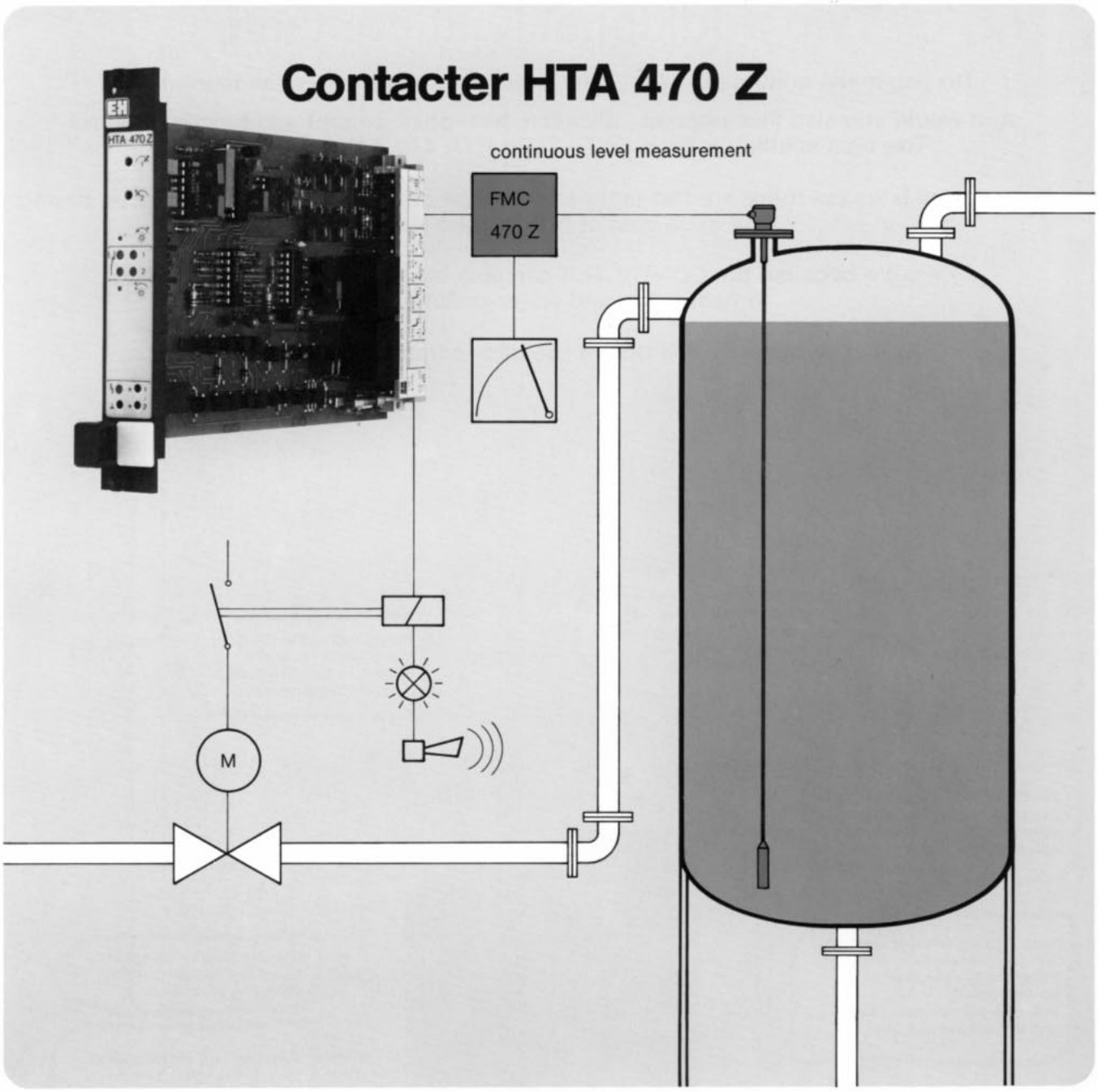
Contacter HTA 470 Z



CONTACTER HTA 470 Z
for two independent limit contacts

An ultra-compact module from the RACKSYST series for a 19" rack

Level Alarm – Two-point Control – Overspill Prevention

in level, flow and moisture measurement

Endress + Hauser GmbH + Co.

