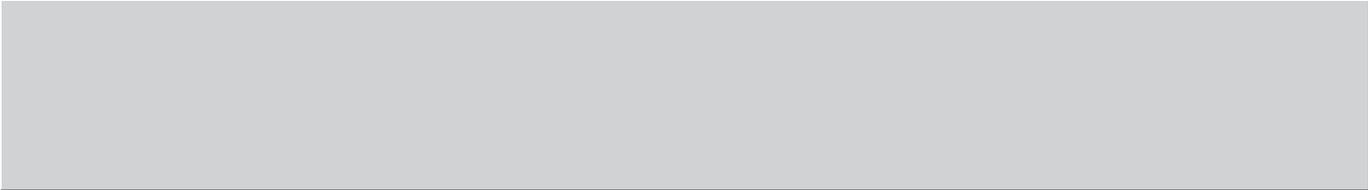


EI100
EI100/160



Messko







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提示

本说明书中的参数可能会和交货的装置稍有差异。
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HINWEIS

Data contained herein may differ in details from the
equipment delivered.
We reserve the right to make alterations without notice.

请保留本说明书以备日后参考



Please keep this manual for future reference

1 安全 / Safety

1 安全:

1.1 安全须知

从事本设备的安装、试运行、运行或维修的人员必须:

- 具有合格的专业资格
- 严格遵守本使用说明书

违章操作或错误使用可能导致:

- 严重的或致命的伤害
- 损坏本设备或用户的其它财产
- 降低本设备的效能

在安全须知上, 本说明书采用如下三种形式强调各种重要事项



警告

这是对生命和健康有一定危险的警示。忽视这种警示会导致严重的或致命的伤害。



注意

这是对本设备或用户其它设备有一定危险的警示。不排除严重的或致命的伤害。



提示

这是对某一事项的重要说明。

1.2 指定用途

远程温度显示器EI100 或 EI100/160可以远程显示人们需要的任何传感器信号。模拟及LCD显示屏用于显示模拟传感器信号。本装置只可在指定的安装位置上使用。

调试仪表前, 务必仔细查阅铭牌和操作使用说明书上的操作限定值。

1.3 设备操作的重要提示

用户必须遵守国家的健康及安全规章。

特别要强调的是, 如果工作是在带电的部件(直接接触会触电)上进行, 那么, 只有在这些部件断电后, 或者对它们进行了妥善的保护, 工作人员直接接触不到时, 这些工作才可以进行。

1 Safety

1.1 Safety instructions

All personnel involved in installation, commissioning, operation or maintenance of this equipment must:

- be suitably qualified and
- strictly observe these operating instructions.

Improper operation or misuse can lead to

- serious or fatal injury,
- damage to the equipment and other property of the user
- a reduction in the efficiency of the equipment.

Safety instructions in this manual are presented in three different forms to emphasize important information.



WARNING

This information indicates particular danger to life and health. Disregarding such a warning can lead to serious or fatal injury.



CAUTION

This information indicates particular danger to the equipment or other property of the user. Serious or fatal injury cannot be excluded.



NOTE

These notes give important information on a certain issue.

1.2 Specified application

The remote temperature indicator EI100 or EI100/160 permits the remote indication of any desired sensor signals. An analog and LCD display is used to show the analog sensor signals. The device may only be used at designated installation positions.

It is important to read and observe the limit values for operation indicated on the nameplate and in the operating instructions prior to commissioning the device.

1.3 Important notes on equipment operation

The user is obliged to comply with the national health & safety regulations.

It is especially emphasized that tasks performed on live, i.e. dangerous-contact components, are permissible only while these components are either de-energized or protected against direct contact.

电气安装须符合相关国家安全规定。为确保无故障操作的进行，必须连接保护导线。

2 产品规格

“远距离电子显示器EI100或EI100/160”用百分比显示任何所需传感器的温度或调制。这些信息通过模拟指针仪器和数字LCD显示屏显示出来。输入信号为4...20 mA。电压为24VDC。

EI100可安装在配电箱内（图1，安装夹紧带）或户外（图2，户外安装在支架上）。另外，配有拖动指针可手动重置。

EI100/160 安装在Ø160外壳上，和针式温度计一样，它可以装在安装板尾部（图3和4）的2个钻孔上。

EI100或EI100/160 是 EPT202数字式温度计、带温度传感器(TT=4...20mA)的指针式温度计的最理想的配件，它们还可以和“信号转换器TT30”一起使用显示变压器控制箱内的油位。

根据用途的不同，数值可以用百分比或摄氏温度来表示。

Electrical installation is subject to the relevant national safety regulations. It is imperative to connect the protective conductor in order to ensure trouble-free operation.

