Attn.: Ole Meyer

Dept. of Earth Science

Best regards

Tecnis GmbH

L. Mauzac

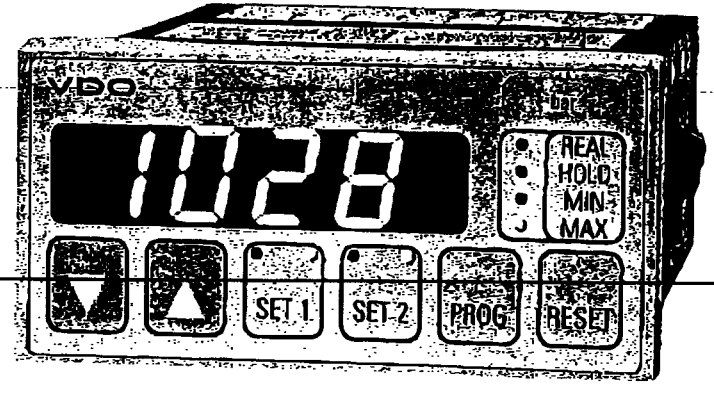
(Sales - Expert)

Instruction Manual

Digital indicator with microprocessor

Model: 1995

Model: 1996
with limit contacts



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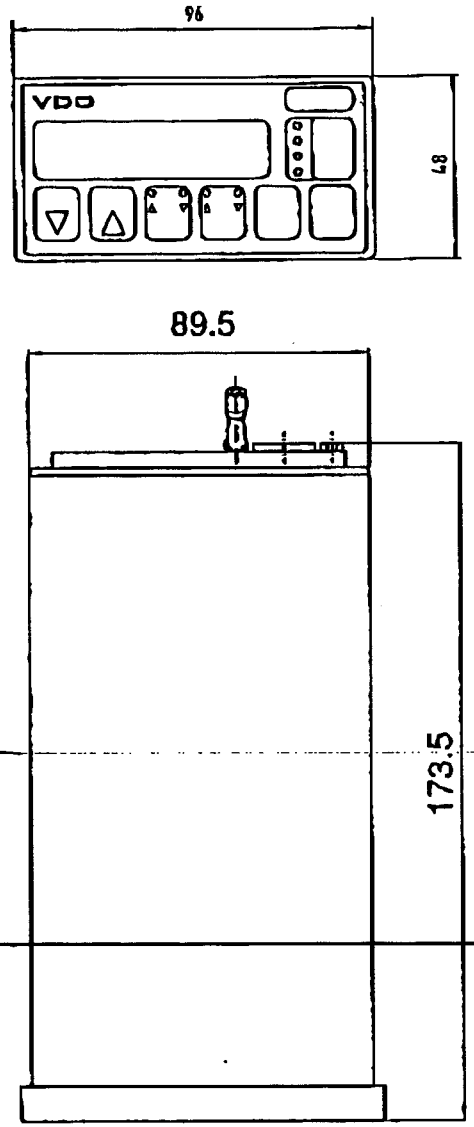
Appendix C Dimensions

Dimensions mm



Contents

Depressing RESET immediately terminates the alarm setting mode at any time. In this instance, the instrument resumes REAL mode.

Only such changes, that have been acknowledged by appearance of "---" will become effective. Otherwise, previously set values remain valid.

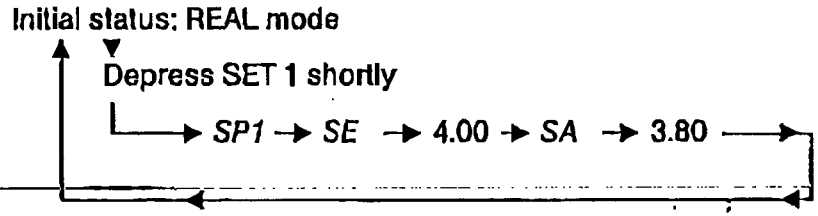
Set points of alarm no. 2 are entered in the same manner.

Short depression of the SET 1 (SET 2, respectively) key, while the instrument is in REAL mode, initiates verification of the current settings of alarm no. 1 (no. 2, respectively)

Below flow diagram explains appearance of key words and values, presuming settings of:

Set point makE (SE) = 4.00

Set point breAk (SA) = 3.80



Depressing RESET immediately terminates verification mode at any time. In this instance, the instrument resumes REAL mode.

Set points of alarm no. 2 are verified in the same manner.

2.1 LED display 'A'
By means of the MODE key (see section 2.2), the display can be set to optionally read the REAL value measured, or either one of the values stored in the HOLD, MINIMUM or MAXIMUM memory.

During programming, the respective mode is indicated by easy to understand symbols.

2.2 MODE key 'H'
The MODE key is found at the right-hand side next to the display, indicated by REAL, HOLD, MIN and MAX. Depression changes the modes in consecutive order. A red LED indicates the active mode.