P.O. Box 1261, D-7864 Maulburg
☎ (07622) 28-0, Tx 773226, Fax (07622) 28438

Industrial Measurement

Level, Flow, Moisture and Analytical Measurement

Two additional limit contacts

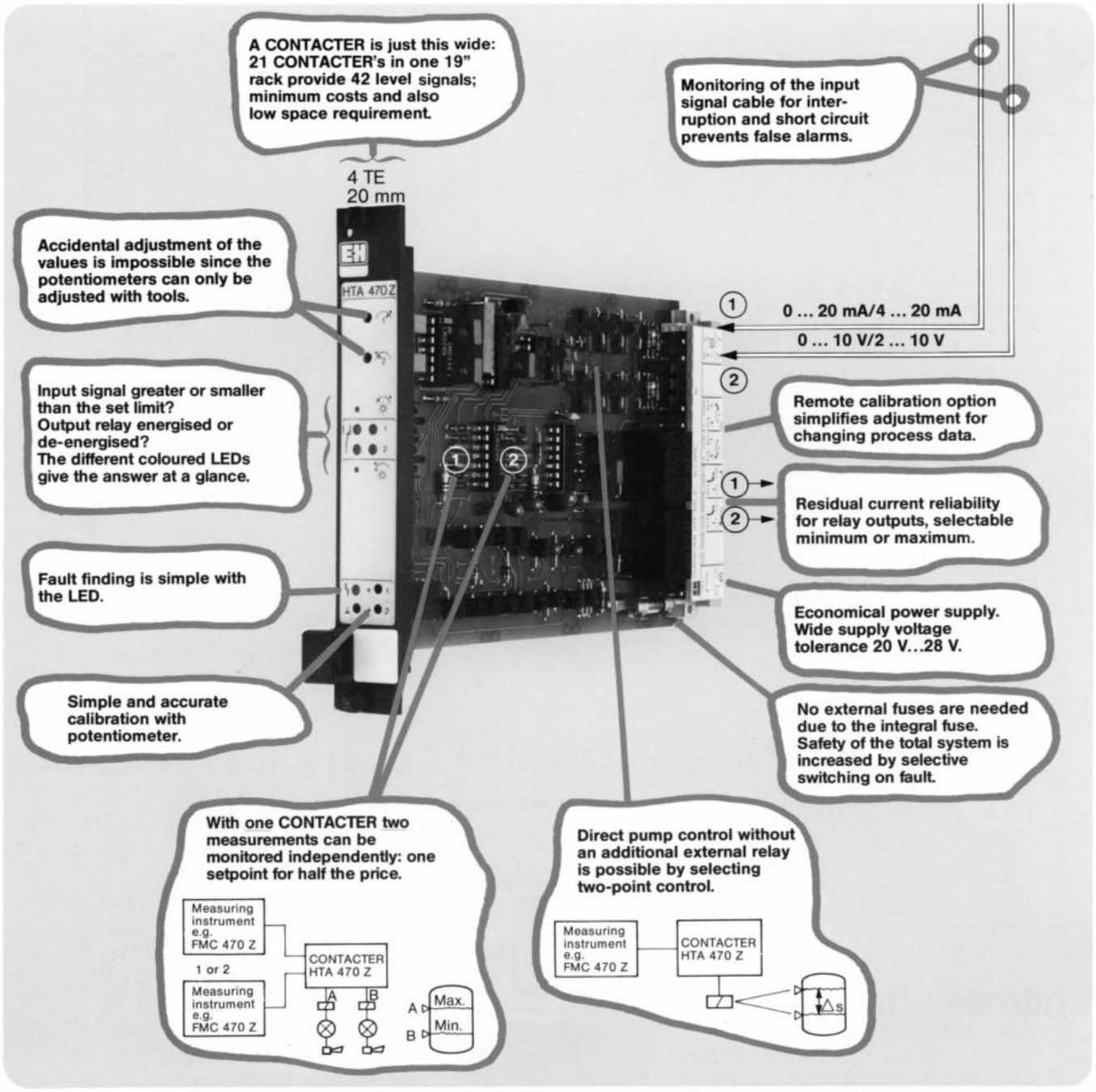
Do you make continuous level, flow, moisture and pressure measurements?