2 Product specification

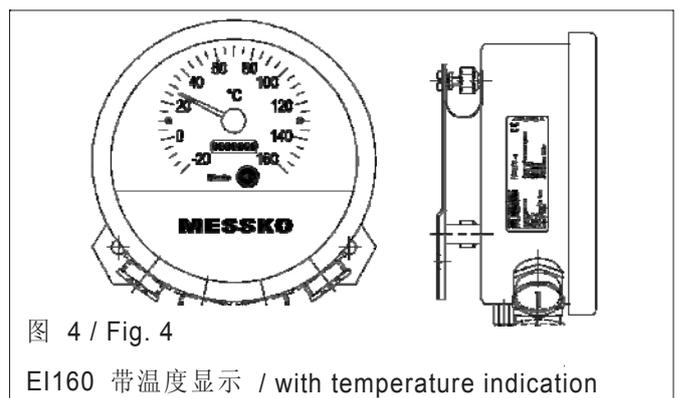
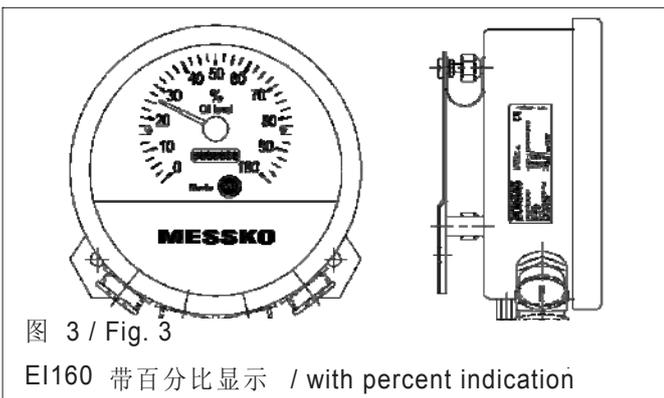
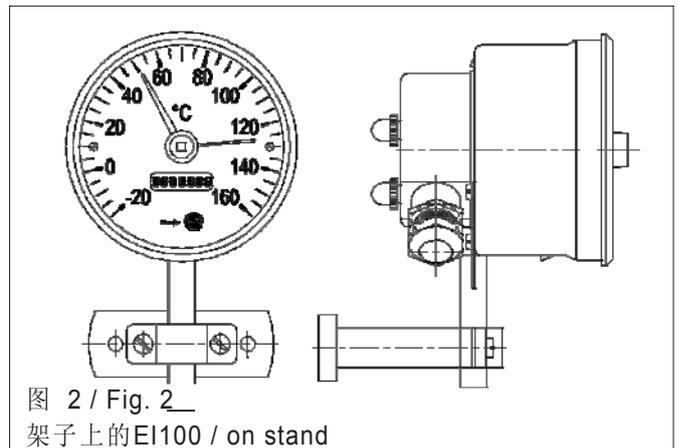
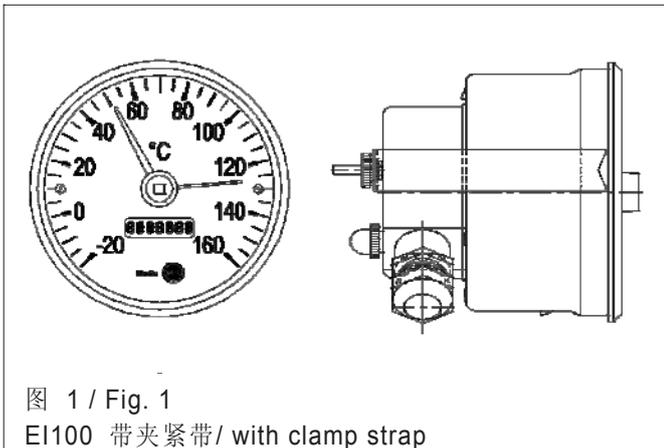
The “remote electronic indicator EI100 or EI100/160” shows the temperature or a modulation in percent of any desired sensor. This is indicated by an analog pointer instrument and a digital LCD display. The input signal is 4...20 mA. The voltage supply is 24 VDC.

The EI100 can be mounted in the switching cabinet (figure 1, clamp strap mounted) or outside (figure 2, outdoors on stand). In addition, it is equipped with a drag pointer which can be reset by hand.

The EI100/160 is installed in a Ø160 housing and, as with the pointer thermometer, can be mounted with 2 bored holes on the rear mounting plate (figures 3 and 4).

The EI100 or EI100/160 is the ideal accessory for the digital thermometer EPT202, the pointer thermometer with temperature transmitter (TT=4...20mA) and can also be used in combination with the “Signal Converter TT30” to indicate, for example, the oil level in the control box on the transformer.

The values can be indicated in percent or in degrees centigrade according to the application.



3 安装



注意

必须严格遵循按照该手册中规定的操作和安装条件

3 Installation



CAUTION

The operating and installation conditions demanded by this installation and operating manual must be strictly complied with.

按附录中尺寸图来安装EI100 或 EI100/160。

- 架子上的EI100, 图7, 第9页
- 配夹紧带的EI100, 图8, 第10页
- EI100/160, 图9, 第10页

Mount the EI100 or EI100/160 as shown in the dimensional drawings in the appendix.

- EI100 on stand, figure 7, page 9
- EI100 with clamp strap, figure 8, page 10
- EI100/160, figure 9, page 10

4 电气连接



注意

本装置的安装、电气接线、试运行和维护必须由合格的技术人员按本使用说明书进行。保证本装置仅用于指定的用途由用户负责。为安全起见, 事先未经MESSKO公司同意, 不得在设备的安装、设备改进和更换、电气接线或试运行上擅自进行任何作业。



CAUTION

Installation, electrical connection, commissioning, and maintenance of the device may only be carried out by qualified, skilled personnel and only in accordance with these operating instructions.

It is the responsibility of the user to make sure that the device is used for the specified application only.

For safety reasons, any unauthorized and improperly executed work, i.e. installation, modification, alteration of the equipment, electrical connection, or commissioning of the equipment, are forbidden without first consulting Messko!

4.1 24VDC电源

按电路图(图5, EI100或图6, EI100/160)将电源接到+和-接线端子上。注意: 连接时线路必须断电。仪器的连线完全接好前切勿重新通电。

4.1 Power supply 24 VDC

Connect the power supply as shown in the circuit diagram (figure 5, EI100 or figure 6, EI100/160) to the + and - terminals. Caution: The lines must be de-energized during connection. Do not reconnect the power supply until the device is completely connected.

4.2 传感器输入4...20mA

连接传感器4...20mA信号有两种方式:

- I1 无源传感器, 自身无电源
 - I2 有源传感器或 4...20mA 电流电路
- 这两种连接都要切记传感器的最大载荷。

4.2 Sensoreingang 4...20mA

There are two ways to connect the 4...20mA signal of the sensor.

- I1 Passive sensor, without own power supply
 - I2 Active sensor or active 4...20mA current circuit
- With both types of connection, remember the maximum load of the sensor.

传感器输入 I1 (无源)

Sensor input I1 (passive)

无源输入传输的电压为24VDC。按电路图(图5, EI100或图6EI100/160)将线路连接到+和-接线端子上。

The passive input delivers a voltage of 24 VDC. Connect the lines as shown in the circuit diagram (figure 5, EI100 or figure6, EI100/160) to the + and - terminals.

