

## PRESSURE TRANSMITTER WITH DATALOGGER FOR LEVEL MEASUREMENT DL/N

**64**

### Features

- Piezoresistive measuring element
- Pressure ranges from 0...1 m to 0...250 m water gauge
- Calibration available for all common pressure units e.g. mWS, mWC etc.
- Temperature measurement (option)
- Measuring interval programmable from 2 s to 24 h
- Non volatile data memory for 130'000 values
- Long life battery
- Datatransfer to a PC/Notebook/Pocket PC
- Various accessories available

### Typical applications

Recording of level measurement in

- Ground water
- Bore holes
- Waste water
- Reservoirs
- Lakes, rivers
- Sewage treatment plant

## Specifications

| Pressure range                         | [mH2O]      | 1 ... 5 | > 5 ... 20             | > 20 ... 250 |
|--|-------------|---------|------------------------|--------------|
| <b>Overpressure</b>                    |             | 3 bar   | 3 x FS<br>(min. 3 bar) | 3 x FS       |
| <b>Accuracy</b> <sup>1)</sup>          | [± % FS]    | ≤ 0.25  | ≤ 0.1                  | ≤ 0.1        |
| <b>Thermal shift</b>                   | [± % FS/°C] |         |                        |              |
| Zero                                   | -5...50°C   | 0.06    | 0.03                   | 0.015        |
| Span                                   | -5...50°C   | 0.015   | 0.015                  | 0.015        |
| <b>Temperature range</b> <sup>2)</sup> |             |         | -5...50°C              |              |

<sup>1)</sup> Zero based non-conformity according to DIN 16086, including hysteresis and repeatability

<sup>2)</sup> Other temperature range on request

### Datalogger

|                        |   |
|------------------------|---|
| <b>Measurand</b>       | Pressure, pressure and temperature (temperature as option)  |
| <b>Resolution</b>      | Pressure < 0.01% FS      Temperature 0.1°C  |
| <b>Real time clock</b> | Quartz clock with date, timer functions   |
| <b>Data memory</b>     | 130'000 measurement values<br>- non volatile, data kept in memory even without battery      - each measurement value is correlated with time and date |
| <b>Interface</b>       | RS232C (V24, three wire)  |
| <b>Identification</b>  | Serial number and user definable description  |
| <b>Power supply</b>    | Lithium battery 3.6V      - battery changeable by user  |

### Configuration and Data Transfer

#### PC-Program for Configuration and Data Transfer

|                            |   |   |
|----------------------------|---|---|
| <b>System Requirements</b> | IBM compatible Notebook or PC, Windows 95/98/NT/2000/XP<br>or Pocket PC with Windows CE 2002 or higher  |   |
| <b>Data Transfer</b>       | - data transfer of last measurement period<br>- data transfer for a defined time-period<br>- the data will be represented in a txt-file or in a graph                               | - data transfer of all data   |
| <b>Configuration</b>       | - storage rate<br>- sampling rate<br>- time and date<br>- description<br>- timer (start/stop)<br>- depth to water<br>- tare<br>- storage threshold value<br>- density of the medium | storage interval of records<br>time between two records<br><br>(e.g. name of location)<br><br>the actual pressure value can be set to the real value (option)<br>the density-setting will affect the level range (option) |
| <b>Data Format</b>         | Data are stored in ASCII format and may be read with programs like Excel, Lotus or similar  |   |

## Electromagnetic compatibility

|                  | Standard                              | Level                           | Typical interferences       |
|------------------|---------------------------------------|---------------------------------|-----------------------------|
| <b>Emission:</b> |                                       |                                 |                             |
| EN 61000-6-3     | Generic emission standard             |                                 |                             |
| EN 55022         | Emission, class B                     |                                 |                             |
| <b>Immunity:</b> |                                       |                                 |                             |
| EN 61000-4-2     | Generic immunity                      |                                 |                             |
| EN 61000-4-2     | Electrostatic discharge               | 4kV contact, 8kV air            |                             |
| EN 61000-4-3     | Radiated electro-magnetic field       | 10V/m, 80-1000 MHz, 80% AM 1kHz | Cellular phones, radio sets |
| EN 61000-4-3     | Radiated electro-magnetic field (GSM) | 10V/m, 950 MHz, 200Hz on/off    | Digital portable phones     |
| EN 61000-4-4     | Fast transients (burst)               | 2 kV                            | Motors, valves              |
| EN 61000-4-6     | Conducted radio-frequency             | 10V, 0.15-80 MHz, 80% AM 1kHz   | Cellular phones, radio sets |
| EN 61000-4-5     | Surge                                 |                                 |                             |



The pressure transmitter DL fulfils the emission and immunity requirements described in the EMC directive EM 61000.