2.2.1 REAL mode 'h'
Indicates the actual value measured.

2.2.2 HOLD mode 'h'
Holds the value indicated at the very moment the key is depressed. Measurement continues in the background, meaning, that the memories of MINIMUM and MAXIMUM as well as the alarm contacts continue to operate. HOLD discontinues upon further depression of the MODE key or depression of the RESET key (see 2.7).

2.2.3 MIN mode (minimum memory) 'h'
The lowest value indicated since last depression of the RESET key is memorised and will be displayed in this mode. Measurement continues in the background, meaning, that the memories of MINIMUM and MAXIMUM as well as the alarm contacts continue to operate. MIN discontinues upon further depression of the MODE key. Depression of the RESET key erases the memory (see 2.7).

Depressing RESET immediately terminates the programming mode at any time. In this instance, the instrument resumes REAL mode.

Only such changes, that have been acknowledged by appearance of "---" will become effective. Otherwise, previously set values remain valid.

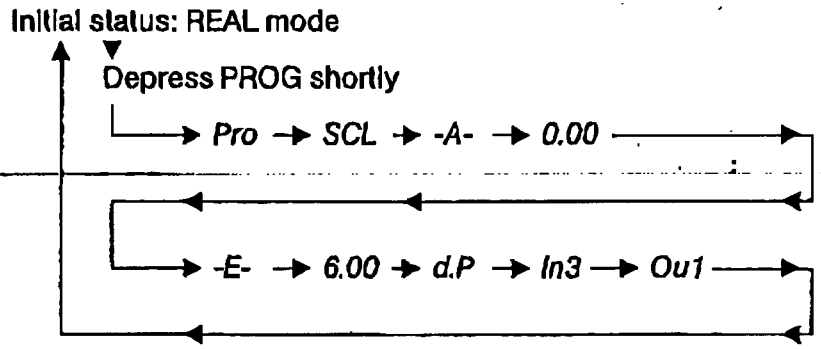
Short depression of the PROG key, while the instrument is in REAL mode, initiates "Pro" to appear at the display, followed by all current settings in consecutive order.

Below flow diagram explains appearance of key words and values, presuming settings of:

Scale expansion: 0 to 6.00 bar

Signal input: 4...20 mA

Signal output: 0...10 V



Depressing RESET immediately terminates verification mode at any time. In this instance, the instrument resumes REAL mode.

The "MIN" LED extiguishes and *-E-* appears, standing for "High end of scale".
Depress PROG once more: The "MAX" LED flashes and the corresponding value is displayed. Change this value as desired by depressing the (▼) and (▲) keys.
Depress PROG once more: The new value will be memorised. This is indicated by 3 dashes "---" appearing for a few seconds. The "MAX" LED extiguishes and *dP* appears, standing for "Decimal point". Change the decimal point as desired by depressing the (▼) (1 step to the left) and (▲) (1 step to the right) keys.
Depress PROG once more: The new position of the decimal point will be memorised. This is indicated by 3 dashes "---" appearing for a few seconds after which *InX* appears, standing for "Signal input X", where "X" stands for figures 1 to 9 as explained below. Change this value as desired by depressing the (▼) and (▲) keys.

X = 1: *In1* = Signal input 0 to 10 V
X = 2: *In2* = Signal input 0 to 20 mA
X = 3: *In3* = Signal input 4 to 20 mA

Depress PROG once more: The new value will be memorised. This is indicated by 3 dashes "---" appearing for a few seconds after which OuX appears, standing for "Signal output X", where "X" stands for figures 1 to 9 as explained below. Change this value as desired by depressing the (▼) and (▲) keys.

X = 1: *Ou1* = Signal output 0 to 10 V
X = 2: *Ou2* = Signal output 0 to 20 mA
X = 3: *Ou3* = Signal output 4 to 20 mA

Depress PROG once more: The new value will be memorised. This is indicated by 3 dashes "---" appearing for a few seconds.

With instruments not featuring the serial data interface, programming is now complete and standard operating mode will be automatically selected.

Appendix A
Schematic description of settings and data transmission

Initial status: REAL mode

Depress PROG and hold down
- *Pro* appears at display and will change to *SCL* indicating programming mode

Depress PROG
- *-A-* appears at display

Depress PROG
- current low scale value is displayed

adjust value using (▼) and (▲) keys
- low scale value is changing

Depress PROG
- *---* appears, indicating acceptance of new lower scale value
- *-E-* appears at display

Depress PROG
- current high scale value is displayed

adjust value using (▼) and (▲) keys
- high scale value changes

Depress PROG
- *---* appears, indicating acceptance of new upper scale value
- *dP.* appears and current position of decimal point is displayed

continued appendix A, page 29

2.5.3 Compensation of zero offset

Despite of careful calibration, the instrument may indicate a zero offset in operation. This may be caused by a static head acting on the transmitter or other process conditions.

This should be preferably compensated by shifting the zero signal of the transmitter.