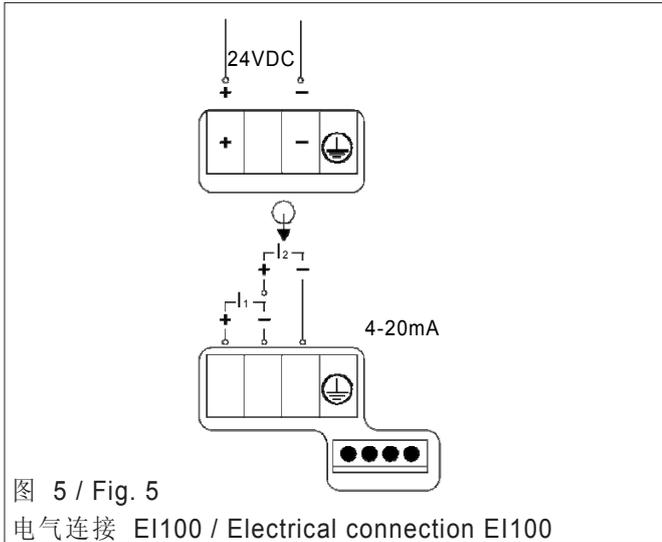


图 5 / Fig. 5
电气连接 EI100 / Electrical connection EI100

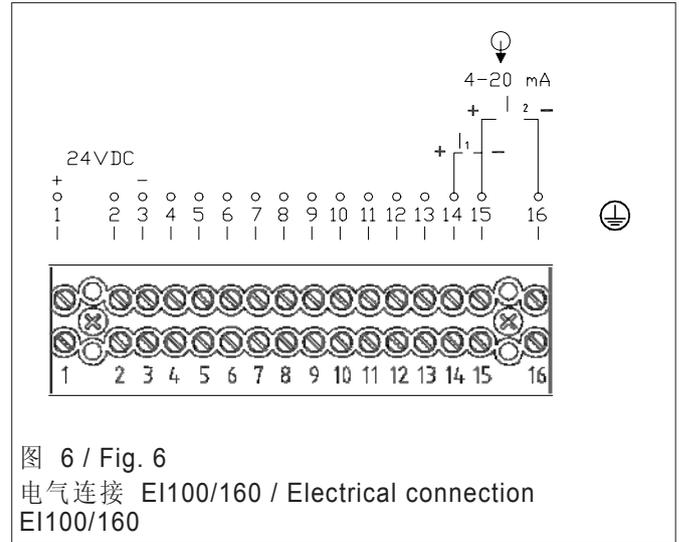


图 6 / Fig. 6
电气连接 EI100/160 / Electrical connection EI100/160

无源传感器示例:

- A) 油温
MT-ST 160 SK/TT 温度计或 Kombi-Hülse/TT
见第11页电流电路图8.1。
- B) 绕组温度
MT-ST 160W/TT 温度计或 ZT-F2/TT
见第12页电流电路图8.2。

传感器输入 I₂ (有源)

按电路图 (图5, EI100或图6EI100/160) 将线路连接到+和-接线端子上。

有源传感器示例:

- C) 油温
TT-PWM60传感器, EPT202数字式温度计
见第13页图 8.3
- D) 绕组温度
EPT202数字式温度计
见第14页电流电路图 8.4
- E) 油位
配TT30的MTO-STF160(G)油位显示器
见第15页, 电流电路图 8.5

Examples of **passive** sensors:

- A) Oil temperature
Thermometer MT-ST 160 SK/TT or combi-sleeve/TT See current circuit diagram 8.1, page 11
- B) Winding temperature
Thermometer MT-ST 160W/TT or ZT-F2/TT
See current circuit diagram 8.2, page 12

Sensor input I₂ (active)

Connect the lines as shown in the circuit diagram (figure 5, EI100 or figure 6, EI100/160) to the + and - terminals.

Examples of **active** sensors:

- C) Oil temperature
TT-PWM60 sensor, digital thermometer EPT202
See current circuit diagram 8.3, page 13
- D) Winding temperature
Digital thermometer EPT202
See current circuit diagram 8.4, page 14
- E) Oil level
Oil level indicator MTO-STF160(G) with TT30
See current circuit diagram 8.5, page 15

注意

4...20 mA 输入信号范围必须与传感器和所有已连接好的装置的铭牌上参数相匹配。

CAUTION

The range of the input signal 4...20mA must match the information on the nameplate of the sensor and all connected devices.

示例

- MT-ST160SK/TT温度计铭牌
- 20 ... 140°C, 4 ... 20 EI 100铭牌
- 20 ... 140°C, 4 ... 20 mA

Example:

- Name plate Thermometer MT-ST160SK/TT
- 20 ... 140 ° C, 4 ...
- 20mA Name plate EI
- 100
- 20 ... 140 ° C, 4 ... 20mA

5. 功能测试

- 按第8章的电路图检查EI100或EI100/160的电气连接。
- 接通电源，显示的数值必须与传感器上的数值相一致。
- 从已经连接好的设备的参数表上查出公差。

6. 技术参数

EI100外壳

尺寸	Ø 100
材料	不锈钢
安装	夹紧带或架子
保护等级	IP 55 按照 IEC 529
显示	1x 指针 (模拟), 1x 可重置手动拖动指针 1x LCD显示 (数字式), 8位, 7段 刻度: °C 或 %
螺纹接线端子:	接线端子截面积 1 - 1,5mm ²

EI100/160外壳

尺寸	Ø 160
材料	镀锌钢板, 涂漆, 色标RAL7033 (水泥灰)
安装	墙上
保护等级	IP 55 按照 IEC 529
显示	1x指针 (模拟), 1x LCD显示 (数字式I), 8位, 7 段 刻度: °C 或 %
螺纹接线端子	接线端子区域 1 - 2,5mm ²

温度范围

运行	-20...+80° C
存放:	-40...+80° C

输入

电源	17 VDC...30 VDC 未稳压 最大残余纹波系数10 % 极性颠倒保护
电流消耗	最大 100mA
绝缘电压	500 V, 50/60 Hz, 1 min,
测量输入	电流 4...20mA, 订货时要确定测量范围
测量值获取	分辨率 12-Bit, 扫描率 20ms

Spannungsabfall:	max. 50mV am Messeingang
传感器电源	电源 UV - ca. 3V (无源传感器输入)

5. Function test

- Check the electrical connection of the EI 100 or EI100/160 using the circuit diagram in chapter 8.
- Switch on the power supply. The value shown must correspond to the value of the sensor.
- Take the tolerances from the data sheets of the equipment that is connected.

6. Technical data

Housing EI100

Dimension:	Ø 100
Material:	Stainless steel
Mounting:	Clamp strap or stand
Degree of protection:	IP 55 as per IEC 529
Indication:	1x pointer (analog), 1x resettable drag hand, 1x LCD display (digital), 8-position, 7-segment Scale: °C or %
Screw terminals:	Terminal area 1 - 1.5mm ²

Housing EI100/160

Dimensions:	Ø 160
Material:	Galvanized steel plate Painted, RAL 7033 (cement grey)
Mounting:	Wall mounting
Degree of protection:	IP 55 as per IEC 529
Indication:	1x pointer (analog), 1x LCD display (digital), 8-position, 7-segment Scale: °C or %
Screw terminals:	Terminal area 1 - 2.5mm ²

Temperature range

Operation:	-20...+80° C
Storage:	-40...+80° C

Input

Power supply:	17 VDC...30 VDC unregulated, Max. of 10 % residual ripple, Protected against pole reversal
Current consumption:	Max. of 100mA
Insulation voltage:	500 V, 50/60 Hz, 1 min, Measuring leads against ground
Measuring input:	Current 4...20mA, Define measuring range when ordering
Meas. value acquisition:	12-bit resolution, scanning rate 20ms
Spannungsabfall:	max. 50mV am Messeingang
Sensor power:	Power supply U _V - ca. 3V (for passive sensor input)

