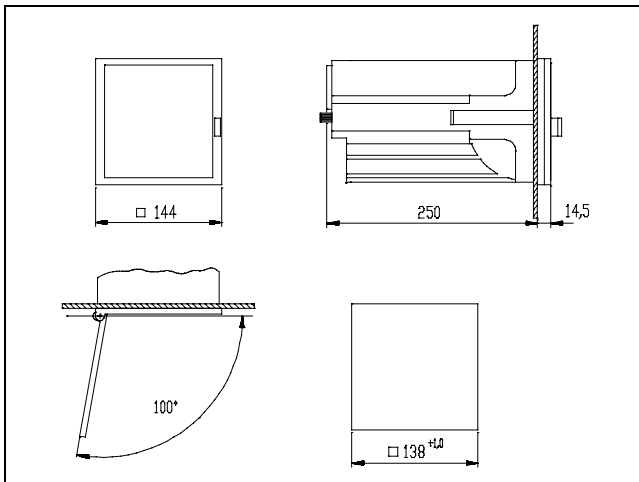


Fig. 2 Dimensional drawing (dimensions in mm)
Z-17464 left bottom: panel cutout

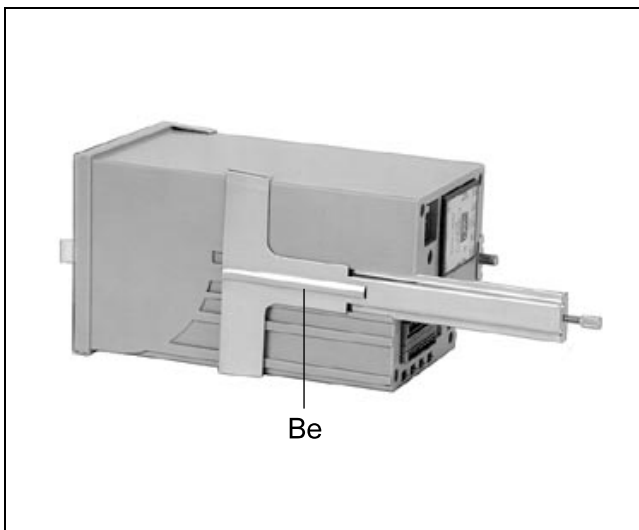


Fig. 3 Mounting the brackets
Z-17539 *Be* Mounting bracket

Mounting in panels

1. Fit the instrument into the panel from the front.
2. Fit mounting brackets *Be* laterally into the fitting notches on the case (see fig. 3).

Note

The mounting brackets *Be* are designed for close-packed horizontal and vertical mounting.

3. Align the mounting brackets *Be* vertically and tighten them equally.

Mounting in rack

1. Fasten 4 centering brackets.
2. Fit mounting brackets *Be* laterally into the fitting notches on the case (see fig. 3).
3. Align the mounting brackets *Be* vertically and tighten them equally.

3. Connecting the instrument

⚠ Caution

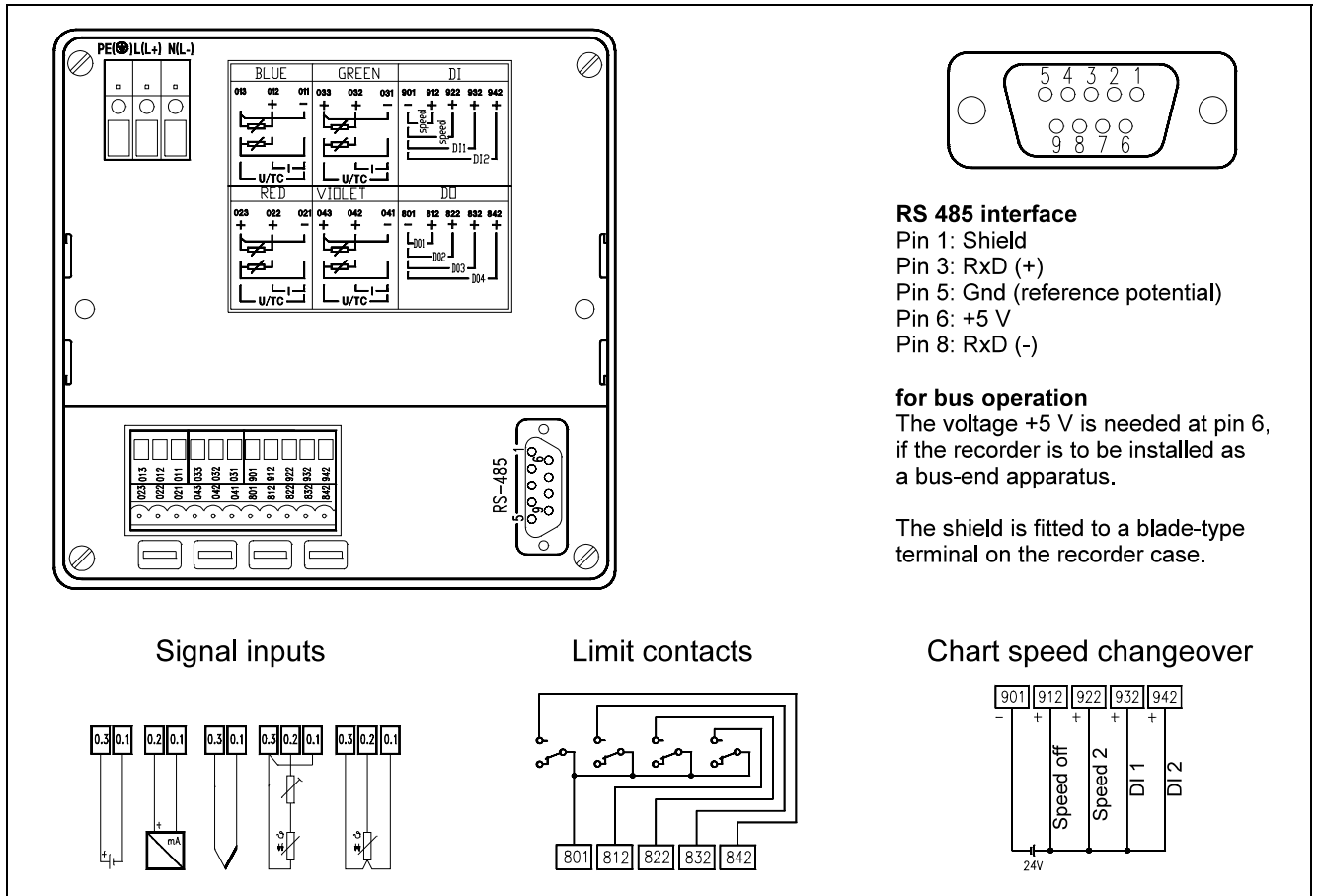
Before all other connections are made the protective ground terminal must be connected to a protective conductor.

