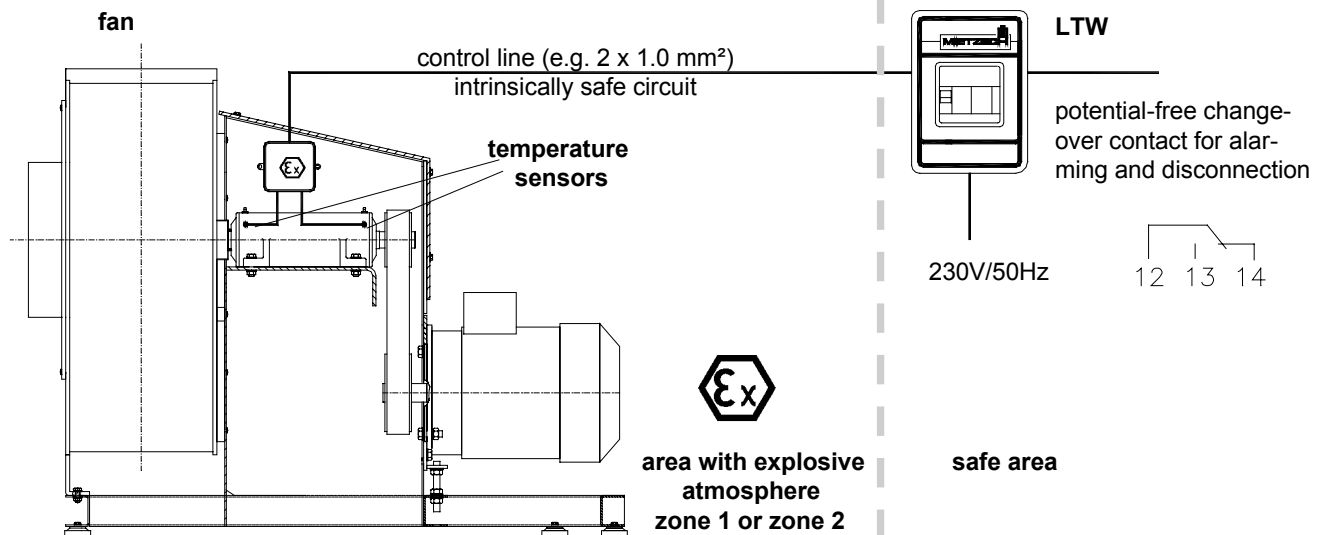


Bearing temperature monitor

Type LTW-1

Technical description

MIETZSCH



Application

Belt-driven fans used in **explosive atmosphere (Ex area)** require the bearings to be checked in regular intervals. Premature bearing failures cannot be excluded in spite of sufficient dimensioning, exact manufacture, and adequate lubrication of the antifriction bearings. Resultant temperature increase makes a bearing a possible source of ignition. This is the reason why standard EN 13463 prescribes regular manual or automatic monitoring of bearings used in explosive atmosphere. The LTW and its pertaining measuring points in the fan bearing are monitoring the antifriction bearing temperatures continuously and automatically. The complete fan can be positioned in the Ex area (zone 1 or zone 2) whereas the LTW has to be arranged in the safe area, i.e. outside the Ex area.

The connection has to be made as intrinsically safe circuit according to DIN-EN 60079-14.

The device can also be employed for supervision of bearings on standard fans working in the safe area outside the Ex area. This may be sensible e.g. in cases demanding high working reliability or if access to the fan is complicated and manual inspection difficult.

Technical description

Both antifriction bearings of the fan are equipped with temperature sensors (PTC resistors). They are series-connected through a two-wire control line to terminals 10 and 11 of the LTW. Impermissibly high temperature in one of the two bearings makes the triggering device in the LTW respond. The LED lights up and the changeover contact switches over (terminals 12 and 14 are connected).

The user decides which measures have to be taken in cases of average. Usually it will be sensible to initiate alarm, to disconnect the fan, and to interrupt the process which led to the explosion risk. In any case the fan has to be inspected after an alarm. Repairs have to be performed. Temperature monitoring is reactivated by actuation of the reset key. The plant must not be restarted earlier.

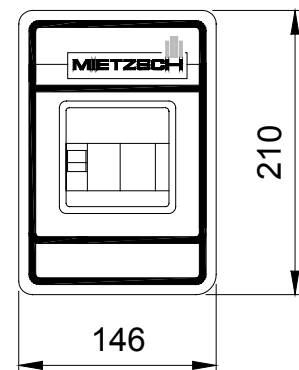
It should be considered that a fault in the sensor line (cable break or short circuit) will also be interpreted as a failure and lead to triggering.

Technical data

nominal voltage	230 V / 50 Hz
power required	< 2 VA
sensor connection	1 ... 6 PTC resistors connected in series
triggering device	with ATEX-approval according to directive 94/9/EC
output	potential-free changeover contact
maximum output load	3 A AC 15 250 V; 2A DC 13 24 V
housing	plastic, IP 65, with click-in closing 146 mm x 210 mm x 111 mm
cable inlet	top/bottom
permissible temperature	-20 ... +50 ° C
weight	1 kg

More details will be found in the instruction manual for the triggering device.