测试报告

测试	标准
持续载荷容量	VDE 0435 Teil 303
短期电流	VDE 0435 Teil 303
故障稳定性: 碰撞	IEC 61000-4-4
故障稳定性: HF	IEC 61000-4-6
故障稳定性: 放电	IEC 61000-4-2
故障稳定性: 切断电源	IEC 61000-4-11
故障稳定性: 波动	IEC 61000-4-5
故障稳定性: 磁场	IEC 61000-4-8
冷	IEC 60068-2-1
干热	IEC 60068-2-2
湿热, 恒定的	IEC 60068-2-3
湿热, 周期性变化的	IEC 60068-2-30
倾斜及翻倒	IEC 60068-2-31
自由下落	IEC 60068-2-32
绝缘测试	IEC 60255-5

Testing Reports:

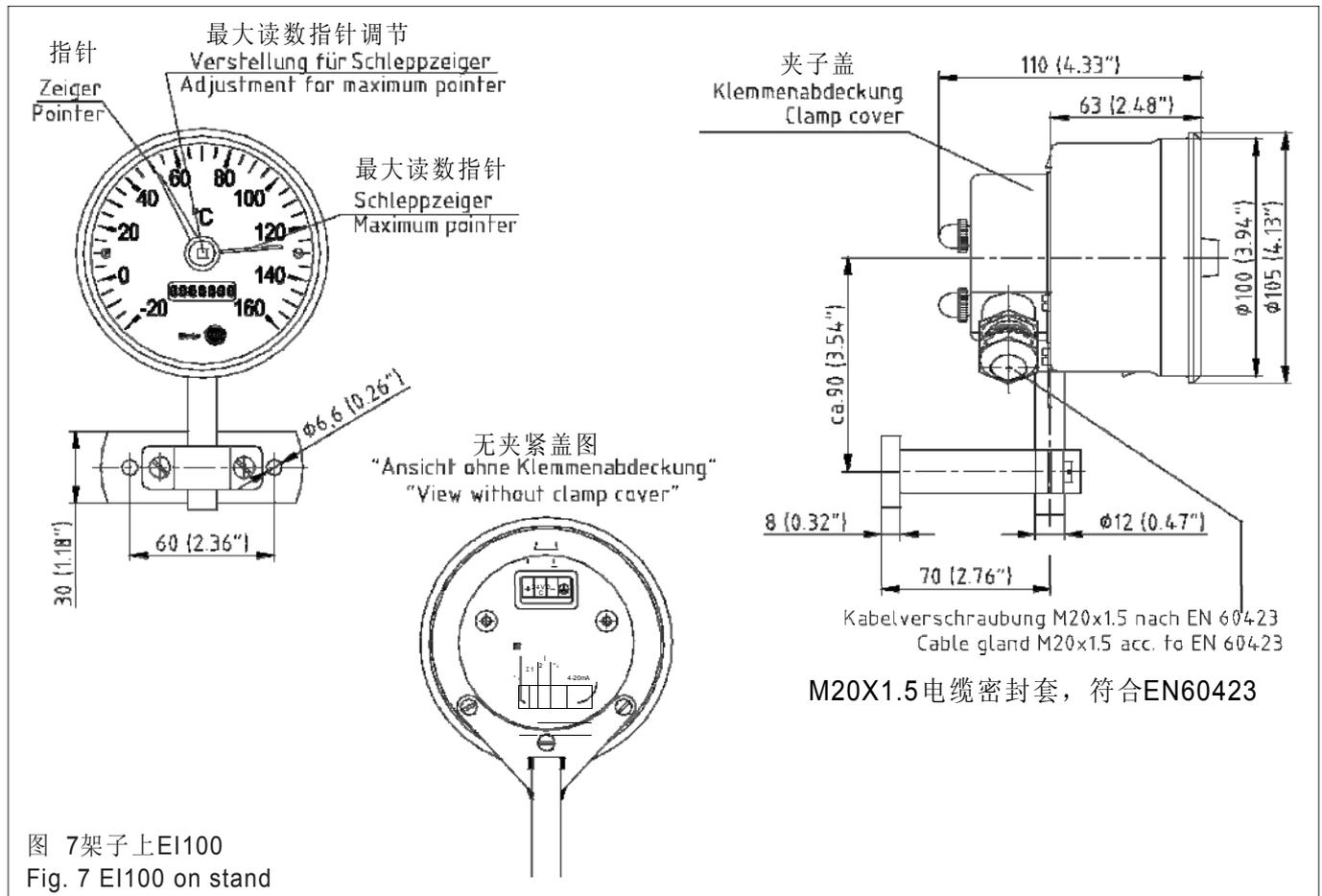
Test	Standard
Sustained load capacity	VDE 0435 part 303
Short-term current	VDE 0435 part 303
Fault stability: impulses	IEC 61000-4-4
Fault stability: HF	IEC 61000-4-6
Fault stability: discharge	IEC 61000-4-2
Fault stability: power cut	IEC 61000-4-11
Fault stability: surge	IEC 61000-4-5
Fault stability: magnetic fields	IEC 61000-4-8
Cold	IEC 60068-2-1
Dry Heat	IEC 60068-2-2
Damp Heat, constant	IEC 60068-2-3
Damp Heat, cyclical	IEC 60068-2-30
Tipping and falling over	IEC 60068-2-31
Free fall	IEC 60068-2-32
Power insulation test	IEC 60255-5