The unit can be dangerous if the protective conductor is interrupted inside or outside the unit or if the protective ground terminal is disconnected.

The unit may only be operated when properly installed.

Install a mains switch, with adequate switching capacity, within the reach of the mounting site so that the unit can be disconnected at all poles from the mains. The protective action of the protective conductor must not be negated.

The nominal current power of the protection equipment on the side of the installation must not be over 16 A.



RS 485 interface

- Pin 1: Shield
- Pin 3: RxD (+)
- Pin 5: Gnd (reference potential)
- Pin 6: +5 V
- Pin 8: RxD (-)

for bus operation

The voltage +5 V is needed at pin 6, if the recorder is to be installed as a bus-end apparatus.

The shield is fitted to a blade-type terminal on the recorder case.

Fig. 4 Back panel and screw-plug terminals
 Z-16529 “. ” = 1 for channel blue
 Z-16784/1 “. ” = 2 for channel red
 Z-17447 “. ” = 3 for channel green
 Z-17762 “. ” = 4 for channel violet
 Z-17763

Connecting the input signal

- Fasten signal lines (max. cross section $2 \times 1 \text{ mm}^2$) at the screw-plug terminals.

Connecting the power supply

- Fasten power supply lines (max. cross section $1 \times 4 \text{ mm}^2$ or $2 \times 1.5 \text{ mm}^2$) at the screw-plug terminals. The cross section of the protective conductor must at least be equal to the cross section of the power supply line.

4. Fitting the chart

Chart unit for roll chart

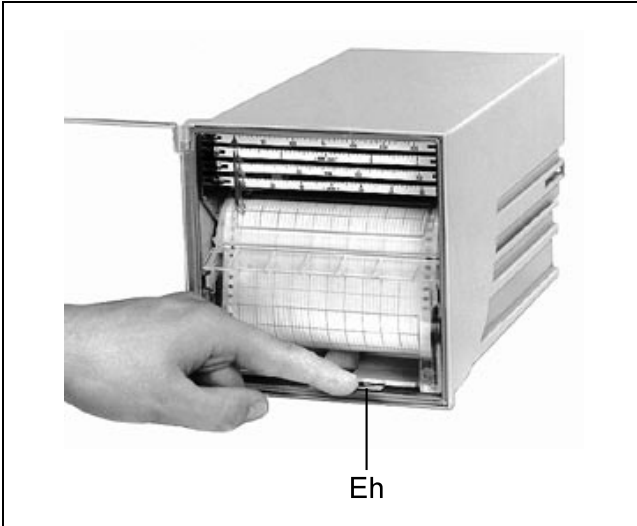


Fig. 5 Unlocking the chart unit
Z-17540 Eh Unlocking lever

1. Unlock chart unit: Press unlocking lever *Eh* (see fig 5). Chart unit swings forwards. Remove chart unit in the direction of the arrow.
2. Open out pressure plate flap *Pa*.
3. Insert roll chart into the chart storage recess *Pm*.
4. Pull the chart beginning forwards to the sprocket wheel and engage the perforation with the sprocket wheel, making sure that the chart is parallel to the sprocket wheel.
5. Close the pressure plate flap *Pa*.
6. Open out the chart guide flap *Pf*.
7. Fit take-up roll *Ar* if necessary.
8. Close the chart guide flap *Pf*.

Note

Having installed the chart unit in the recorder, the chart unit winds itself automatically onto the take-up roll.

9. Fit chart unit in the chassis until it engages.

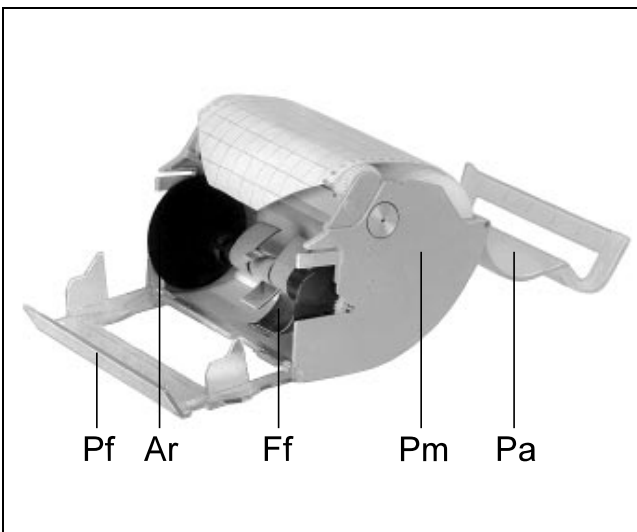


Fig. 6 Chart unit for roll chart
Z-17668 Ar Take-up roll
Ff Guide spring
Pa Pressure plate flap
Pf Chart guide flap
Pm Chart storage recess

Chart unit for fanfold chart

(see fig.s 5 and 7)