## Ordering Information

64 X . XXXX . 0761 . XX . X

|                                    |   |                   |   |    |  |   |   |   |
|------------------------------------|---|-------------------|---|----|--|---|---|---|
| <b>Type</b>                        | DL/N  | 64                |   |    |  |   |   |   |
| <b>Pressure Type</b>               | Gauge   | 1                 |   |    |  |   |   |   |
|                                    | Absolute  | 2                 |   |    |  |   |   |   |
| <b>Pressure range<sup>6)</sup></b> | 0... 1.0 mH2O   |                   |   |    |  |   |   |   |
|                                    | 0... 1.6 mH2O   |                   |   |    |  |   |   |   |
|                                    | 0... 2.5 mH2O   |                   |   |    |  |   |   |   |
|                                    | 0... 4.0 mH2O   |                   |   |    |  |   |   |   |
|                                    | 0... 6.0 mH2O   |                   |   |    |  |   |   |   |
|                                    | 0... 10 mH2O  |                   |   |    |  |   |   |   |
|                                    | 0... 16 mH2O  |                   |   |    |  |   |   |   |
|                                    | 0... 25 mH2O  |                   |   |    |  |   |   |   |
|                                    | 0... 40 mH2O  |                   |   |    |  |   |   |   |
|                                    | 0... 60 mH2O  |                   |   |    |  |   |   |   |
|                                    | 0... 100 mH2O   |                   |   |    |  |   |   |   |
|                                    | 0... 160 mH2O   |                   |   |    |  |   |   |   |
|                                    | 0... 250 mH2O   |                   |   |    |  |   |   |   |
|                                    | Special calibration   |                   |   |    |  |   |   |   |
| <b>Version</b>                     | level transmitter screwed on, closed (absolute) <sup>1)</sup>     | (Fig. 1a)         | 2 | 49 |  |   |   |   |
|                                    | level transmitter screwed on, open (absolute) <sup>1)</sup>       | (Fig. 1b)         | 2 | 50 |  |   |   |   |
|                                    | housing for pipe mounting, closed <sup>1) 2)</sup>                | (Fig. 2a/4)       |   | 57 |  |   |   |   |
|                                    | housing for pipe mounting, open <sup>1) 2)</sup>                  | (Fig. 2b/4)       |   | 58 |  |   |   |   |
|                                    | housing for pipe mounting, screwed on, closed <sup>1) 2) 3)</sup> | (Fig. 3a/5)       |   | 72 |  |   |   |   |
|                                    | housing for pipe mounting, screwed on, open <sup>1) 2) 3)</sup>   | (Fig. 3b/5)       |   | 73 |  |   |   |   |
| <b>Cable</b>                       | PE cable <sup>4) 7)</sup>   |                   |   |    |  |   |   |   |
|                                    | PUR cable <sup>4)</sup>   |                   |   |    |  |   |   |   |
|                                    | Teflon cable <sup>4)</sup>  |                   |   |    |  |   |   |   |
| <b>Electrical connection</b>       | Connector RSF 4, 4-pin <sup>8)</sup>                              |                   |   | 07 |  |   |   |   |
| <b>Interface</b>                   | RS232C  |                   |   | 61 |  |   |   |   |
| <b>Accuracy</b>                    | ≤ ± 0.25% FS (for pressure ranges ≤ 500 mbar)                     |                   |   |    |  | 1 |   |   |
|                                    | ≤ ± 0.1 % FS (for pressure ranges > 500 mbar)                     |                   |   |    |  | 2 |   |   |
| <b>Temperature range</b>           | -5...50°C <sup>5)</sup>   |                   |   |    |  |   | 4 |   |
| <b>Options</b>                     | Ballast weight  |                   |   |    |  |   | B |   |
|                                    | Electronic packed in gel:   | Gauge pressure    |   |    |  |   | C |   |
|                                    |   | Absolute pressure |   |    |  |   | D |   |
|                                    | Temperature measurement   |                   |   |    |  |   | E |   |
|                                    | Flood protection  | (Fig. 6)          |   |    |  |   | I |   |
|                                    | Version titanium  |                   |   |    |  |   | K |   |
|                                    | Special oil filling in the TD: ASEOL Food                         |                   |   |    |  |   |   | G |
|                                    |   | Halocarbon        |   |    |  |   |   | H |
|                                    | Seals:  | Viton (standard)  |   |    |  |   |   | U |
|                                    |   | EPDM              |   |    |  |   |   | S |
|                                    |   | Kalrez            |   |    |  |   |   | T |
| Special options                    |   |                   |   |    |  | Z |   |   |