7 尺寸图

7 Dimensional drawings

7.1 架子上的EI100

7.1 EI100 on stand



7.2 配夹紧带的 EI100

7.2 EI100 with clamp strap

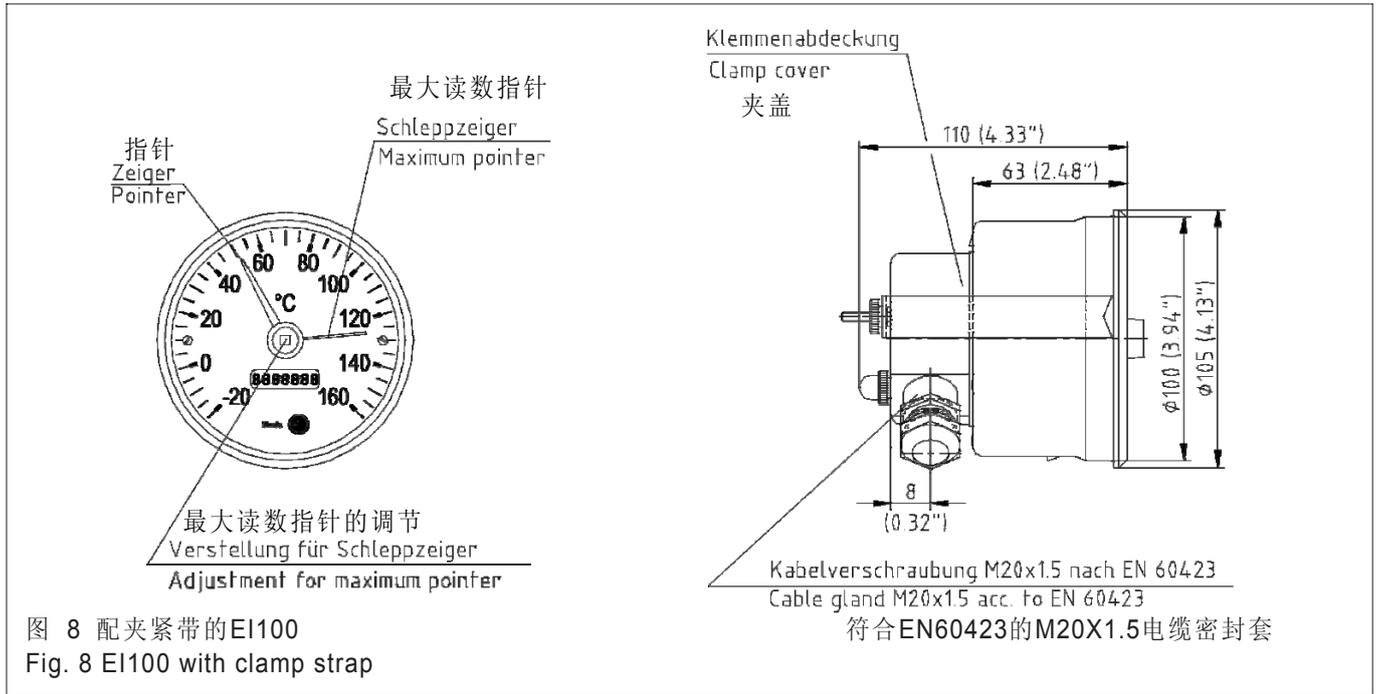
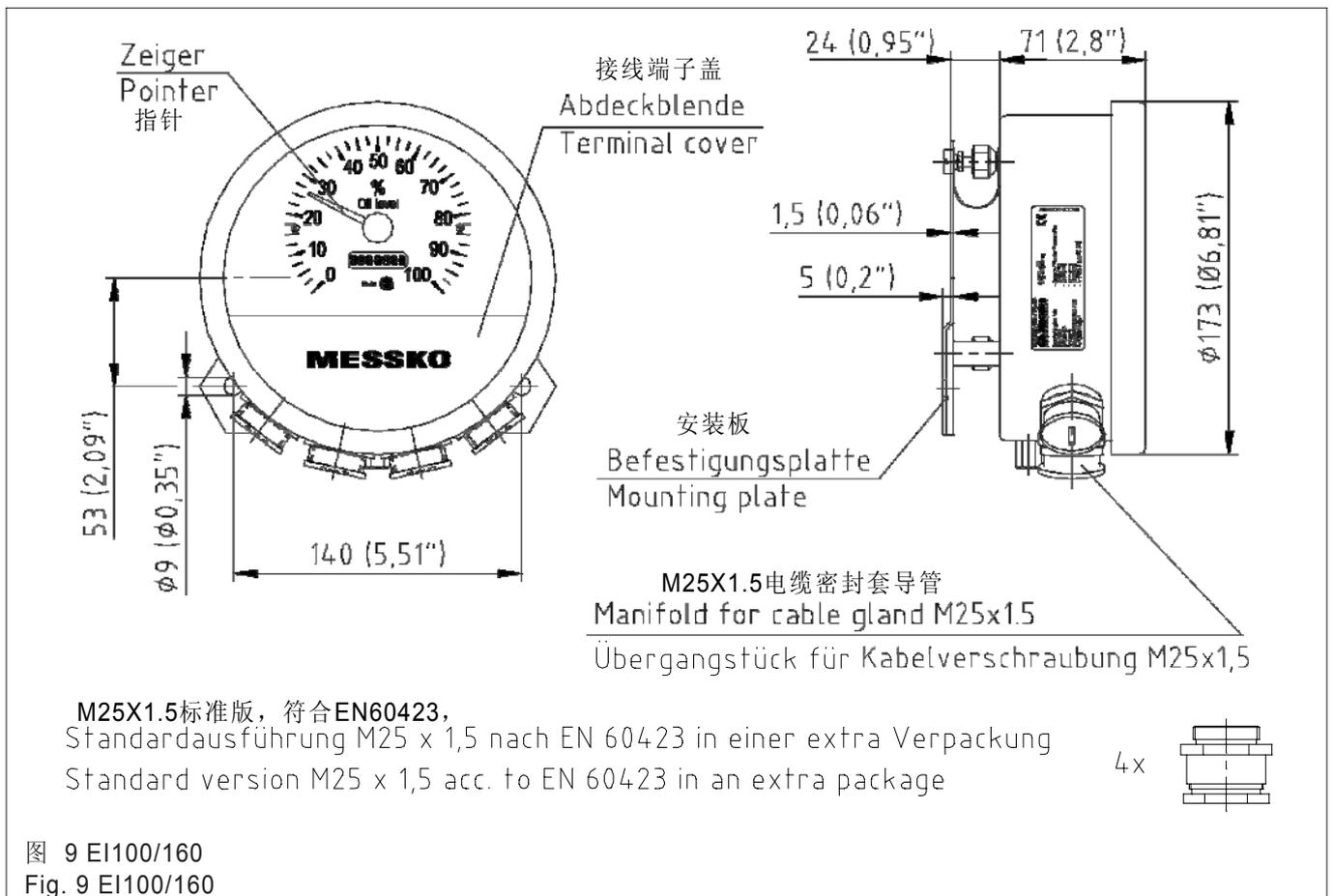


图 8 配夹紧带的EI100
Fig. 8 EI100 with clamp strap

7.3 EI100/160

7.3 EI100/160



M25X1.5标准版, 符合EN60423,
Standardausführung M25 x 1,5 nach EN 60423 in einer extra Verpackung
Standard version M25 x 1,5 acc. to EN 60423 in an extra package