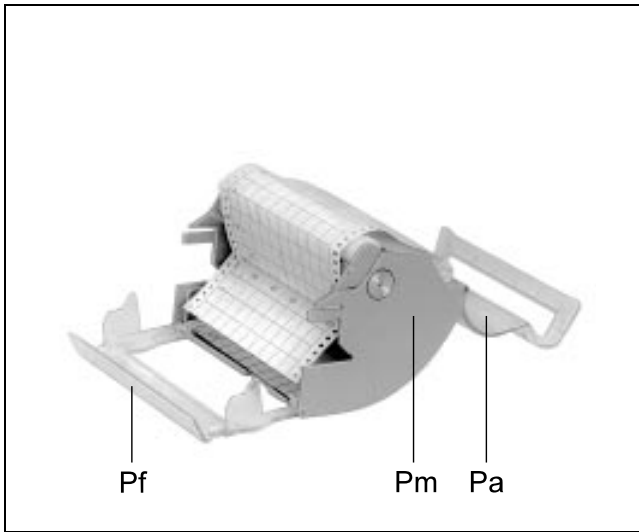


Fig. 7 Chart unit for fanfold chart
Z-17669 *Pa* Pressure plate flap
Pf Chart guide flap
Pm Chart storage recess

Remove the guide spring *Ff* and Take-up roll *Ar* when converting the roll chart unit to the fanfold chart (see fig. 6).

1. Unlock chart unit: Press unlocking lever *Eh* (see fig 5). Chart unit swings forwards. Remove chart unit in the direction of the arrow.
2. Open out pressure plate flap *Pa*.
3. Insert roll chart into the chart storage recess *Pm*.
4. Open out the chart guide flap *Pf*.
5. Pull the chart beginning forwards to the sprocket wheel and engage the perforation with the sprocket wheel. Two fanfold sheets must rest in the tray. Make sure that the chart is parallel to the sprocket wheel.
6. Close the pressure plate flap *Pa*.
7. Close the chart guide flap *Pf*.
8. Fit chart unit in the chassis until it engages.

5. Fitting the fibre pen / print unit

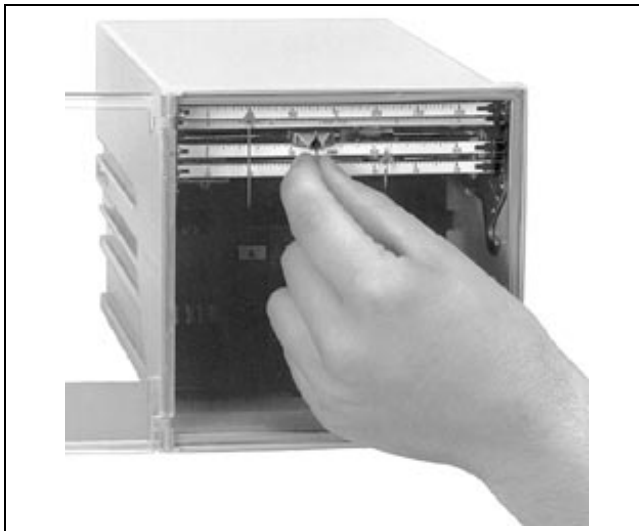


Fig. 8 Fitting the fibre pen / print unit
R-17670

1. Push scales upwards.
2. Fit fibre pen / print unit according to fig. 8.

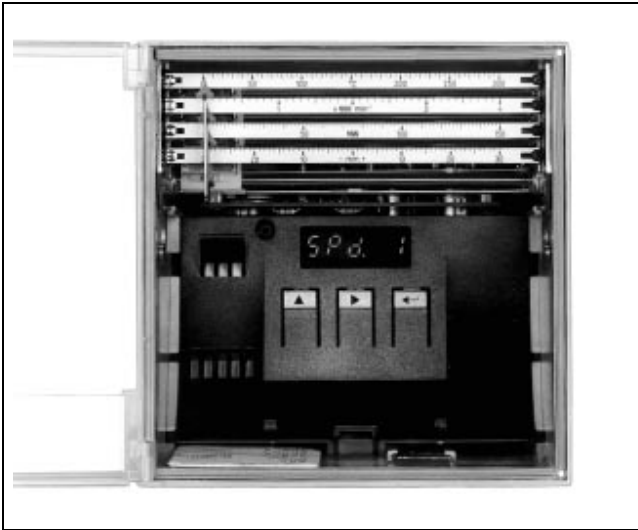


Fig. 9 Display and operator control unit
R-17671

It is more convenient to fit the fibre pens and print unit when the unit is switched on:

1. Unlock chart unit: Press unlocking lever (see fig. 5). Chart unit swings forwards. Remove chart unit in the direction of the arrow.
2. Remove chart unit.
3. Press <▲>. The measuring systems move to park position.
4. Push scales upwards.
5. Fit the fibre pens and print units.
6. Flap the scales downwards.
7. Press <▲>.
8. Fit chart unit in the chassis until it engages.

6. Switching on the unit

Caution

Before switching on, make sure that the operating voltage of the unit (see rating plate) corresponds to the voltage of the power supply.

Install a mains switch, with adequate switching capacity, within the reach of the mounting site so that the unit can be disconnected at all poles from the mains. The protective action of the protective conductor must not be negated.

7. Positioning the chart

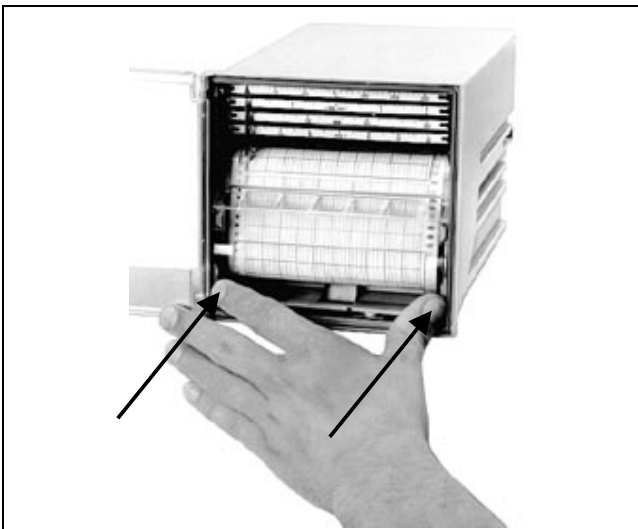


Fig. 10 Positioning the chart
Z-17672

1. Press the lower handle strips of chart unit towards the back. The chart is transported faster downwards.
2. Let go the handle strips once the green baseline has been reached.

