

## ABSOLUTE INCLINOMETER PROFIBUS DP



### Main Features

- Compact and heavy duty industrial model
- Microprocessor controlled sensors
- Interface: Profibus DP
- Code: Binary
- Resolution: up to 0.001°
- Accuracy: up to 0.15°
- Viscosity: 2 mPas (others on request)

### Applications

- Inclination measurement
- Angle measurement
- Parallel lifting devices
- Leveling Systems
- Inground lifts

### Mechanical Structure

- Housing of Aluminum
- Protection class: IP 66 with connection cap

### Electrical Features

- Linear and temperature compensated characteristic line
- status indication with two LEDs in the connection cap
- Polarity inversion protection
- Over-voltage-peak protection

### ABSOLUTE INCLINOMETER PROFIBUS DP

#### Technical Data

#### Electrical Data

|                                   |   |            |
|-----------------------------------|---|------------|
| Model                             | ANS 15  | ANS 30     |
| Measuring range                   | +/- 15°   | +/- 30°    |
| Resolution                        | 0.001°  | 0.01°      |
| Accuracy (T = 0 °C .. +55 °C)     | 0.15°   | 0.2°       |
| Accuracy (T = -25 °C .. +85 °C)   | 0.3°  | 0.4°       |
| Damping period (0° -> 15°, t=90%) | typ. 2.5 s  | on request |
| Supply voltage                    | 10 - 30 V DC  |            |
| Power consumption                 | 3 Watts   |            |
| Electrical Lifetime               | > 10 <sup>5</sup> h   |            |
| EMC                               | EN 61000-6-4, EN 61000-6-2  |            |
| Bus connection                    | Line-driver according to RS 485<br>Galvanically isolated by opto couplers |            |
| Connection                        | Accessory connection cap, IP 66   |            |
| Cycle time                        | Typ. 4 measurements / second (because of measuring principle)             |            |
| Device addressing                 | Programmable by rotary switches in connection cap                         |            |

#### Environmental Conditions

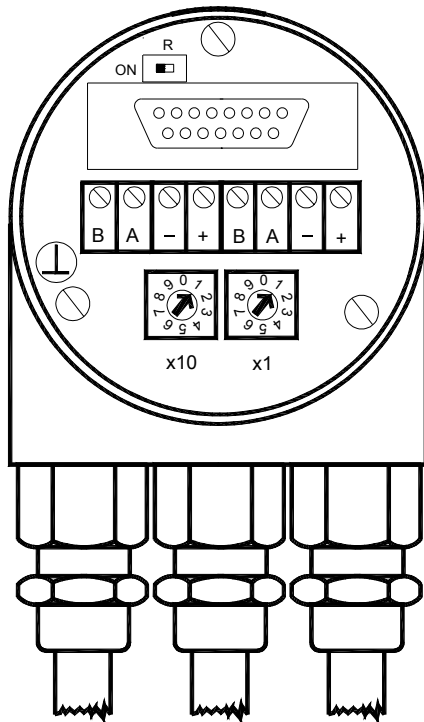
|                             |  |
|-----------------------------|--|
| Operating temperature       | - 25 °C ... + 85 °C                    |
| Storage temperature         | - 40 °C ... + 85 °C                    |
| Humidity                    | 98 % (without liquid state)            |
| Protection class (EN 60529) | IP 66 (with connection cap connected ) |

### ABSOLUTE INCLINOMETER PROFIBUS DP

#### Interface

##### Installation

The inclinometer is connected by two or three cables depending on whether the power supply is integrated into the bus cable or connected separately. If the power supply is integrated into the bus cable, one of the cable glands can be fitted with a plug. The cable glands are suitable for cable diameters from 6.5 up to 9 mm.

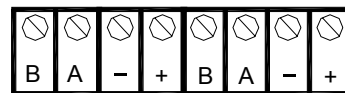


The settings of the Profibus-DP device address is done by user-friendly rotary switches in the connection cap. Allowed addresses are between 1 and 99, and each can only be used once. The connection cap can easily be opened for installation by removing the two cap screws.