And would you also like setpoint indication, two–point control and function control? The best solution is the CONTACTER HTA 470 Z Setpoint Controller.

<u>Economical</u> because there are two independent limit contacts but no extra sensor, saving the extra cost of flanges and installation.

<u>Reliable</u> because the CONTACTER can also be applied for level detection in flammable and water-pollutant liquids.

<u>Attractive</u> because it is one of the ultra-compact RACKSYST series.



What comprises the measuring system?

The complete measuring system comprises one or two continuous measuring instruments with voltage output or current output and the CONTACTER HTA 470 Z.
The CONTACTER HTA 470 Z connected to a SILOMETER FMC 470 Z is certified by VAwS (German Water Economy Law) as an overspill prevention alarm for non-flammable water pollutants, and by VbF for flammable liquids.

How does the instrument work?

The CONTACTER HTA 470 Z incorporates two independent circuits, i.e. two CONTACTER's are combined in one module; only the power supply and fault recognition function are common. See also Fig. 3. The CONTACTER HTA 470 Z is a universal module. All the functions described below are already fitted and can be freely selected.

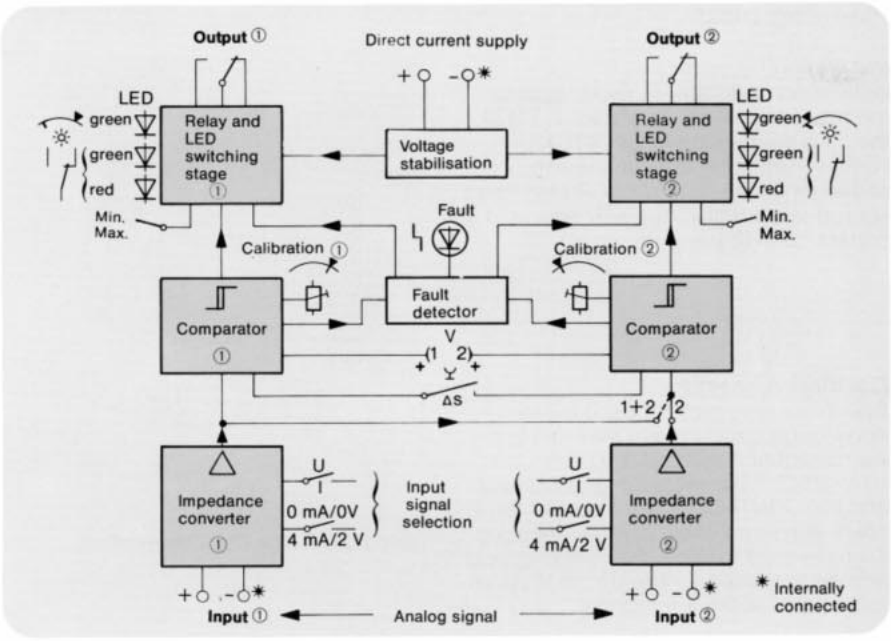


Fig. 3 △
Circuit diagram CONTACTER HTA 470 Z.

What operating modes are possible?

1. Double Setpoint Controller with two completely independent circuits for each setpoint; the relay for each circuit can be operated in either minimum or maximum mode. Fixed switching hysteresis approx. 1.5 %.
2. Double Setpoint Controller with common input for two setpoints, e.g. for pump control and overspill alarm or for minimum or maximum alarm.
3. Two-point Controller with infinitely adjustable hysteresis, e.g. for direct pump control or maintaining constant level (△s function).

It is always in the correct output safety mode

Minimum safety mode: The relay de-energises when the level falls below the setpoint or on mains failure.
Maximum safety mode: (overspill protection). The relay de-energises when the level rises above the setpoint or on mains failure.