Operation

Removing the chart

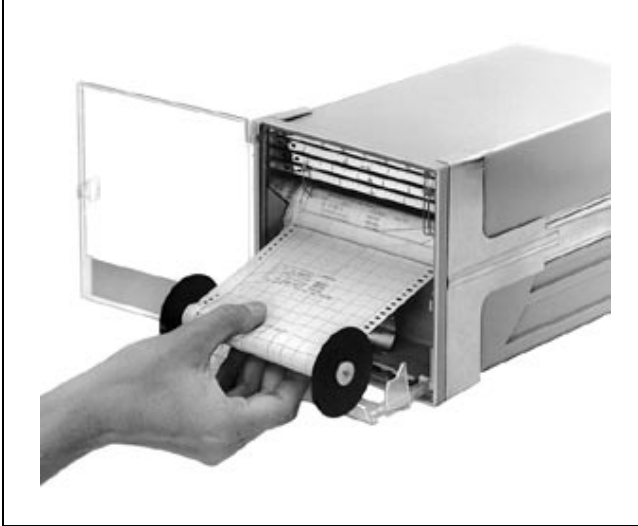


Fig. 11 Removing the chart
R-17673

The chart unit can remain in the unit when removing the chart.

Chart unit for chart

1. Open the chart guide flap downwards.
2. Remove take-up roll.
3. If necessary, tear off the chart at the perforation.

Chart unit for fanfold chart

1. Open the chart guide flap downwards.
2. Remove the fanfold pack.
3. If necessary, tear off the chart at the fold.

Note

Two fanfold sheets must rest in the tray.

Withdrawing chart paper from take-up roll



Fig. 12 Withdrawing chart from take-up roll
R-17674

1. Rotate flange without drive pinion by 45° and pull from take-up roll.
2. Hold chart as shown in fig. 11 and remove from axis.
3. Replace right flange and secure by rotating by 45°.
4. Fit take-up roll into chart unit. The drive pinion must be on the right hand side.
5. Close chart guide flap.

Changing the chart speed

If the unit is of the type with “limit alarm monitoring and binary inputs”, two speeds can be externally selected.

The required variables for speed 1 and speed 2 can be selected in the parameter setting mode (see instructions for parameter settings). Speed 1 becomes active upon switching on the unit. Speed 2 is activated by applying a voltage of 24 V DC between terminals 901 (-) and 922 (+).

Standby function

If the unit is of the type with “limit alarm monitoring and binary inputs”, it can be switched to standby. To do this, a voltage of 24 V DC must be applied to terminals 901 (-) and 912 (+).

In the standby mode the speed is switched off or is 1 mm/h (depending on parameter setting). The measuring elements are positioned at the start of scale. The measured value processing and limit alarm monitoring functions are active. Threshold infringements or switch-off of unit cancels the standby mode. The unit begins to record.

Retrofitting

⚠ Caution

When the apparatus is connected to its supply, the terminals may be live, and the opening of covers or removal of parts except those to which access can be gained by hand is likely to expose live parts.

The apparatus shall be disconnected from all voltage sources before it is opened for any operations. Operations on the opened apparatus under voltage must only be performed by an expert who is aware of the hazard involved.

Capacitors inside the apparatus may still be charged even if the apparatus has been disconnected from all voltage sources.

Only fuses of the specified type and rated current may be used as replacements. Makeshift fuses must not be used. The fuse-holder may not be short-circuited.

Whenever it is likely that protection has been impaired, the apparatus shall be made inoperative and be secured against any unintended operation.

It must be assumed that the protection has been impaired when

- the apparatus has visible signs of damage,
- the apparatus no longer functions,
- the apparatus has been stored in unfavourable conditions for a long time,
- the apparatus has been subjected to adverse transport conditions.

Changing measuring ranges

Standard version

The unit version with "Standard measuring range" is matched to the measuring task using the keys of the display and operator control unit or via RS-485 interface (see parameter setting instructions).

Universal version

The unit version with "Standard measuring range" is matched to the measuring task using the keys of the display and operator control unit or via RS-485 interface (see parameter setting instructions). A further hardware matching on the channel card using plug-in jumpers is necessary.

Hardware matching with plug-in jumpers

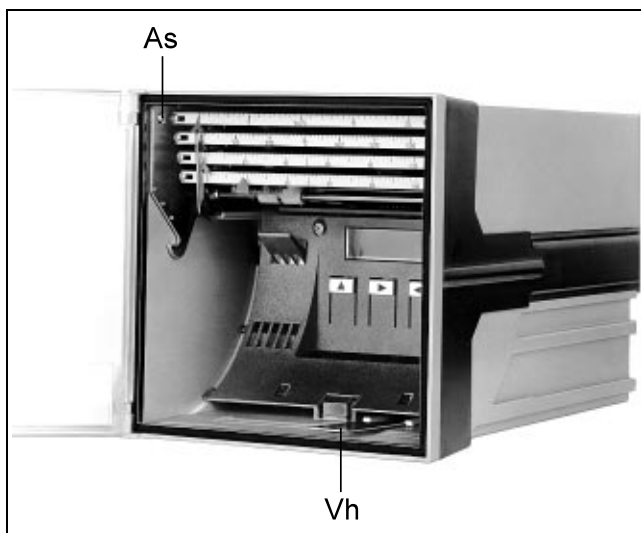


Fig. 13 As Retaining screw
Z-18027 Vh Locking lever

Remove electronic unit

1. Loosen the retaining screws *As* (see fig. 13) and pull forward the measuring element carriage by approximately 2 cm.
2. Lift up the locking lever *Vh* (see fig. 13) whilst pulling forward the module simultaneously.
3. Pull out the plugs to the measuring elements and also the plug for the print channel.