Termination resistors are integrated in the connection cap. These must be switched on if the inclinometer is connected at the end or the beginning of the bus.



Connecting the data line and the power supply



| Clamp     | Description          |
|-----------|----------------------|
| B (left)  | Bus line B (Bus in)  |
| A (left)  | Bus line A (Bus in)  |
| -         | 0 V                  |
| +         | 10 – 30 V            |
| B (right) | Bus line B (Bus out) |
| A (right) | Bus line A (Bus out) |
| -         | 0 V                  |
| +         | 10 – 30 V            |

The power supply has to be connected once (no matter which clamps). If the terminating resistor is switched on the outgoing bus lines are disconnected.

A GSD-file is necessary for installing the inclinometer. The disc with the GSD-file and the detailed user manual can be ordered from FRABA or downloaded from our homepage ([www.posital.de](http://www.posital.de)).

The connection cap is provided with two LEDs on the backside, which optically represent the device status. This can be very useful for installing and setting-up the inclinometer.

### ABSOLUTE INCLINOMETER PROFIBUS DP

#### Configuration

When configuring the FRABA inclinometer the user specifies the functions of the device by selecting different configurations:

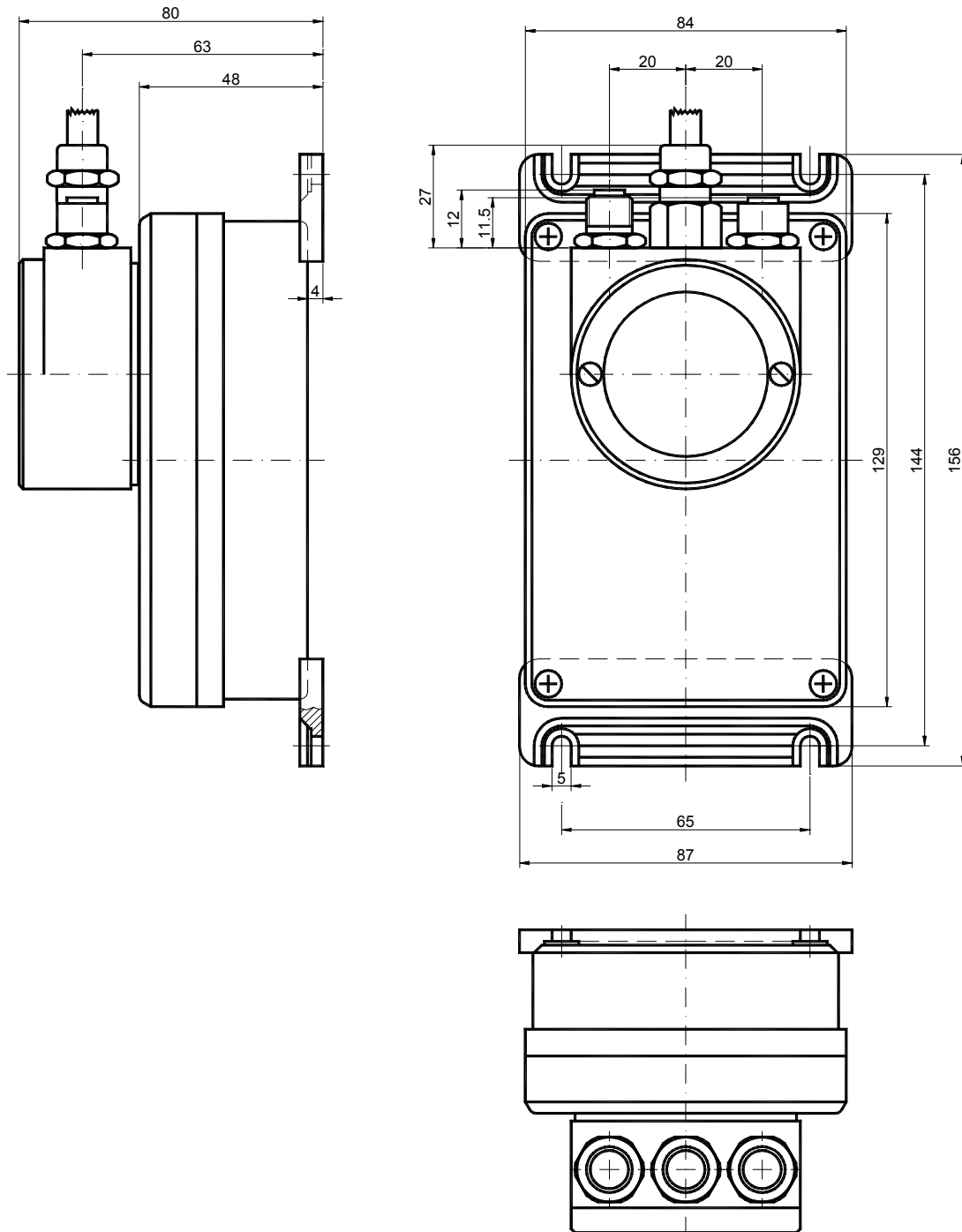
|                                       |  |
|---------------------------------------|--|
| Selection "Inclinometer"              | The unchanged inclinations of both axes are given out (no calculation by the controller).  |
| Selection "Programmable Inclinometer" | Inclinations outside the maximum measuring range can be indicated by a status byte. Additionally there is the possibility to set preset values. The preset value is the inclination value that should be reached at a certain physical inclination of the sensor axis. Independent preset values for both axes can be activated by setting bits in the control byte. |

