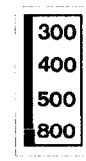
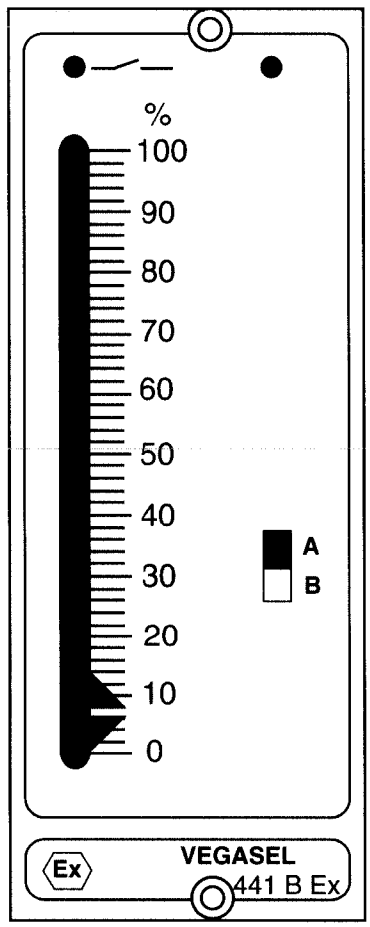
VEGASEL 441 B Ex
444 Ex

TIB • Technical Information • Operating Instructions

Auxiliary limit switch





For connection to signal conditioning instrument

- VEGAMET

VEGA Grieshaber KG
Electronic level measurement
Am Hohenstein 113
Postfach 11 42
D-77757 Schiltach
Phone 0 78 36/50-0
Fax 0 78 36/50-201

Application

VEGASEL 441 B Ex and 444 Ex are adjustable auxiliary level switches and are used for additional level signalling for continuous measurements.

The VEGASEL 441 B Ex has an adjustable switching hysteresis whereas the VEGASEL 444 Ex is provided with 2 independent relays. On the VEGASEL 444 Ex it is possible to adjust the min. and max. switch points independently.

In conjunction with a VEGA-signal conditioning instrument VEGAMET 407 Ex F ... the auxiliary level switches can be used independent of the level e.g. for min. / max. control, empty alarm, full alarm or alarm functions.

Attention:
Observe conformity certificate
PTB no. Ex-80/ 2160!

Configuration

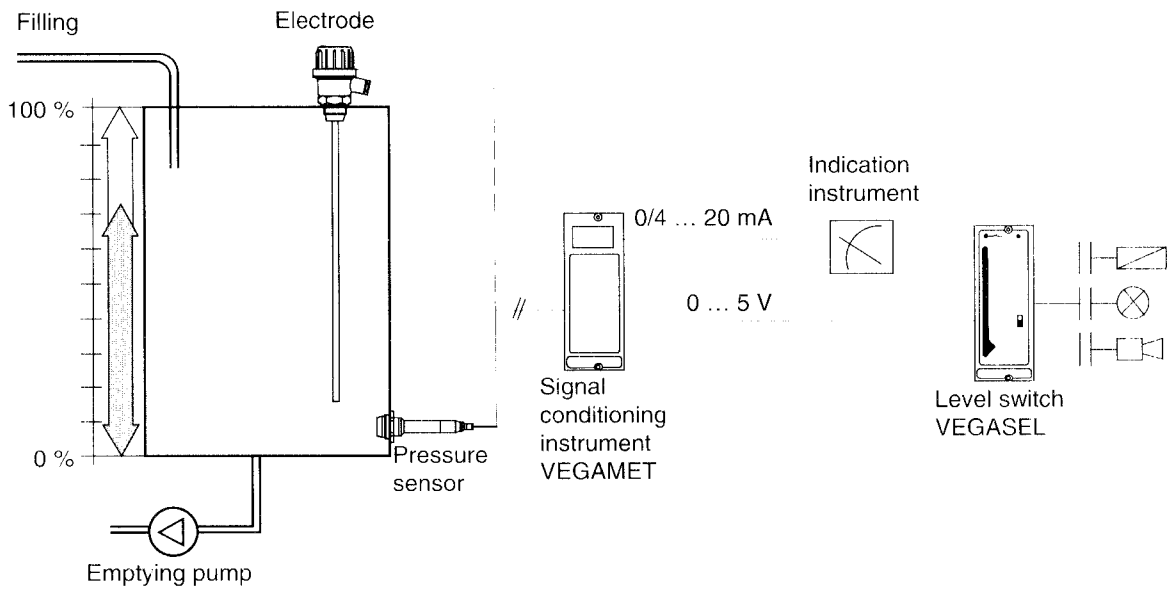
The VEGASEL 441 B Ex / 444 Ex consists of:

- plastic housing with plug-in socket (series 400)
- electronics
- relay output with floating spdt
  (VEGASEL 444 Ex: 2-times)
- front plate with:
  A/B-switch (VEGASEL 444 Ex: 2-times)
  slide potentiometer (VEGASEL 444 Ex: 2-times)
  relay control lamp (VEGASEL 444 Ex: 2-times)
  mains control lamp
  transparent cover (lockable)

A measuring system consists of:

- VEGASEL 441 B Ex or 444 Ex
- signal conditioning instrument
  VEGAMET 407 Ex F
- transducer (electrode or pressure sensor)

Attention:
VEGASEL 444 Ex has only **one** common input for both spdt.



Function

The output signal transmitted by a signal conditioning instrument VEGAMET is detected by an adjustable switching amplifier and converted into a switching command.

The switch point can be individually adjusted between 0 and 100 % via the slide potentiometer. The instrument operates as one-point level switch if both slides are set together to the requested percentage value (see "Start-up").

Technical data

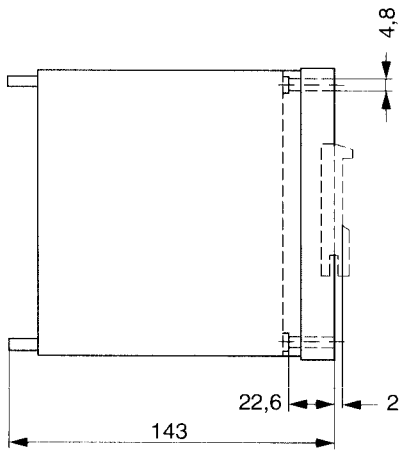
		Value	Tolerance	Frequency
Power supply				
	standard	AC 230 V	+5 % -15 %	50 / 60 Hz
	options	AC 110 V 130 V 240 V	+10 % -15 %	50 / 60 Hz
		AC 24 V 42 V 48 V	+10 % -15 %	50 / 60 Hz
Power consumption at U_N:		approx. 5 VA		
Voltage input		0 ... 5 V DC	Ri ≥ 100 kOhm	

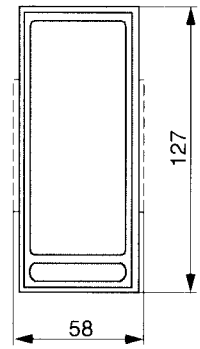
Output (standard)	type	relay output (VEGASEL 444: 2-times)	
	contact	1 spdt	
	function	level detection	
	mode	A / B	
	relay data:		
	contact material	AgCdO	AgCdO and Au plated
	min. turn-on voltage	12 V / 24 V	50 mV
	min. switching current	0,3 A/0,1 A	50 µA
	max. turn-on voltage	AC 250 V, DC 24 V / 60 V	
	max. switching current	AC 4 A, DC 4 A / 0,6 A	
	max. breaking capacity	125 VA, 60 W	

Switching point accuracy related to the scale value:	2 %
Hysteresis as one-point level switch	approx. 2 %
Hysteresis as two-point level switch	2 ... 100 % adjustable
Permissible operating temperature	-20 ... + 50°C
Storage and transport temperature	-20 ... + 70°C

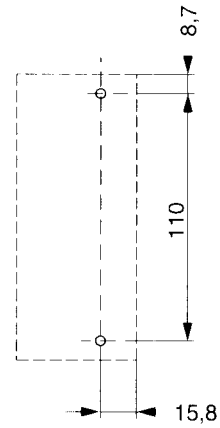
Housing	type	plastic ABS light grey
	protection	IP 40
	dimensions	W = 58 mm, D = 143 mm, H = 127 mm
Terminal board with plug-in socket		max. 1 x 1,5 mm^2
Weight incl. plug-in socket		approx. 700 g