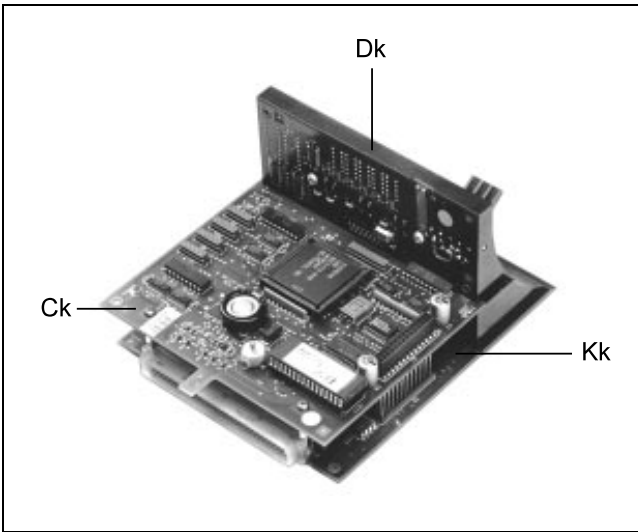


Fig. 14 Dismantled electronics unit (rear view)
 Z-18026 Ck CPU card
 Dk Display card
 Kk Channel card

4. Remove the electronic unit (see fig. 14).
5. Undo the 4 screws *SI* (see fig. 15).

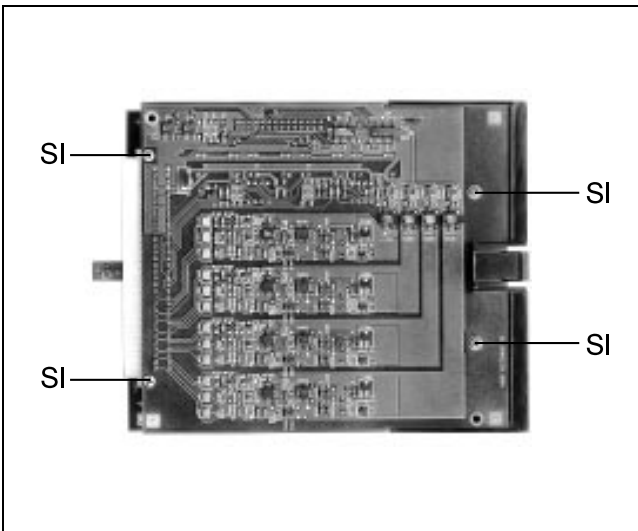


Fig. 15 Undo the screws *SI* of the channel card (bottom view)
 Z-18028

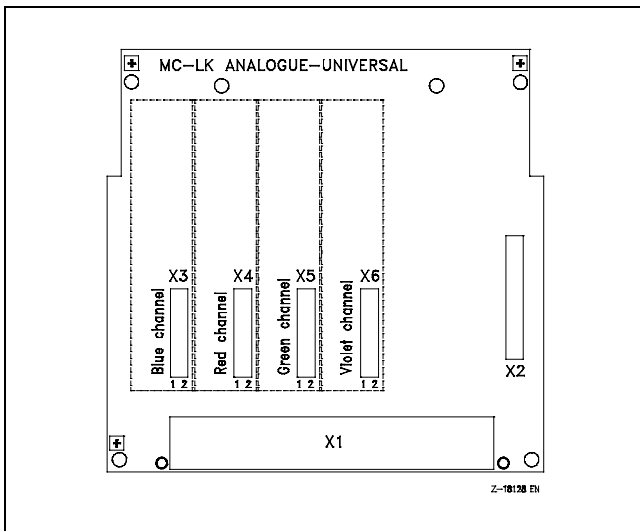


Fig. 16 Arrangement of the plug-in jumpers
Z-18128

6. Arrange the plug-in jumpers on the component side of the channel card according to channels. Fig. 16 shows the position of the plug-in jumpers assigned to the channels (X3... X6).
7. Arrange plug-in jumpers according to the desired type of measurement and nominal measuring range (see fig. 17).
8. Fasten channel card *Kk* with the 4 screws *Sl* (see fig. 15).
9. Restore the plug connection to the measuring elements.
10. Fit the electronics unit into the recorder. Snap locking lever *Vh* into place.
11. Push the measuring system carrier into housing and screw tight the retaining screw *As* (see fig. 13).
12. Switch on power supply and set the parameters of the required measuring ranges (see instructions for parameter setting).