If this can't be accomplished, than true indication can be achieved by means of shifting low end and high end indication correspondingly as per below examples.

Example 1:
Calibration: 0...400 bar
Zero offset: 4 bar
Corrective calibration: –4...396 bar

Example 2:
Calibration: 0...400 bar
Zero offset: –7 bar
Corrective calibration: 7...407 bar

2.6 SET 1 (no. 1 alarm), SET 2 (no. 2 alarm)

These keys actuate the programming mode to enter and verify the alarm contacts' settings.

2.6.1 Setting of no. 1 alarm (see also appendix B)

Programming of no. 1 alarm is made by initially holding the SET 1 key depressed until *SP1* (Set point 1) disappears and the message *SE* (Set point makE) appears.

Depress SET 1 once more: The red LED in the upper left corner of the SET 1 key flashes and the corresponding value is displayed. Change this value as desired by depressing the (▼) and (▲) keys.

8.0 Setting of physical unit

The instrument is supplied with a variety of labels to suit most commonly used units of pressure and temperature. A number of blank labels may be used to indicate customised units.

The pocket 'I' above the MODE key is intended to accept the unit label. To insert the label, pry the pocket open with a tipped instrument. Take care not to loosen or damage the protective foil.

9.0 Maintenance

No wear parts or components requiring any regular maintenance are contained in the instrument. In case of obvious malfunction, it is recommended to return the instrument to an authorised WIKA service for repair.

The front foil may be cleaned using a moist cloth and some non-abrasive household detergent.

The LED's in the upper corners of the SET keys are intended to indicate the alarm configuration together with the relay status. The left LED, when lit, indicates energised alarm circuit at HIGH ALARM programmed. The right LED, when lit, indicates energised alarm circuit at LOW ALARM programmed.

SET 1 key corresponds to no. 1 alarm, SET 2 key corresponds to no. 2 alarm.

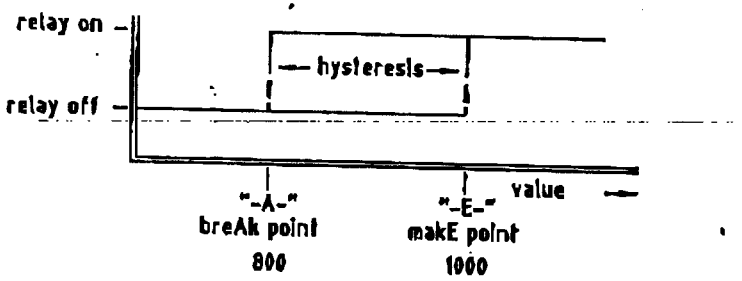
Programming of alarm contacts can be terminated at any time by depressing the RESET key. In this instance, only such changes are accepted, that have been acknowledged by appearance of "---". Otherwise, previously set values remain in effect.

Examples:

a) HIGH ALARM (makE at 1000, breAk at 800)

The circuit relay is energised once the display value rises to 1000. It remains energised until the display value falls to 800.

The left hand LED at the SET 1 key comes on at 1000 and is turned off at 800.



b) LOW ALARM (makE at 400, breAk at 500)

The circuit relay is energised once the display value falls to 400. It remains energised until the display value rises to 500.

If the value to display is still within the capacity of the indicator, than the value and the respective error message will flash intermittendly. If the value exceeds ± 1999, than E3 will be displayed permanently.

Below table indicates the actual values at which this error message will appear:

Message	Signal set	Actual signal
E3 flashes intermittendly with value	0...10 V	> 10.6 and < 10.9 V
	0...20 mA	> 21.2 and < 21.8 mA
	4...20 mA	> 21.2 and < 21.8 mA
E3	0...10 V	> 10.6 and < 10.9 V display > ± 1999
	0...20 mA	> 21.2 and < 21.8 mA display > ± 1999
	4...20 mA	> 21.2 and < 21.8 mA display > ± 1999

5.3.2 Error message -E3

-E3 will appear, if the actual input signal is below the minimum signal value (e.g. 0 V, 0 or 4 mA) by more than 6 %. This is still within the capacity of the inbuilt A/D converter (see also 5.1) If the value to display is still within the capacity of the indicator, than the value and the respective error message will flash intermittendly. If the value exceeds ± 1999, than -E3 will be displayed permanently.

Below table indicates the actual values at which this error message will appear:

Message	Signal set	Actual signal
-E3 flashes intermittendly with value	0...10 V	< -0.6 V and > -10.9 V
	0...20 mA	< -1.2 mA and > -21.8 mA
	4...20 mA	< -1.2 mA and > -21.8 mA

2.7.1 Erase data memory

Depressing the RESET key while the instrument is operative erases the data memories as explained below:

- When depressed in REAL mode (indication of value measured), the MIN and MAX memories will be erased.
- When depressed in HOLD mode, this will reset the instrument into REAL mode.
- When depressed in MIN mode, only the MIN memory will be erased.
- When depressed in MAX mode, only the MAX memory will be erased.