By correctly selecting the safety mode, the output relay will always operate on closed contacts.
On the CONTACTER HTA 470 Z version with transistor output, the transistors are blocked in mode "relay de-energised."

Fault alarm is important for plant safety

The CONTACTER HTA 470 Z also has a fault detector to increase plant safety. In case of a fault the relay in the faulty CONTACTER circuit de-energises.

Fault alarm:

Input signal target	Actual signal or cable	mode
0 ... 10 V	<− 0.5 V >+10.5 V	
0 ... 20 mA	<− 1 mA >+21 mA	
2 ... 10 V	<+1.6 V > 10.4 V	Interruption or
4 ... 20 mA	<+3.2 mA > 20.8 mA	Short circuit

Fig. 4 ▽
The CONTACTER described here is part of the RACKSYST series – 19" modules manufactured by Endress + Hauser which are able to solve many measuring problems in a small space.

Fig. 5 ▽
The RACKSYST instruments (5) for level, moisture and flow measurement can be easily fitted in a 19" rack conforming to DIN 41494. Wiring in the rack is either:

– Wire-wrap pins (3)
– Termipoint connections
– Soldered connections (4) with
– Screwed terminals or flat pins

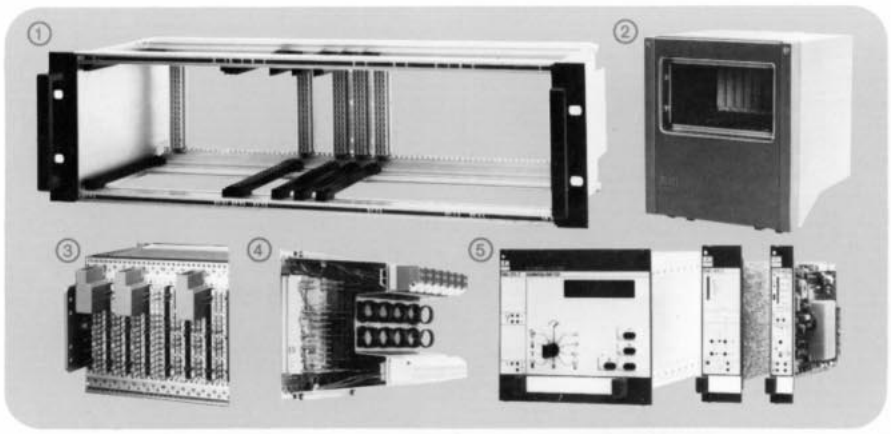


Fig. 6 ▽
A remote housing, conforming to Protection IP 65 is available. The rack is 42 pitch units wide (½19")

Planning hints

Installation
Installation preferably in racks outside the hazardous area. As shown in Fig. 8, the strip conforming to DIN 41612, Format F, must be connected with coded pins. The CONTACTER strip has appropriately drilled holes to ensure correct connection.

Electrical connection
Standard cable may be used for the connection between one measuring instrument and the CONTACTER HTA 470 Z. If the measuring instrument and the CONTACTER are installed far apart, screened cable is recommended if interference is likely. The cable should also be screened for the 0...10 V signal for remote calibration (option).

Special tip
To simplify planning we have prepared wiring diagrams and self-adhesive connection schematics which are available on request.

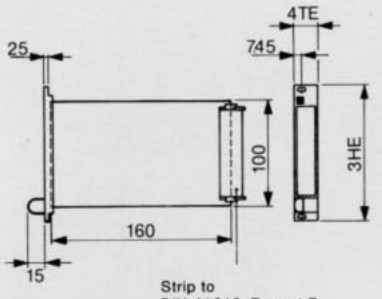


Fig. 7 △
CONTACTER HTA 470 Z dimensions.