Depending on the selected configuration number and length of in- and output data differ:

|  |  |
|--|--|
| Selection "Inclinometer":              | 1 input word (16 bit) for inclination X-axis<br>1 input word (16 bit) for inclination Y-axis   |
| Selection "Programmable Inclinometer": | 1 input word (16 bit) for inclination X-axis<br>1 input word (16 bit) for inclination Y-axis<br>1 output word (16 bit) for preset value X-axis<br>1 output word (16 bit) for preset value Y-axis<br>1 input byte (8 bit) status<br>1 output byte (8 bit) control |

## ABSOLUTE INCLINOMETER PROFIBUS DP

### Mechanical Drawings



### ABSOLUTE INCLINOMETER PROFIBUS DP

#### Models / Ordering Description

| Description           | Type Key   |           |   |           |          |            |
|-----------------------|--|-----------|---|-----------|----------|------------|
| Absolute inclinometer | <b>ANS</b>                                       | ....      | - | DP        | 2        | 2          |
| Measuring range       |  | <b>15</b> |   |           |          |            |
|                       |  | <b>30</b> |   |           |          |            |
| PROFIBUS DP           |  |           |   | <b>DP</b> |          |            |
| Version               |  |           |   |           | <b>2</b> |            |
| Number of axes        |  |           |   |           |          | <b>2</b>   |
| Connection            | Connection cap                                   |           |   |           |          | <b>3PG</b> |
|                       | - has to be ordered separately – see accessories |           |   |           |          |            |

Other models on request.

#### Accessories and Documentation

| Description                                  |  | Type            |
|--|--|-----------------|
| Connection cap                               | T-coupling-functionality with integrated address setting.<br>Standard;<br>3 cable glands for cable diameters of 6.5 up to 9mm. | AH 58-B1DP-3PG  |
| Connection cap "2M20"<br>- special version - | Same functionality as standard cap, but only two cable glands for cable diameters of 9 up to 13 mm.                            | AH 58-B1DP-2M20 |
| GSD-file *                                   |  |                 |
| User manual *                                | Installation and configuration manual, English   | UME-ANS-DP      |
| User manual *                                | Installation and configuration manual, German  | UMD-ANS-DP      |

\* These can be downloaded free of charge from our homepage [www.posital.de](http://www.posital.de).

We do not assume responsibility for technical inaccuracies or omissions. Specifications are subject to change without notice.