2.7.2 Exit programming mode (see also 2.5.1, 2.6.1 and 2.6.3)

Programming can be terminated at any time by depressing the RESET key. In this instance, only such changes are accepted, that have been acknowledged by appearance of "---". Otherwise, previously set values remain in effect.

2.7.3 Exit verification mode (see also 2.5.2, 2.6.2 and 2.6.4)

The verification mode proceeds automatically and can be terminated at any time by depressing the RESET key.

3.0 Layout of back panel terminals

(see folding-out illustration on page 36 of appendix C)

The back panel features the 15-pin plug 'J', containing the terminals for line supply and both alarm contacts, and the 9-pin plug 'K', containing the terminals of input signal, transmitter excitation and analog output. For increasing of the immunity from interference it is necessary to connect the earth clamp (M) with ground.

Both racks are of the plug-terminal type for ease of wiring.

4.1 Damping of indicator (optional)

After adjustment of the output signal appears a further menu-point. It is shown on the display with 'd x'. The value x could be changed between 1 and 3 with the arrow key.

x = 1: maximum damping
x = 2: damping approx. factor 2 lower
x = 3: damping approx. factor 4 lower

Transient-time:

1. 'd 1' approx. 10 sec. to 60% of span
   approx. 15 sec. to 75% of span
   approx. 30 sec. to 95% of span
   approx. 75 sec. to 100% of span

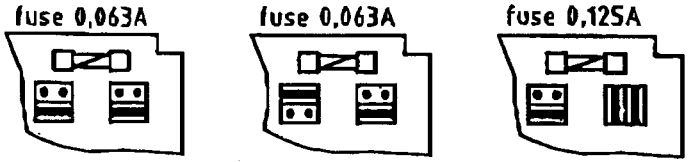
2. 'd 2' approx. 5 sec. to 60% of span
   approx. 8 sec. to 75% of span
   approx. 16 sec. to 95% of span
   approx. 40 sec. to 100% od span

3. 'd 3' approx. 3 sec. to 60% of span
   approx. 4 sec. to 75% of span
   approx. 8 sec. to 95% of span
   approx. 21 sec. to 100% of span

The a.m. values are valid for the damping of the indicated value; output-signal and set points are damped lower.

After adjustment of the required damping the 'Prog'-Button have to be pushed once more for storing. The display ist afterwards automatically in the Real-mode. Electronic indicating instruments with damping couldn't realize the option digtial interface.

3.1.1 Scheme of line power settings



WARNING!

Remember to disconnect the line voltage prior to opening the enclosure!

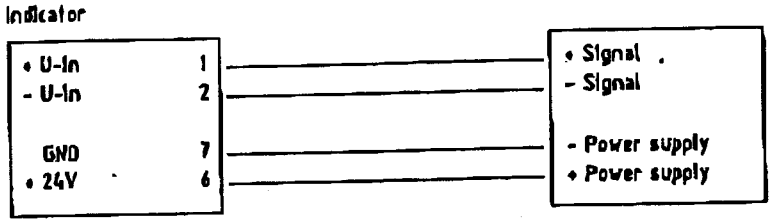
3.2 Layout of 9-pin plug 'K'

Pin	Designation	
1	$+U_{in}$	Voltage signal input
2	$-U_{in}$	Voltage signal input
3	$+I_{in}$	Current signal input
4	$-I_{in}$	Current signal input
5	$-_{out}$	Common minus of current and voltage output signal (pins 8 + 9)
6	+24V	Transmitter excitation
7	-GND	Transmitter excitation
8	$+U_{out}$	Analog voltage output signal
9	$+I_{out}$	Analog current output signal

4.02 Programming of parameters

Command	Response No. of byte *Example*	Meaning
PMODE	1 = REAL mode 2 = HOLD mode 3 = MIN mode 4 = MAX mode 5+1 byte + <CR> *PMODE1*	signal to set mode of instrument
PMINM	0 = Reset 5+1 byte + <CR> *PMINM0*	erase MIN memory
PMXNM	0 = Reset 5+1 byte + <CR> *PMAXM0*	erase MAX memory
PST1E	SE of alarm 1 5+6 byte + <CR> *PST1E+10.00*	set starting point alarm 1, incl. sign and decimal point
PST1A	SA of alarm 1 5+6 byte + <CR> *PRST1A+09.50*	set end point alarm 1, incl. sign and decimal point
PST2E	SE of alarm 2 5+6 byte + <CR> *PST2E+08.00*	set starting point alarm 2, incl. sign and decimal point
PST2A	SA of alarm 2 5+6 byte + <CR> *PRST2A+08.50*	set end point alarm 2, incl. sign and decimal point
PSCLA	Low scale 5+6 byte + <CR> *PRSCLA+00.00*	set low end of scale value incl. sign and decimal point

d) 4-wire, 0...10 V transmitter signal



3.3 Layout of 9-pin Sub-D plug 'L'

Layout of the serial interface is identical to that of commonly found Personal Computers. This simplifies data input into these widely used machines.