Dimensional drawing





Dimensions in mm



Holes ø 4,5
or thread M4

Mounting instructions

The mounting assembly is provided as a standard feature with

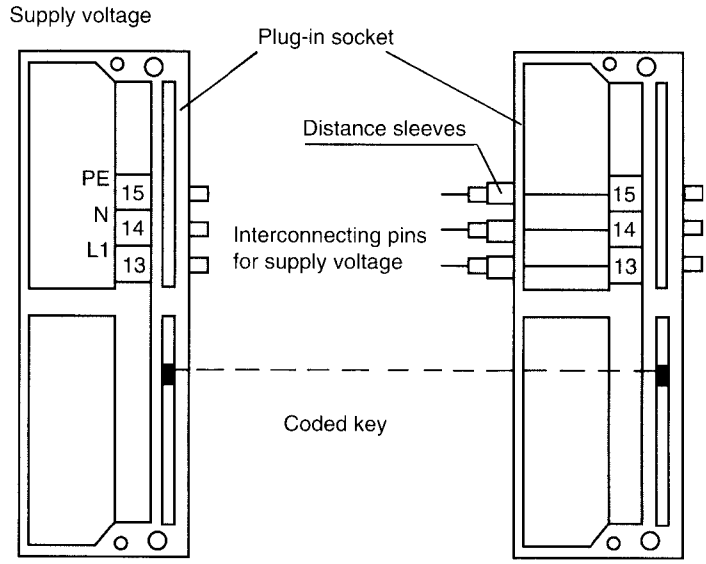
- respective terminals
- interconnection pins
- distance sleeves for mounting several instruments in a row
- coded key

Spacers slide onto the interconnecting pins and ensure that adjacent instruments have a minimum gap of 5 mm between each other.

For mounting on standard rail (TS 35 mm) an adapter is enclosed. The two screws located on the front of the VEGASEL are used to fasten the instrument to the mounting assembly.

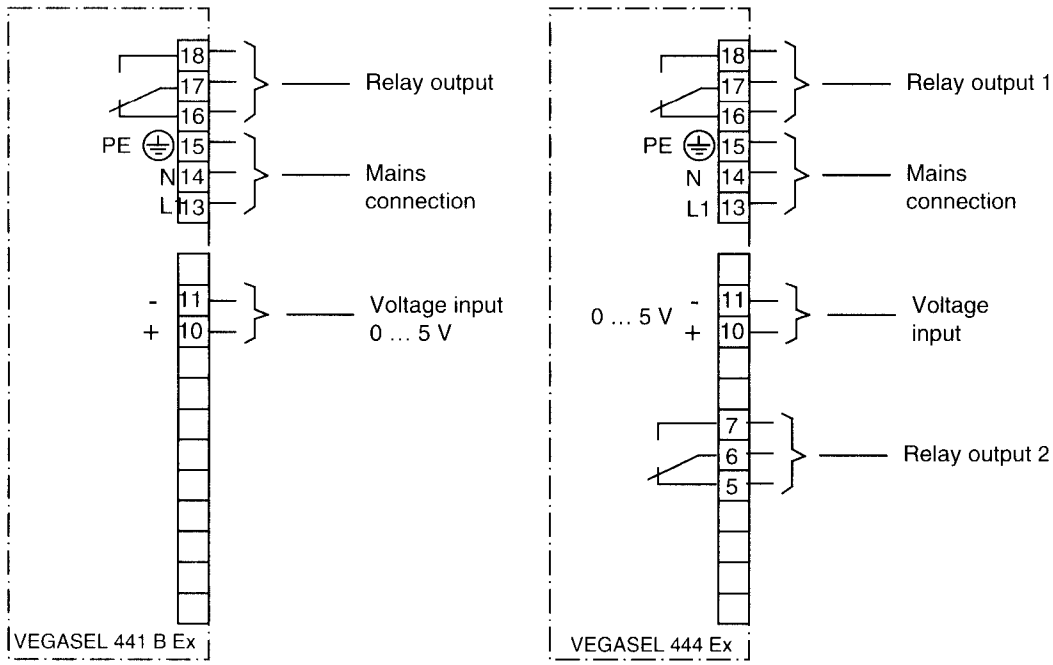
In case of single mounting remove the interconnection pins and connect the supply voltage directly. The coded key avoids that instruments of series 400 are exchanged.

Remove all interconnection pins on the first plug-in socket.