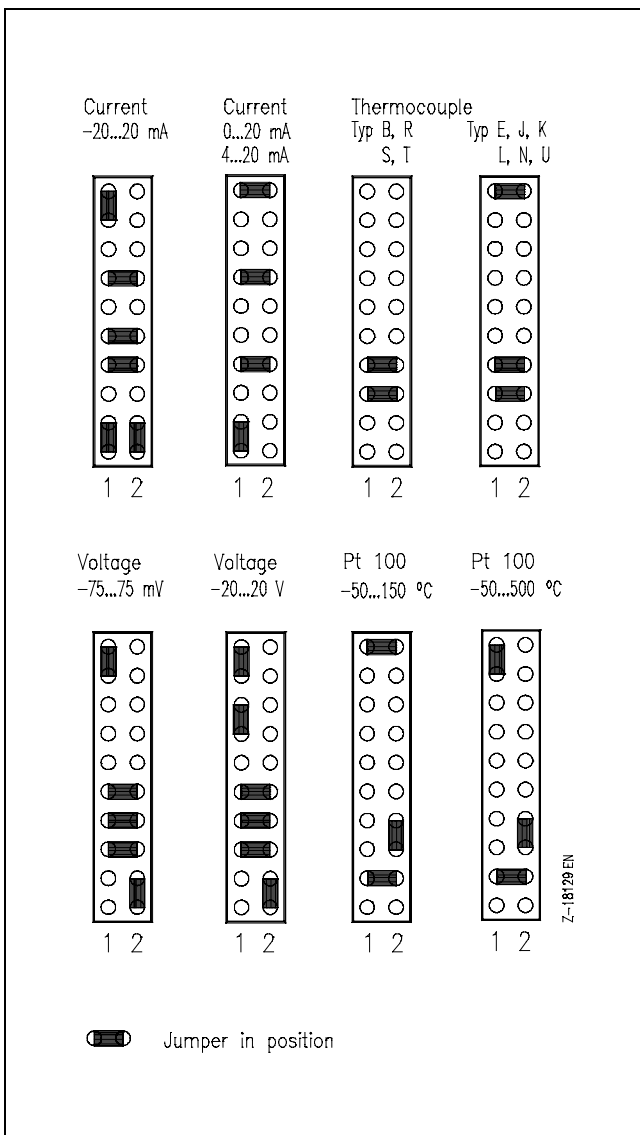


Fig. 17 Arrangement of the plug-in jumpers according to type of measurement and nominal measuring range
Z-18129

Replacing scales

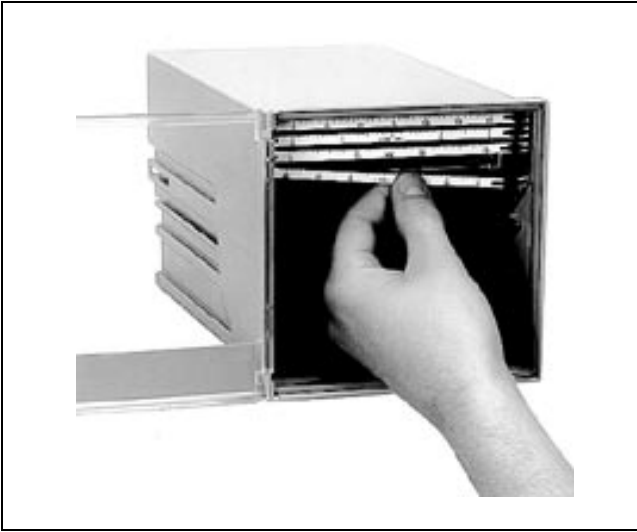


Fig. 18 Replacing scales
Z-17675

1. Remove fibre pens and print unit.
2. Undo the scale screws on the left.
3. Push scales to the right and disengage from scale screw.
4. Remove the scales by pulling them to the left.
5. Reinstall scales working in the opposite order.
6. Fit in the fibre pen.
7. Check the measuring system zero with the start of scale:
 1. Remove chart unit.
 2. Press $\leftarrow \downarrow \rightarrow$. "SYS" is displayed.
The measuring systems go to the measuring system zero.
 3. Align scale with pointer and tighten scale screw.
 4. Fit chart unit.

Replacing the measuring point name plate



Fig. 19 Replacing the measuring point name plate
Z-17676

Simply pull out the flexible measuring point designation plate and fit a new one.

Maintenance

⚠ Caution

When the apparatus is connected to its supply, the terminals may be live, and the opening of covers or removal of parts except those to which access can be gained by hand is likely to expose live parts.

The apparatus shall be disconnected from all voltage sources before it is opened for any operations. Operations on the opened apparatus under voltage must only be performed by an expert who is aware of the hazard involved.

Capacitors inside the apparatus may still be charged even if the apparatus has been disconnected from all voltage sources.

Only fuses of the specified type and rated current may be used as replacements. Makeshift fuses must not be used. The fuse-holder may not be short-circuited.

Whenever it is likely that protection has been impaired, the apparatus shall be made inoperative and be secured against any unintended operation.

It must be assumed that the protection has been impaired when

- the apparatus has visible signs of damage,
- the apparatus no longer functions,
- the apparatus has been stored in unfavourable conditions for a long time,
- the apparatus has been subjected to adverse transport conditions.

Replacing fuses

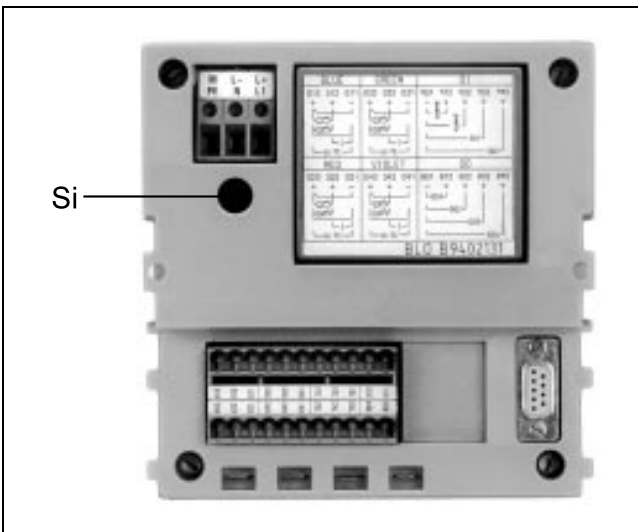


Fig. 20 Replacing fuse *Si*
Z-17677

⚠ Caution

Make sure that only fuses with the required rated current and of the specified type are used for replacement. The use of makeshift fuses and the short-circuiting of fuse-holder are prohibited.

When the apparatus is connected to its supply, terminals may be live, and the opening of covers or removal of parts except those to which access can be gained by hand is likely to expose live parts.