Pin	Designation
2	TX DATA
3	RX DATA
5	GROUND

An adaptor to fit 25-pin Sub-D plugs is optionally available.

4.0 Digital interface (optional)

The instrument can be optionally equipped with a serial RS 232 data interface. The interface transmits data measured as well as enables programming of the instrument. Electronic indicating instruments with digital interface couldn't realize the option damping.

Data transmission and programming follows the same rule in principle. Data reading requires a 5-byte command. The instrument responds by acknowledging the command together with the respective data. Programming requires a 5-byte command followed by a word of 1 to 6 bytes length.

All commands transmitted and received are followed by <CR> (carriage Return, DEC 13.)

4.01 Transfer of data and parameters

Com-mand	Response No. of byte *Example*	Meaning
RREAL	Value 5+6 byte + <CR> *RREAL+12.34*	true value indicated incl. sign and decimal point
RMODE	1 = REAL mode 2 = HOLD mode 3 = MIN mode 4 = MAX mode 5+1 byte + <CR> *RMODE1*	status message, indicating current mode of instrument
RMINM	MIN value 5+6 byte + <CR> *RMINM+01.23*	contents of MIN memory incl. sign and decimal point
RMAXM	MAX value 5+6 byte + <CR> *RMAXM+14.56*	contents of MAX memory incl. sign and decimal point
RST1E	SE of alarm 1 5+6 byte + <CR> *RST1E+10.00*	starting point alarm 1, incl. sign and decimal point
RST1A	SA of alarm 1 5+6 byte + <CR> *RST1A+09.50*	end point alarm 1, incl. sign and decimal point
RST2E	SE of alarm 2 5+6 byte + <CR> *RST2E+08.00*	starting point alarm 2, incl. sign and decimal point

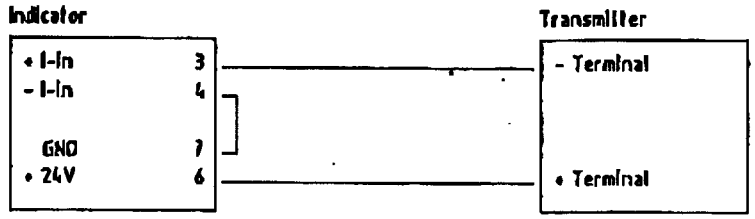
Com-mand	Response No. of byte *Example*	Meaning
RST2A	SA of alarm 2 5+6 byte + <CR> *RST2A+08.50*	end point alarm 2, incl. sign and decimal point
RSCLA	Low scale 5+6 byte + <CR> *RSCLA+00.00*	low end of scale value incl. sign and decimal point
RSCLE	High scale 5+6 byte + <CR> *RSCLE+16.00*	high end of scale value incl. sign and decimal point
RINPX	1 = 0 to 10 V 2 = 0 to 20 mA 3 = 4 to 20 mA 5+1 byte + <CR> *RINPX3*	input signal selected at instrument
ROUTX	1 = 0 to 10 V 2 = 0 to 20 mA 3 = 4 to 20 mA 5+1 byte + <CR> *ROUTX3*	output signal selected at instrument

NOTE:

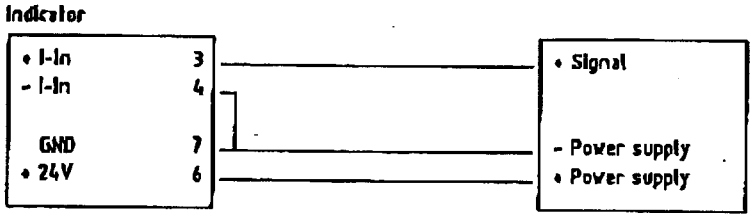
All commands transmitted to the instrument must terminate with <CR> (DEC 13). All data received from the instrument will terminate with <CR> (DEC 13).

Wiring examples:

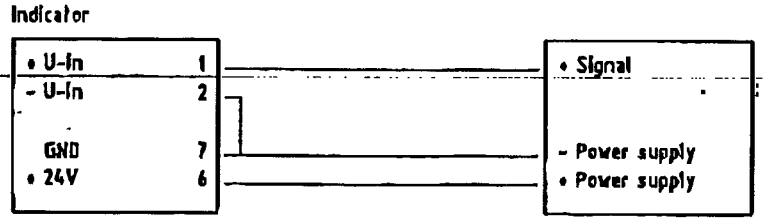
a) 2-wire, 4...20 mA transmitter signal



b) 3-wire, 0...20 mA transmitter signal



c) 3-wire, 0...10 V transmitter signal



Com-mand	Response No. of byte *Example*	Meaning
PSCLE	High scale 5+6 byte + <CR> *PSCLE+16.00*	set high end of scale value incl. sign and decimal point
PINPX	1 = 0 to 10 V 2 = 0 to 20 mA 3 = 4 to 20 mA 5+1 byte + <CR> *PINPX3*	set input signal at instrument
POUTX	1 = 0 to 10 V 2 = 0 to 20 mA 3 = 4 to 20 mA 5+1 byte + <CR> *POUTX3*	set output signal at instrument

NOTE:

All commands transmitted to the instrument must terminate with <CR> (DEC 13). The decimal point must be entered with both, low end and high end scale values, where the last value entered will determine the actual decimal point, irrespective of this being the low or high end value. Note correct decimal point when entering the alarm contact settings.