<sup>1)</sup> Version for pipe mounting, minimum diameter 2"

<sup>2)</sup> Please specify the size of the thrust-ring (e.g. 2" or 4.5")

<sup>3)</sup> Gauge version for cable length > 50m

<sup>4)</sup> Please specify the required cable length and media

<sup>5)</sup> Other temperature ranges on request

<sup>6)</sup> mWS, mWC etc. available

<sup>7)</sup> Suitable for drinking water (food approved)

<sup>8)</sup> Data transfer cable not included, 2m (ordering code VART009)  
5m (ordering code VART211)

## Dimensions

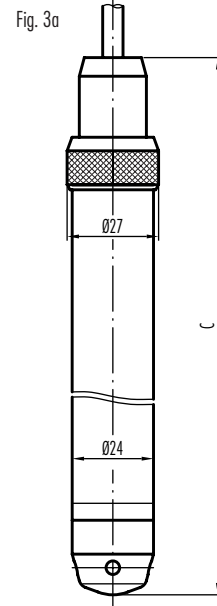
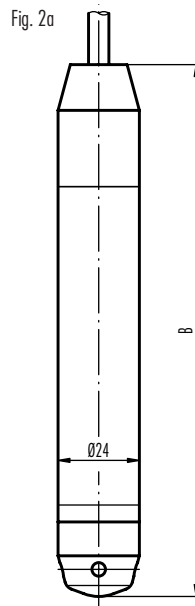
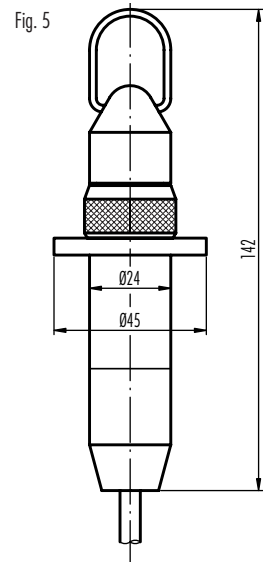
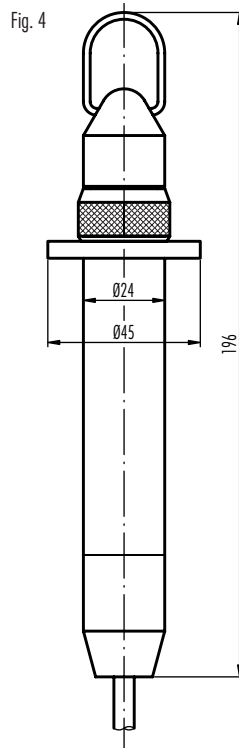
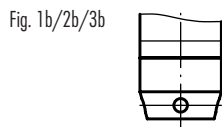
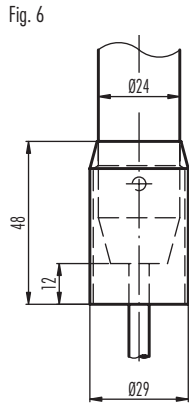
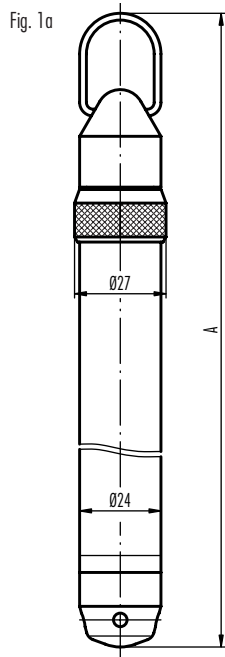


Fig. 4 Battery housing  
Fig. 3a/3b Battery built into the transmitter housing

| Version  | Front  | Fig. | Length  | Weight [g] | Length <sup>3)</sup> | Weight <sup>3)</sup> [g] |
|----------|--------|------|---------|------------|----------------------|--------------------------|
| absolute | closed | 1a   | A=288   | 260        |                      |                          |
|          | open   | 1b   | A=284   | 260        |                      |                          |
| gauge    | closed | 2a   | B=157   | 195        | B=244                | 425                      |
|          | open   | 2b   | B=153   | 195        | B=240                | 425                      |
|          | closed | 3a   | C=259.5 | 300        |                      |                          |
|          | open   | 3b   | C=255.5 | 300        |                      |                          |

<sup>3)</sup> with ballast weight

Specifications may change without notice.

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