1. Unscrew the fuse holder.
2. Replace fuse *Si*.
3. Screw back the fuse holder.

Fuse rating

230 V	M	0.16 C
115 V	M	0.315 C
24 V	M	1.6 E

Technical data

Measuring section

Measuring deviation

Class 0.5 for left channels to IEC 484 referred to the nominal range

Class 1 for measured value recording with printer system to IEC 484 referred to the nominal range

Where lower-range value and/or upper-range value shifted, additionally:

$$\pm (0.1\% \frac{\text{nominalrange}}{\text{span}} - 0.1)$$

Dead zone

0.25 % of span

Response time

2 s

Measured value damping

with 1st order low-pass filter

time constant 0...60 s per measuring channel, parameterizable

Measurement variable / nominal ranges

Standard version

Direct current

0...20 mA; Ri = 50 Ω

4...20 mA; Ri = 50 Ω

±20 mA; Ri = 50 Ω

Direct voltage

±10 V; Ri > 1 MΩ

Universal version

Direct current

0...20 mA; Ri = 50 Ω

4...20 mA; Ri = 50 Ω

±20 mA; Ri = 50 Ω

Direct voltage

±75 mV; Ri ≥ 2 MΩ

±20 V; Ri > 200 kΩ

Thermocouples, Ri ≥ 2 MΩ

Type B 100...+1820 °C

Type E 0...+1000 °C

Type J 0...+1200 °C

Type K 0...+1372 °C

Type L 0...+ 900 °C

Type N 0...+1300 °C

Type R 0...+1769 °C

Type S 0...+1769 °C

Type T 0...+ 400 °C

Type U 0...+ 600 °C

Parameters can be set internally or externally for reference point, monitoring of sensor breakage can be set as a parameter

Resistance thermometers

Pt100 in 2- or 3-wire circuits

–50...+500 °C; –50...+150 °C

Line resistance

with 2-wire circuitry max. 10 Ω

with 3-wire circuitry max. 40 Ω

Measuring ranges

Lower range

from 0...80 % of each nominal range can be set as a parameter

Measuring scope

from 20...100 % of each nominal range can be set as a parameter.

Root-extraction function in direct current and direct voltage nominal ranges can be set as a parameter.

Effects

$$\pm (0.2 + (0.05 \frac{\text{nominalrange}}{\text{span}} - 0.05)) \% / 10K$$

±1 °C/10 K for internal reference junction correction

Reference temperature

25 °C

Influence of supply voltage

0.1 % for 24 V DC ±20 %

0.1 % for 24 V AC +10...–15 %

0.1 % for 115 V AC +10...–15 %

0.1 % for 230 V AC +10...–15 %

Influence of AC parasitic voltages

≤0.5 % of span

Influence of external magnetic field 1 mT

≤0.5 % of span

Influence at mechanical stress

during and after the effect ±0.5 % of the span

Recording section

Scale

one graduation per measuring system

Scale plate width 5 mm

Character height 2 mm

Display and operator control unit


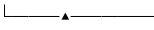

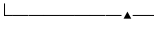
Display (only for parameter definition)
5-digit, 7-segment display
Character height 4 × 7 mm

Operation
with 3 keys


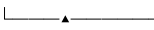


Recording

Arrangement of the measuring systems and colour assignment:

Version without printer channel

	Number of line channels			
	1	2	3	4
 green			x	x
 red		x	x	x
 blue	x	x	x	x
 violet				x

Version with printer channel

	Number of line channels			
	1	2	3	4
 green			x	
 red	x	x		
 black	x	x		
 Print.ch. violet				

Trend recording

Fibre pen with ink reservoir. Content approx. 1.4 l, length of line approximately 1300 m. Distance between tips of fibre-tip recording pens 2 mm.

Printing

Instead of the lower measuring system, a printer system for text printing can be incorporated. Distance between blue fibre-tip recording pen and print head 6 mm. In addition to text printout, the printer system can be used to record a measured value. Measured values are recorded in the form of a dotted line with equidistant dot spacing. Ink reserve of the print head approximately 1,500,000 dots.

Alphanumeric text print

- 8 text lines with 16 characters each.
A time printout is appended to each text line. Initiation cyclic, at parameterizable intervals or event-dependent by way of internal alarm values or external actuation (binary inputs).
- Printout, paper feed, date and time.
Initiation when unit is switched on and on paper feed switch-over.
- Printout of time and date.
Initiation cyclic, at parameterizable intervals or event-dependent by external actuation.
- Print of current measured values.
Initiation cyclic, at parameterizable intervals or event-dependent by internal/external actuation.

- Printout of double lines allocated to measuring points.
1st line: Scaling line with channel indentation and printout of unit.
2nd line: Measuring point-specific text with max. 32 characters.
- Listing of all active parameters.
Operating manual in parameter-setting mode.

Text printing

only possible at paper feeds ≤ 240 mm/h

Font size

approximately 1.5 mm × 2 mm

Chart speeds

0; 2.5; 5; 10; 20; 30; 60; 120; 240; 300; 600; 1200 mm/h
Option: Speed is externally adjustable

Chart

32 m roll chart or 16 m fanfold chart

Visible diagram length

60 mm

Recording width

100 mm (chart width 120 mm, DIN 16 230)

Chart feed-in (with roll chart)

via automatic catch of fresh paper by take-up reel. Capacity of take-up reel 32 m.

Power supply

UC power supply unit

24 V AC/DC ± 20 %

Power consumption

at max. complement approximately 15 W / 20 VA

AC power supply unit

24 AC / 115 AC / 230 V AC, +10...-15 %

Frequency range

47.5...63 Hz

Power consumption

at max. complement approximately 20 W / 25 VA

RS 485 interface

- for parameter-setting
- Link to higher-order systems for bidirectional data transmission. The data protocol is based on the PROFIBUS standard.

Options

Alarm value monitoring

2 alarm values per channel for absolute value monitoring. 4 internal relays can be freely assigned to the alarm values.

Output

NO contact – the contacts are linked to each other on one side.

Contact load

max. 30 V / 100 mA; $\cos \varphi \geq 0.5$ (only functional extra-low voltage circuits may be connected)

Event marking (only version with printer channel)

2 markers possible

Recording at approximately 2 % and 5 % recording width
Control voltage: 24 V DC / 6 mA external

External speed changeover

Control voltage: 24 V DC / 6 mA external

Standby function

Control voltage: 24 V DC / 6 mA external

General and Safety Data

Environmental capabilities

Climate class

3K3 according to DIN IEC 721-3-3

Ambient temperature

0...25...50 °C

Transport and storage temperature

-40...+70 °C

Relative humidity (during operation)

≤ 75 % year average, max. 85 %

Avoid condensation!