Every 2nd pin of the 15-pin plug remains blank to enable safe wiring of the line voltage.

Instruments incorporating the serial interface will additionally feature a 9-pin Sub-D plug 'L'.

3.1 Layout of 15-pin plug J

Pin	Designation
1 3 5	1 — 3 — 5 No. 1 alarm contact
7 9 11	7 — 9 — 11 No. 2 alarm contact
13 15	13, 15 AC 50...60 Hz 240/230/110 V

Note: Internal jumpers are providing adaption to line voltage 110, 230 and 240 V 50...60 Hz ±6%. To adjust, open the enclosure and arrange jumpers next to the fuse as indicated in the drawing. For 110 V operation, replace the 0.063 A micro fuse with such of 0.125 A.

☞ **WARNING!**

Remember to disconnect the line voltage prior to opening the enclosure!

5.0 Error messages

Altogether 6 different error messages may be displayed:

5.1 Error messages E1/-E1

E1/-E1 will appear, if the actual input signal exceeds the maximum signal value (e.g. 10 V or 20 mA) by more than 9%. Too high a signal may damage the inbuilt A/D converter. E1 indicates too high positive signal, -E1 indicates too high negative signal. Below table indicates the actual values at which this error message will appear:

Message	Signal set	Actual signal
E1	0...10 V	> 10.9 V
	0...20 mA	> 21.8 mA
	4...20 mA	> 21.8 mA
-E1	0...10 V	< -10.9 V
	0...20 mA	< -21.8 mA
	4...20 mA	< -21.8 mA

5.2 Error messages E2/-E2

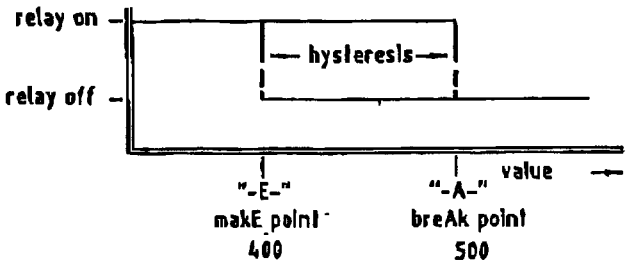
E2 appears if the input value exceeds the corresponding indication of +1999 digits.
-E2 appears if the input value exceeds the corresponding indication of -1999 digits.

5.3 Error messages E3/-E3

5.3.1 Error message E3

E3 will appear, if the actual input signal exceeds the maximum signal value (e.g. 10 V or 20 mA) by more than 6%. This is still within the capacity of the inbuilt A/D converter (see also 5.1)

The right hand LED at the SET 1 key comes on at 400 and is turned off at 500.



2.6.2 Verification of set points (see also appendix B)
Short depression of the SET 1 key initiates "SP1" to appear at the display, followed by the current settings of (*SE*) and (*SA*) of alarm contact no. 1.

Indication can be terminated at any time by depressing the RESET key. (see also 2.7)

2.6.3 Setting of no. 2 alarm (see also appendix B)
Programming of the 2. alarm contact is initiated by depressing key SET 2, otherwise fully identical to the programming of no. 1.

2.6.4 Verification of set points (see also appendix B)
Verification of the 2. alarm contact is initiated by depressing key SET 2, otherwise fully identical to the verification of no. 1.

2.7 RESET key
The RESET key enables to – erase memories – exit programming mode – exit verification mode.

Message	Signal set	Actual signal
-E3	0...10 V	< -0.6 V and > -10.9 V display > ± 1999
	0...20 mA	< -1.2 mA and > -21.8 mA display > ± 1999
	4...20 mA	< -1.2 mA and > -21.8 mA display > ± 1999

6.0 Preparing for installation

The instrument is designed to fit panels of 40 mm maximum thickness. Panel cut out per DIN 43 700, 92 +0.8 mm wide and 44 +0.6 mm high. Panel clamps are supplied with the instrument.

7.0 Environment

The front panel of the instrument is protected against ingess of moisture and dust by means of a sealed foil. Full weather protection may be achieved by fitting an appropriate gasket between panel and instrument.

The ambient operating temperature should be maintained within 0 to +50 °C.

Depress SET 1 once more: The new value will be memorised. This is indicated by 3 dashes "---" appearing for a few seconds. The LED extiguishes and *SA* appears, standing for "Set point breAk"

Depress SET 1 once more: The red LED in the upper right corner of the SET 1 key flashes and the corresponding value is displayed. Change this value as desired by depressing the (▼) and (▲) keys.