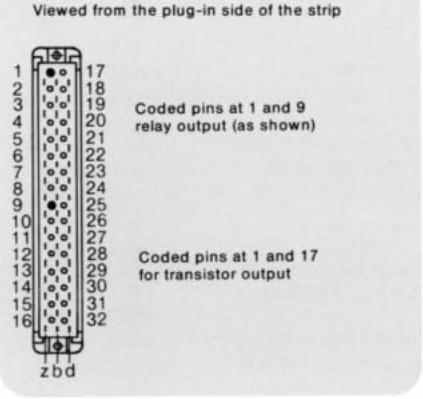
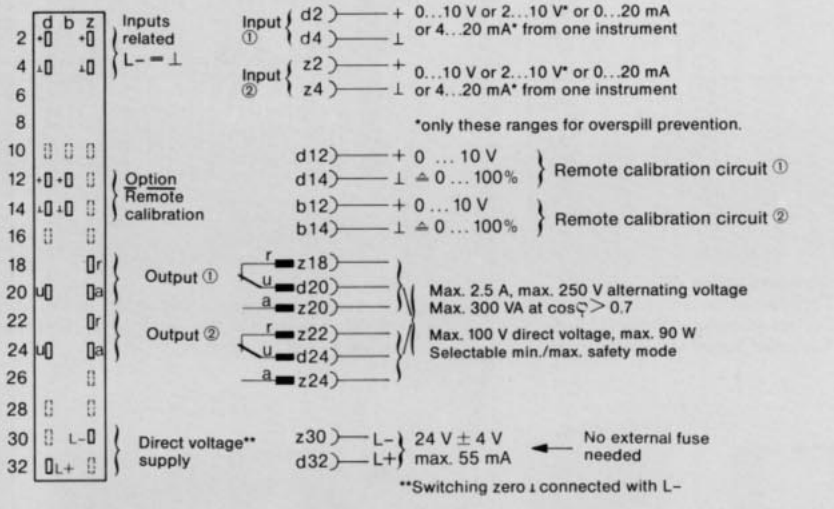


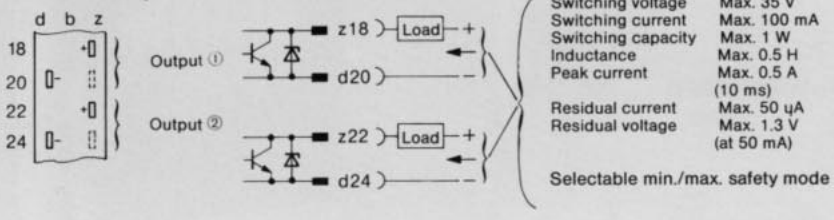
Fig. 8 △
Coded pins in the strip:
CONTACTER HTA 470 Z.

Fig 9 ▽
Connection as viewed from the strip connection side: CONTACTER HTA 470 Z.

CONTACTER HTA 470 Z with relay output



Version with transistor output (Open-Collector)



Mechanical construction:	RACKSYST card conforming to DIN 41494 (Europa card)
Dimensions:	see Fig. 7
Protection conforming to DIN 40050:	Front panel IP 20 Card IP 00
Max. ambient temperature (operation):	0°C...+70°C
Storage temperature:	–20°C...+85°C
Supply voltage:	24 V
Tolerance:	± 4 V
Superimposed alternating voltage:	± 4 V (within tolerance)
Direct current supply:	approx. 55 mA max. 70 mA
Integral fuse:	100 mA, medium blow
Inputs:	Not galvanically separated from supply
Input parameters U or I, selectable:	0...10 V, 2...10 V, 0...20 mA, 4...20 mA
Input resistance:	Voltage input: approx. 125 kΩ Current input: approx. 100 Ω
Switchpoint adjustment:	on instrument with 2 spindle pots
*Option:	Remote calibration by external voltage 0...10 V instead of integral trimmers
Switching hysteresis:	Individual to each circuit 1.5% fixed; with △s-function adjustable 1.5 %... 98.5 %
Reproducibility:	< 0.2 %
Outputs:	
Relay:	One relay per circuit with potential-free two-way contact
Switch delay:	approx. 0.6 s
Function indication:	6 LEDs on the front panel
Fault indication:	LED on front panel
Transistor output (option):	One per circuit by opto-coupler separate open collector output instead of relay

*Please state on order

Subject to modification

Endress+Hauser

Level, Flow, Moisture and Analytical Measurement