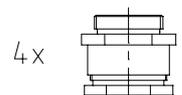


图 9 EI100/160
Fig. 9 EI100/160

8 电路图

8.1 油温, 无源传感器

8 Circuit diagrams

8.1 Oil temperature, passive sensor

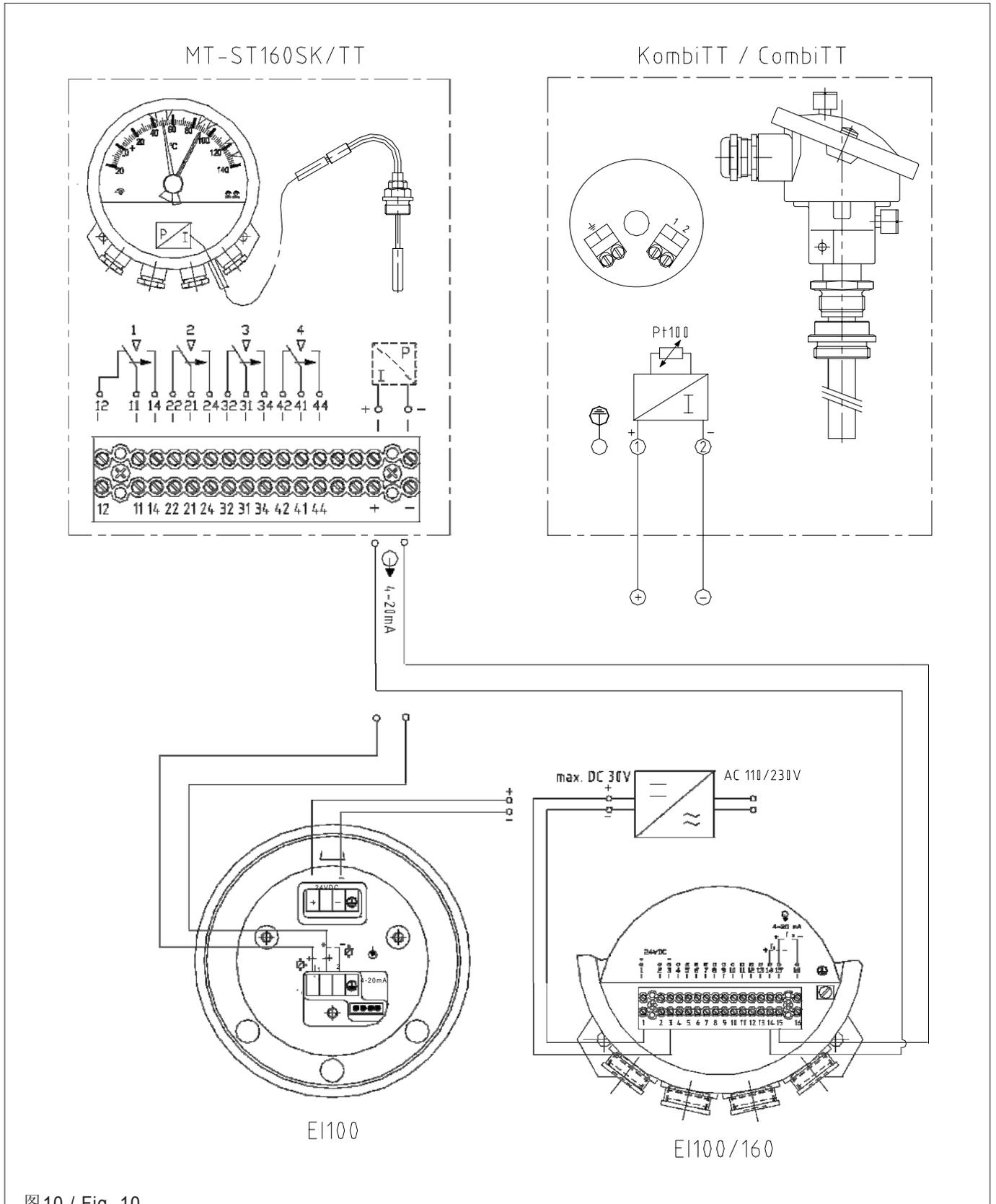


图10 / Fig. 10

8.2 绕组温度，无源传感器