Depress SET 1 once more: The new value will be memorised. This is indicated by 3 dashes "---" appearing for a few seconds and the LED extiguishes.

Contact function can be selected to HIGH ALARM (meaning makE on rising value), or LOW ALARM (meaning makE on falling value). This is easily achieved by programming the makE (*SE*) value either above or below the corresponding breAk (*SA*) value.

Setting (*SE*) above (*SA*) means HIGH ALARM. (*SE*) will energise the alarm circuit, which will remain energised until the display figure decreases to reach the value of (*SA*).

Setting (*SE*) below (*SA*) means LOW ALARM. (*SE*) will energise the alarm circuit, which will remain energised until the display figure increases to reach the value of (*SA*).

The difference between (*SE*) and (*SA*) represents the hysteresis across makE and breAk points of the contacts. (This must not be confused with any hysteresis across approach of the set points with rising and falling values. This sort of mechanical delay is not apparent with a digital instrument.)

Both values can be programmed without limitations, as the case demands. Setting both, (*SE*) and (*SA*) at the same values, will automatically create HIGH ALARM function.

With instruments featuring the serial data interface, *bdX* appears, standing for "Baud rate X" of the serial data interface (RS 232), where "X" stands for figures 1 to 9 as explained below. Change this value as desired by depressing the (▼) and (▲) keys.

X = 1: *bd1* = 1200 Baud
X = 2: *bd2* = 2400 Baud
X = 3: *bd3* = 4800 Baud
X = 9: *bd9* = 9600 Baud

Depress PROG once more: The new value will be memorised. This is indicated by 3 dashes "---" appearing for a few seconds. Programming is now complete and standard operating mode will be automatically selected.

Programming can be terminated at any time by depressing the RESET key. In this instance, only such changes are accepted, that have been acknowledged by appearance of "---". Otherwise, previously set values remain in effect.

2.5.2 Verification of programmed settings (see also appendix A)
Short depression of the PROG key initiates "Pro" to appear at the display, followed by all current settings in consecutive order, where:

A = Low end of scale
E = High end of scale
dP = Decimal point
InX = Signal input
OuX = Output signal
bdX = Baud rate setting

Indication can be terminated at any time by depressing the RESET key. (see also 2.7)

continued appendix A from page 28

adjust position using (▼) and (▲) keys
↓ decimal point changes
Depress PROG
↓ --- appears, indicating acceptance of new decimal position
InX appears and current index of input signal is displayed
adjust value using (▼) and (▲) keys
↓ *X* , index figure changes
Depress PROG
↓ --- appears, indicating acceptance of new input index
OuX appears at display
adjust value using (▼) and (▲) keys
↓ *X* index figure changes
Depress PROG
↓ --- appears, indicating acceptance of new output index
→ with RS232 → *bdX* appears at display, current baud rate is displayed
adjust value using (▼) and (▲) keys
↓ *X* index figure changes
Depress PROG
↓ --- appears, indicating acceptance of new baud rate

2.2.4 MAX mode (maximum memory) 'h'

The highest value indicated since last depression of the RESET key is memorised and will be displayed in this mode. Measurement continues in the background, meaning, that the memories of MINIMUM and MAXIMUM as well as the alarm contacts continue to operate. MAX discontinues upon further depression of the MODE key. Depression of the RESET key erases the memory (see 2.7).

2.3 Set key descending value (▼) 'B'

Selects the next lower value or individual parameter during programming.

2.4 Set key ascending value (▲) 'C'

Selects the next higher value or individual parameter during programming.

2.5 Programmming key PROG

Depression of this key actuates the programming mode, at which all operative parameters can be set and verified.

2.5.1 Programming the indication (see also appendix A)

All programming is made in consecutive order by initially holding the PROG key depressed for ca. 5 seconds, until the message *SCL* (for scaling) appears instead of *Pro* for programming.

Depress PROG once more: *-A-* appears, standing for "Low end of scale".
Depress PROG once more: The "MIN" LED flashes and the corresponding value is displayed. Change this value as desired by depressing the (▼) and (▲) keys.
Depress PROG once more: The new value will be memorised. This is indicated by 3 dashes "---" appearing for a few seconds.

Appendix B
Schematic description of alarm settings and verification

Initial status: REAL mode

▼

Depress SET 1 and hold down

▼

SP1 appears at display and will change to
SE indicating programming mode

▼

Depress SET 1

▼

current Set point makE value no. 1 appears

▼

adjust value using (▼) and (▲) keys

▼

makE value changes

▼

Depress SET 1

▼

--- appears, indicating acceptance of new Set point makE value
SA appears at display

▼

Depress SET 1

▼

current Set point breAk value no. 1 appears

▼

adjust value using (▼) and (▲) keys

▼

breAk value changes

▼

Depress SET 1

▼

--- appears, indicating acceptance of new Set point breAk value

1.0 General

The digital indicators 1995 (standard version) and 1996 (version with 2 alarm contacts) are precision instruments for the measurement of current and voltage signals of pressure or other transmitters. The instruments are normally DIN-size panel mounting (96 x 48 x 190 mm) per DIN 43 700.