Note effect of atmospheric humidity on the chart paper according to DIN 16 234.

Mechanical features

Tested

according to DIN IEC 68-2-27 and DIN IEC 68-2-6

Transport

Impact 30g / 18 ms

Vibration 2g / 5...150 Hz

During operation

Vibration 0.5g / ±0.04 mm / 5...150 Hz / 3 × 2 cycles

Electromagnetic compatibility

The protection targets of the EMC directive 89/336/EEC with regard to radio interference suppression according to EN 55 011 and to interference resistance according to EN 50 082-2 are met.

Radio interference suppression

Limit class B according to EN 55 011 or Post Office Ordinance 243/92

Immunity to interference

tested according to IEC 801

Type of test	Test severity	Effect	Severity degree
Burst (5/50 ns) on mains lead measuring lead	2 kV	≤1 %	3
	2 kV	≤1 %	3
Surge (1,2/50 μs) on mains lead common mains lead differential	2 kV	≤1 %	3
	1 kV	≤1 %	2
HF field radiated 80 MHz...1 GHz HF field lead routed 0,15 ...80 MHz	10 V/m	≤1 %	3
	10 V	≤1 %	3
1 MHz puls on mains lead common mains lead differential	2 kV	≤1 %	3
	1 kV	≤1 %	3
Discharge of static electricity (1/30 ns)	6 kV	≤1 %	3

The NAMUR industrial standard EMC is fulfilled (interface lines shielded).

Permitted interference voltages

	Standard version	Universal version
Serial interference peak-to-peak	≤0,3 × span max. 3 V	≤0,3 × span max. 3 V
Normal-mode rejection	35 dB	35 dB
Common mode parasitic voltage	60 V DC 250 V AC	60 V DC 250 V AC
Common mode rejection	83 dB for DC 96 dB for AC	83 dB for DC 96 dB for AC

Electrical safety

Tested

according to DIN EN 61 010-1 (Classification VDE 0411) or IEC 1010-1

Class of protection

I

Overvoltage category

III at mains input

II for inputs and outputs

Degree of contamination

2 in unit and at the input terminals

Test voltage

3.75 kV measuring channels to power supply

2.2 kV protective conductor to power supply

Functional extra low-voltage with safe isolation (PELV)

between mains inputs – measuring inputs, control inputs, interface lines according to VDE 0100 part 410 and VDE 0106 part 101

Connection, case and mounting

Electrical connections

Degree of protection IP 20

Theaded-head terminals for measuring inputs, control inputs and alarm value relay outputs.

Max. wire cross-section $2 \times 1 \text{ mm}^2$

Screw-plug terminals for mains connection

Max. wire cross-section 4 mm^2 or $2 \times 1.5 \text{ mm}^2$

RS 485 interface via 9-pin Sub-D connector

Case

Moulded plastic for panel or rack (dimensions see fig. 2)

Degree of case protection according to DIN 40 050

Front IP 54

Back IP 20

Colour of case

pebble grey according to RAL 7032

Case door

Moulded material

Option: Metal frame door with glass pane nonreflecting

Mounting of case

with 2 mounting brackets (optionally for panel or rack), for rack mounting centering brackets required. Max. width of grid rod = 40 mm.

Mounting orientation

Lateral $-30^\circ \dots 0 \dots +30^\circ$

Inclination backwards 20°

Inclination forwards 20°

Mounting distance

horizontally or vertically 0 mm, case door must open at a 100° angle.

Mass

approx. 3.5 kg

Settings Basic Parameters

If no individual parameter-setting is requested when a unit is ordered, the unit is supplied with the following parameter setting:

- all measuring channels with measuring range 0...20 mA
- speed 1 = 20 mm/h
- speed 2 = 120 mm/h
- speed 3 = off
- alarm values are set to end positions (0 and 20 mA).
- measured value damping, zoom, printer and alarm value functions are deactivated
- no password assigned

These parameter settings can be initialised at any time in the main menu (see parameter setting instructions).

Fulfilled standards or norms

International Standards

IEC 484	DIN 43 782	potentiometric recorders
IEC 1010-1	DIN EN 61 010-1	electrical safety (test voltages)
IEC 664	VDE 0110	overvoltage category
IEC 68-2-6	DIN IEC 68-2-6	degree of contamination
IEC 68-2-27	DIN IEC 68-2-27	mechanical features (vibrations)
IEC 529	DIN 40 050	mechanical features (shock)
IEC 801	DIN VDE 0843	degree of case protection
EN 60 801		immunity to electromagnetic interference
IEC 721-3-3	DIN IEC 721-3-3	ambient climatic conditions
IEC 742	DIN EN 60 742	classification VDE 0551
		safety transformer

German norms

DIN 43 802	Scales
DIN 16 234	Chart paper
DIN 43 831	Case

Packaging for transport or for return to manufacturer

Remove the fibre-tip inserts when transporting.

If the original packing is no longer available, the apparatus must be wrapped in an insulating air foil or corrugated board and packed in a sufficiently large crate lined with shock absorbing material (foamed material or similar) for the transportation. The amount of cushioning must be adapted to the weight of the unit and to the mode of transport. The crate must be labelled "Fragile".

For overseas shipment the unit must additionally be sealed airtight in 0.2 mm thick polyethylene together with a dessicant (e.g. silica gel). The quantity of the desiccant must correspond to the packing volume and the probable duration of transportation (at least 3 months). Furthermore, for this type of shipment the crate should be lined with a double layer of kraft paper.

Subject to technical changes.

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Subject to technical changes.
Printed in the Fed. Rep. of Germany
42/43-27 EN Rev. 03
Edition 04.01