8.2 Winding temperature, passive sensor

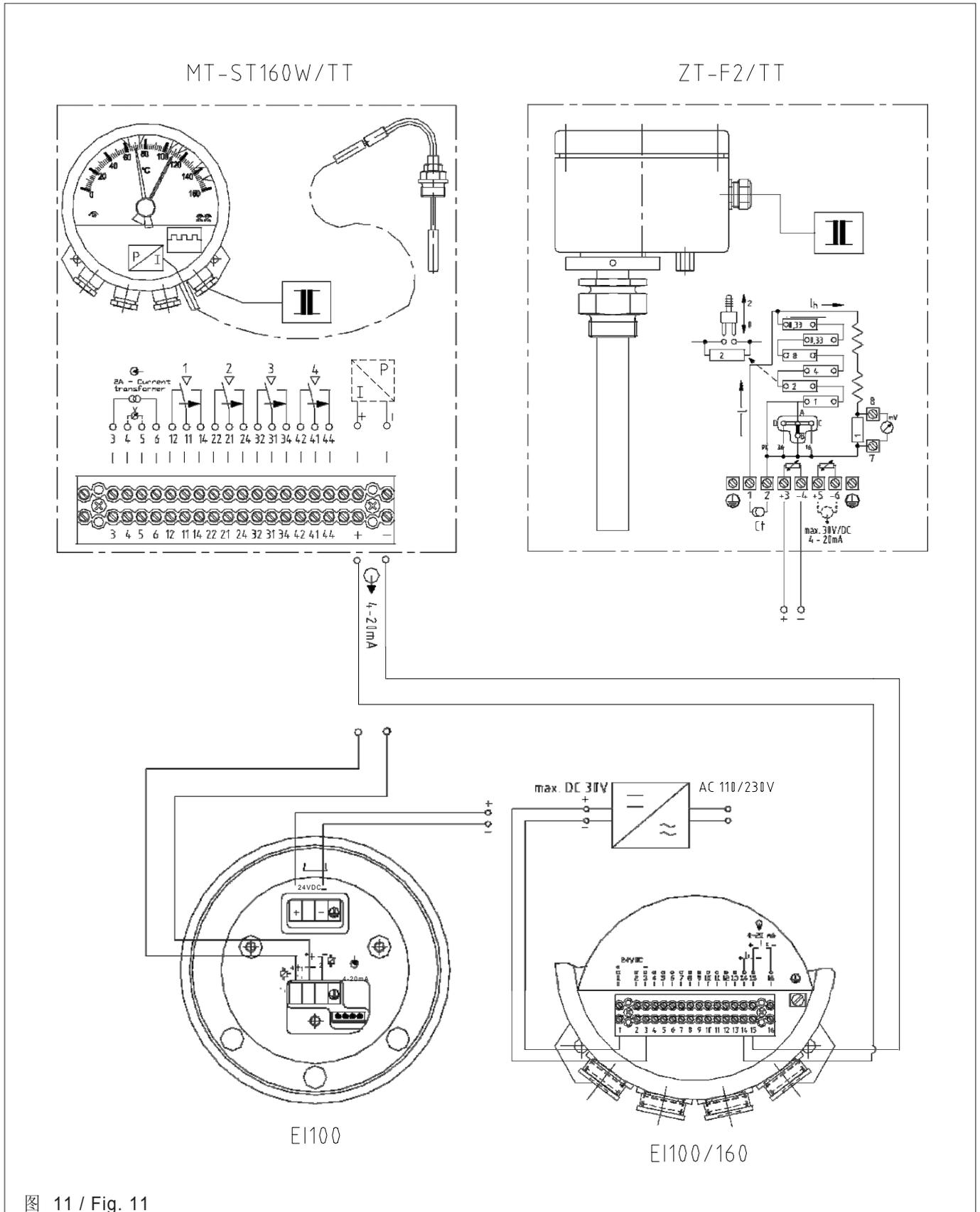


图 11 / Fig. 11

8.3 油温，有源传感器

8.3 Oil temperature, active sensor

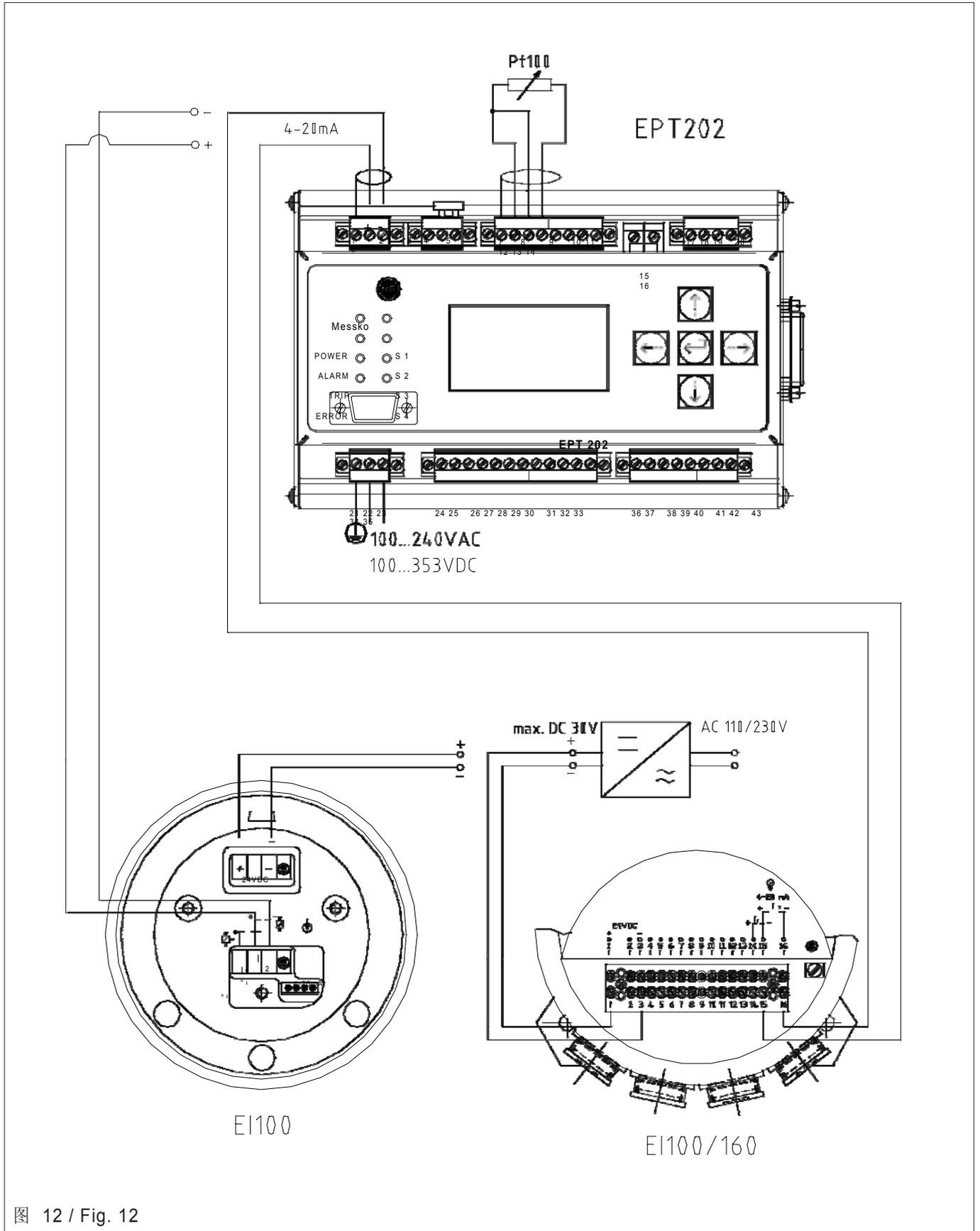


图 12 / Fig. 12

8.4 绕组温度，有源传感器