Indication is made via a 3 ½-digit LED display, covering a range from –1999 to +1999 digits. The actual span to be indicated can be easily programmed anywhere within this range. The same applies to decimal point, signal input, analog output and baud rate of the data interface. All programming can be made while the instrument is operative.

This versatility is achieved by means of a powerful microprocessor, which also controls all other functions.

An inbuilt isolated transformer provides power supply of DC 24 V 30 mA to energise transmitters connected.

Analog output of 0...10 V, 0...20 or 4...20 mA, as well as HOLD memory is serial standard. Model 907.15.532 features 2 alarm contacts in addition. Optionally available are MINIMUM and MAXIMUM memory, and also a serial RS 232 interface.

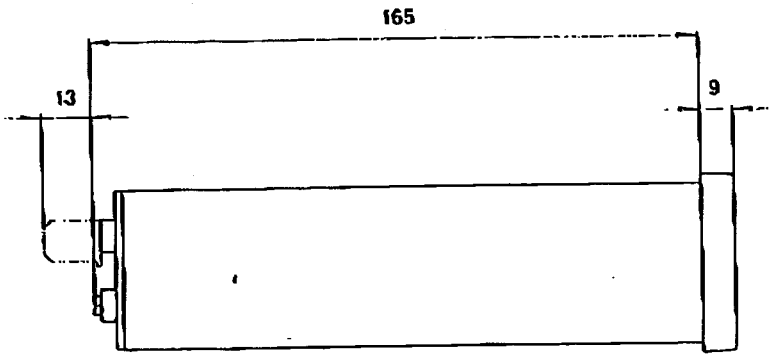
2.0 Layout of front panel

The arrangement of front and back panel elements are illustrated in appendix C, page 36. This page folds out for easier handling.

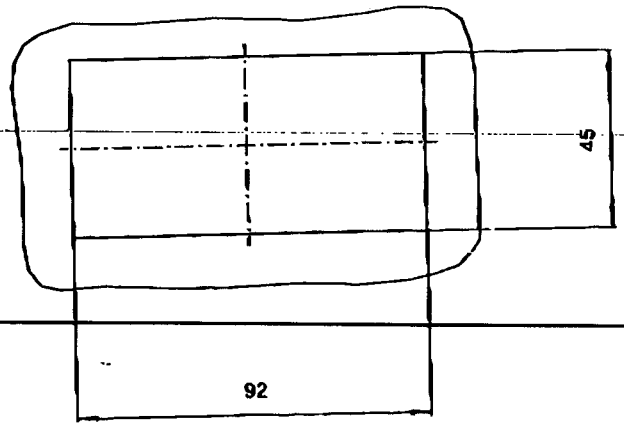
Contents

Appendix C Dimensions

Dimensions mm



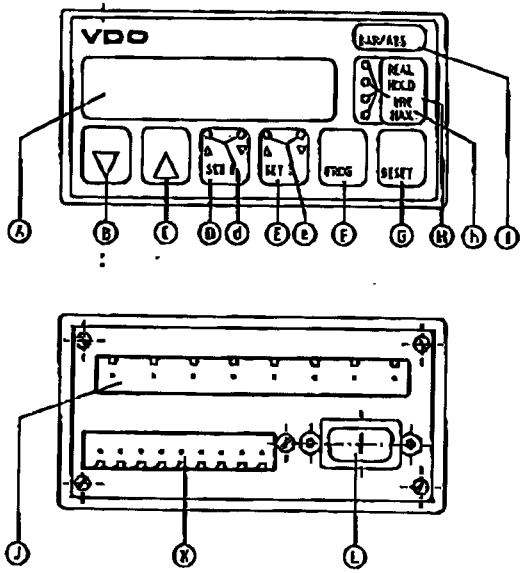
Panel cutout mm



Layout of front and back panel

(page folds out for easier handling)

Appendix C Layout of front and back panel



A LED display
B Decrease value key
C Increase value key
D Check/set contacts no. 1
d Δ-key = MAX value; ∇-key = MIN value
E Check/set contacts no. 2
e Δ-key = MAX value; ∇-key = MIN value
F Select programming mode. Continue with programming
G RESET memories, CANCEL programming
H Select display mode (toggle between LED's)
h REAL = display true value
HOLD = hold value displayed
MIN = contents of minimum memory displayed
MAX = contents of maximum memory displayed
I Pocket window holding unit label
J Terminal block power supply and contacts output
K Terminal block transmitter input and excitation, analog signal output
L Sub-D serial port (optional)
M Earth-clamp increases the immunity from interference