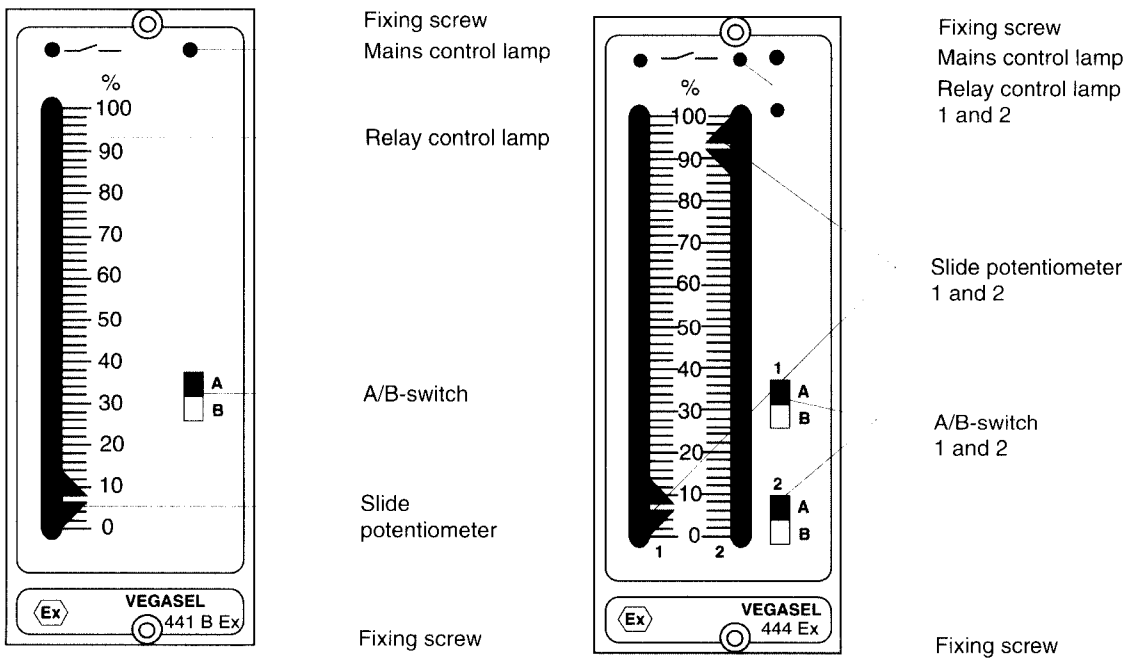
Attention:
The pins on terminals 13, 14 and 15 carry supply voltage.

Electrical connection



The electrical connection is made on the plug-in socket acc. to the wiring diagram on the back of the instrument.

Start-up



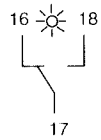
- Feed supply voltage. **The voltage must comply with the figure stated on the wiring diagram.**
- Set A/B-switch to desired mode A or B (function of A/B-switch see following description)
- Adjust the slide potentiometer to the requested switch point (see following description page 6)

Switching condition of the relay (e.g. VEGASEL 441 B Ex) independent of the input signal

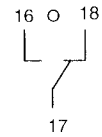
a.) Function as one-point level switch

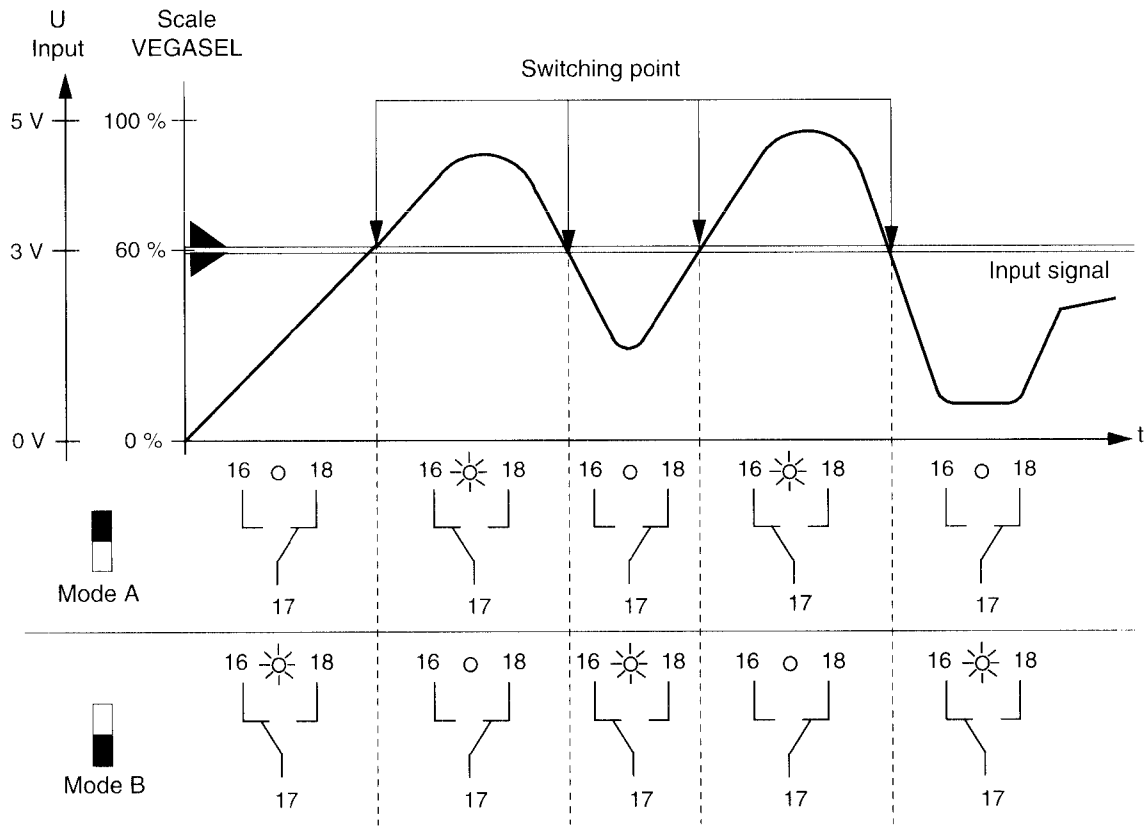
Legend:

Relay de-energized
Relay control lamp lights

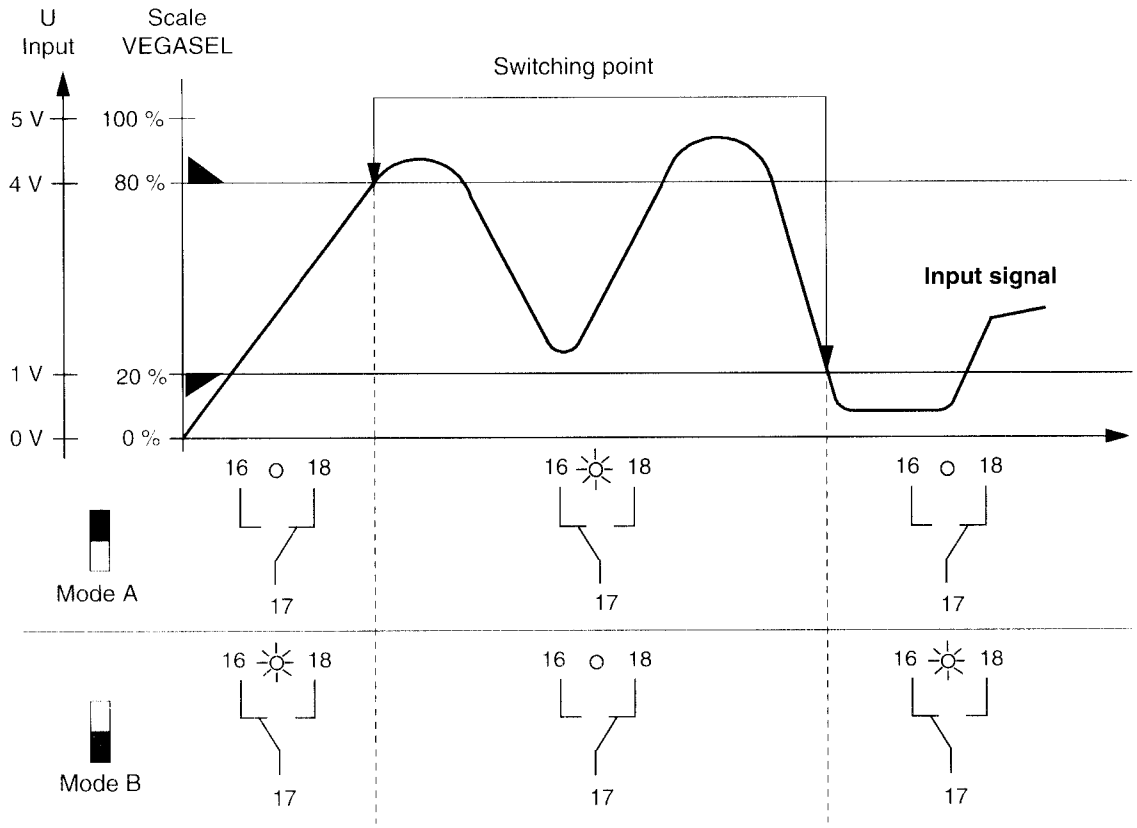


Relay energized
Relay control lamp does not light





b.) Function as two-point level switch
(switching hysteresis in the example 60 %)



VEGA

VEGA Grieshaber KG
Electronic level measurement
Am Hohenstein 113
Postfach 11 42
D-77757 Schiltach
Phone 0 78 36/50-0
Fax 0 78 36/50-201

Technical data subject to alterations

2.11 758 / Okt. '94