8.4 Winding temperature, active sensor

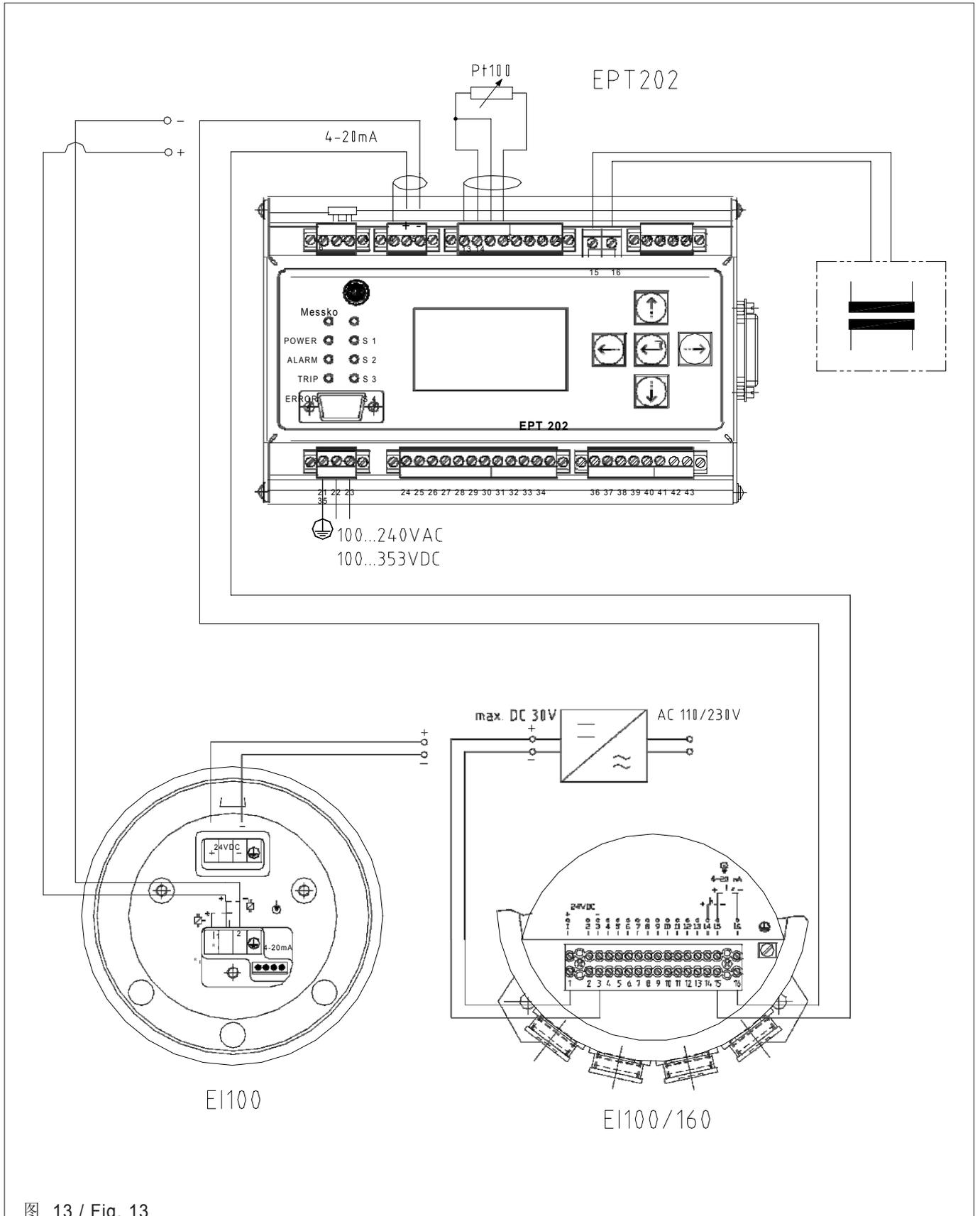


图 13 / Fig. 13

8.5 油位, 有源传感器

8.5 Oil level, active sensor

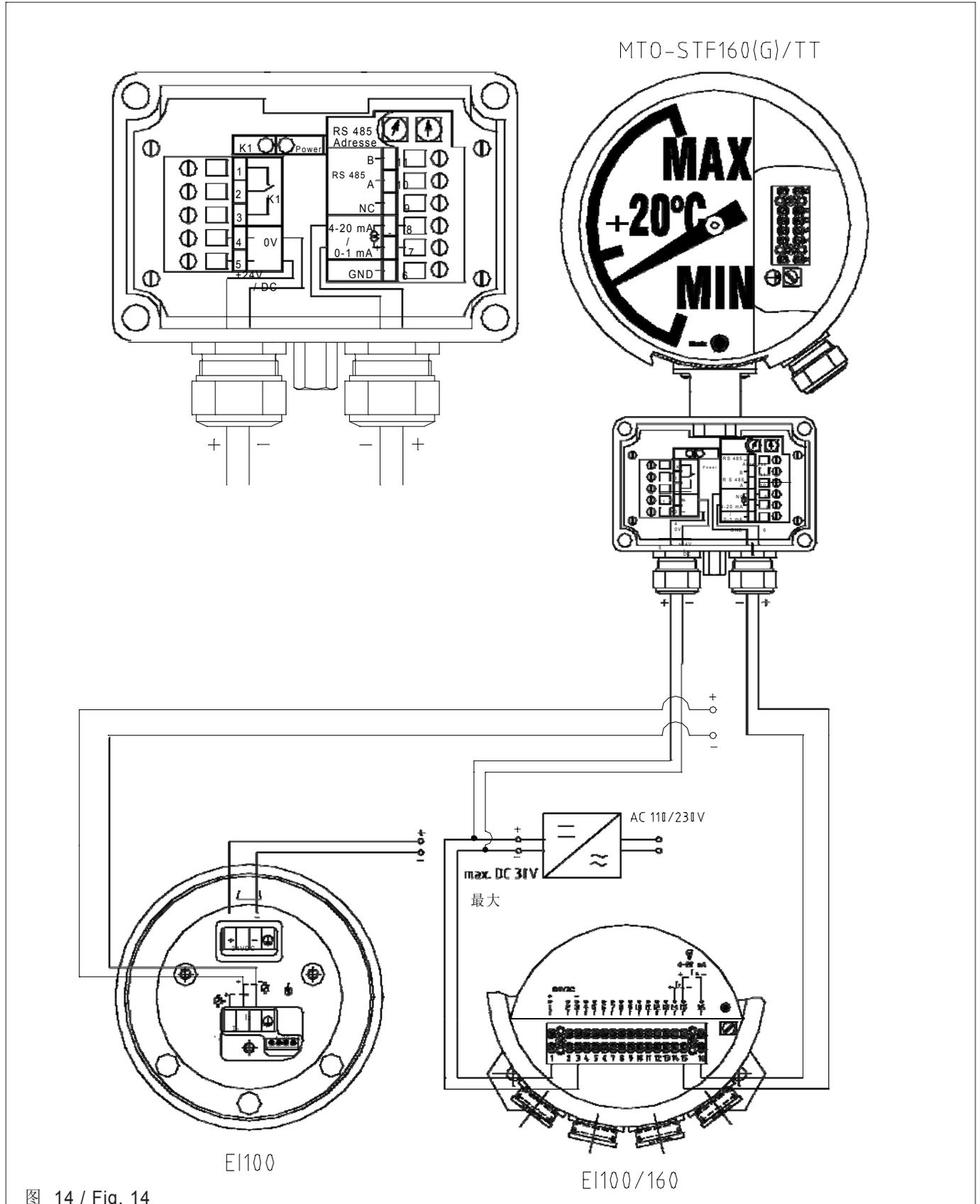


图 14 / Fig. 14

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