Dimensions



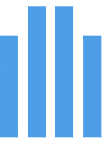
Special designs

monitor for several fans
fan control LS96-LTW with motor protection and temperature monitoring

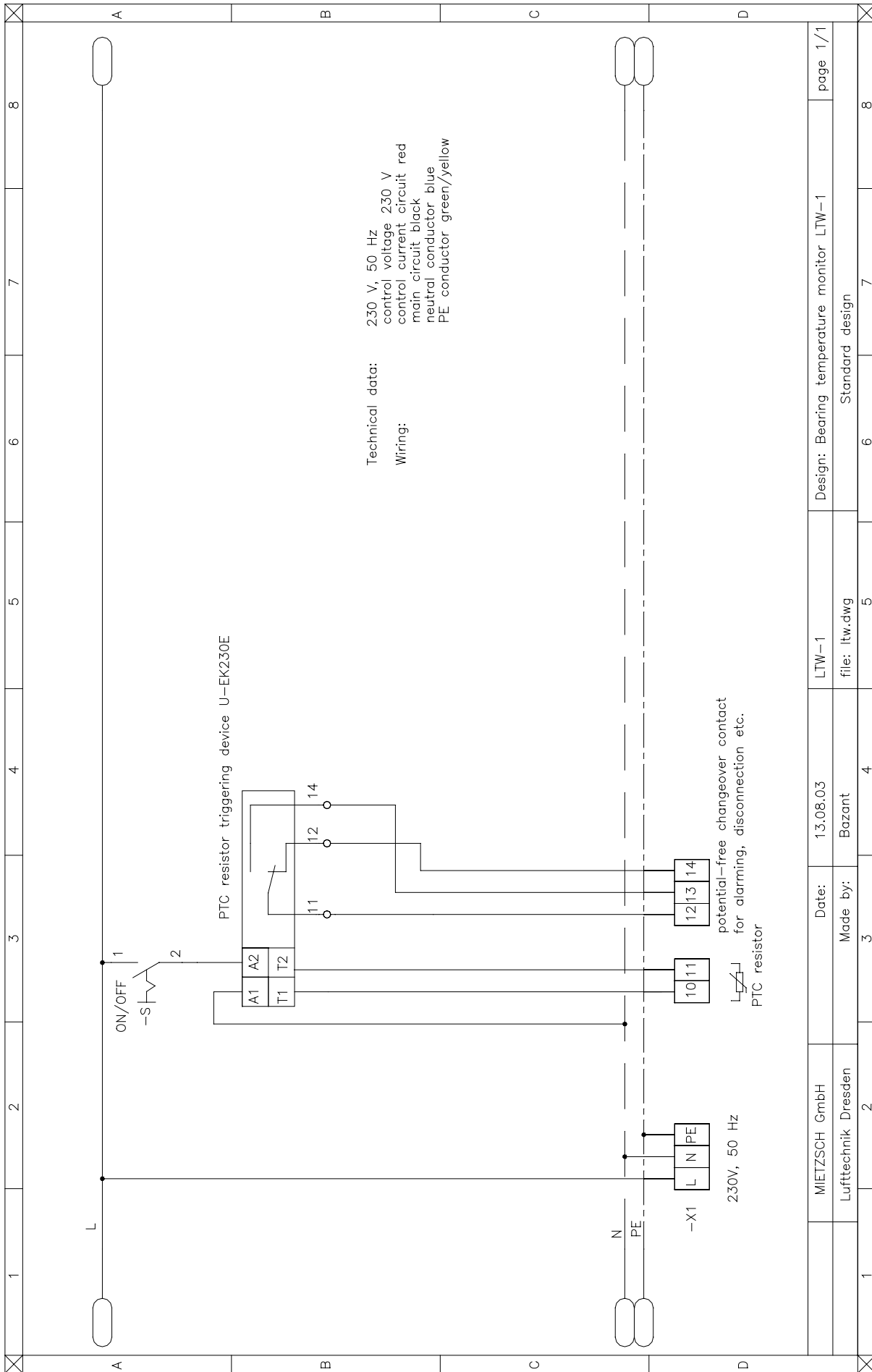
Bearing temperature monitor

Type LTW-1

Technical description



MIETZSCH



Technical data: 230 V, 50 Hz
 control voltage 230 V
 control current circuit red
 main circuit black
 neutral conductor blue
 PE conductor green/yellow

Wiring:

1	2	3	4	5	6	7	8
MIETZSCH GmbH			Date: 13.08.03	LTW-1		Design: Bearing temperature monitor LTW-1	
Lufttechnik Dresden			Made by: Bazant	file: ltw.dwg		Standard design	
1	2	3	4	5	6	7	8
				page 1/1			

ltw_en (03/05)