

Insulating oil testing unit

Online Breakdown Voltage sensor

BDVB TrafoStick TS4x

1. Application

The BDVB TrafoStick TS4x sensor was specially developed for permanent use in the field at the transformer and is used exclusively for continuous real-time measurement of breakdown voltage, water content and temperature of a mineral oil based transformer oil.

2. Description

The main measuring module is located in a robust metal housing. The measuring chamber consists of anodized aluminum. Through the perforation in the measuring chamber the internal sensors can be filled with insulating oil. The BDVB sensor is equipped with a Parker RI1EDX3 / 471 connector which allows the device to be screwed on at the target location. The sensor can be mounted in any orientation, but a free oil flow through the measuring chamber must be guaranteed. The connection for the cable is located at the top of the sensor. The connection between the TrafoStick and the control unit is established with the WEiPU ST1210 / S9



connection using the cable supplied. The sensor is connected to a computer, router, modem or similar device using the TCP-IP cable supplied.

3. Technical specification

| Measured parameters | |
|--------------------------------|----------------------------|
| Breakdown Voltage (BDV) | 10kV to 120kV (± 2.5%) |
| Watercontent (W _C) | 2 ppm to 80 ppm (± 2%) |
| Temperature | -40 to 120 ± 0,2°C |
| Measurement intervall | max. 0.1s |
| Operating enviroment | |
| Ambient temperature | -20°C to 70°C |
| Oil temperature range | -20°C to 85°C |
| Operating pressure | Up to 3bar |
| Inputs and Outputs | |
| Power supply | 4.5V to 7.5V |
| | (5.0V recommended) |
| Output | Digital Protokoll |
| Interface | MODBUS TCP/IP |
| Internal data logging capacity | dynamic latch buffer |
| | cache chains (64-256-1024) |
| General information | |
| Cabel | Standard MODBUS |
| | (variable length) |
| Housing material | EN-AW-6063 |



| Mechanical connection | DI DI4EDV2/474 |
|--|--------------------|
| Wechanical Connection | Parker RI1EDX3/471 |
| Measuring zone material | EN-AW-7075 |
| Housing classification when assembled | IP68 |
| Control software (Windows 7 oder höher) | Ver. 2.0 |
| Absolute maximum ratings | |
| Maximum of operating voltage | 9.0V |
| Operating temperature | -40°C to 100°C |
| Maximum pressure | 5bar |
| Storage temperature (without MODBUS-Kabel) | -65°C to 150°C |

We recommend using the power supply system 787-1020 - from Wago Kontakttechnik GmbH & Co. KG to ensure compliance with EU directives. Alternatively products of Mean-Well Enterprises Co., Ltd. - DR-30-5 or HDR-15-5 can be used.



ATTENTION: Loads that exceed the values listed under "Absolute maximum ratings" can permanently damage the sensor system!

The BDVB TrafoStick Basic has been tested by accredited test centres according to EN61326-1 as a class A measuring device. The accredited test centres confirms that the following standard requirements are fulfilled:

- EN 61000-4-2: 2011
- EN 61000-4-3: 2014
- EN 61000-4-4: 2013
- EN 61000-4-5: 2014
- EN 61000-4-6: 2014
- EN 61000-4-11: 2007
- CISPR11: 2015 + AMD1: 2016, EN55011: 2016 + A1: 2017, EN55011: 2016 + A1: 2017-06
- EN 60950-1: 2007 + A11: 2009 + A1: 2011 + A12: 2011

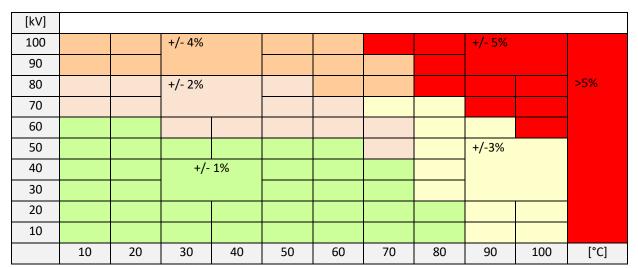


Table 1 Breakdown voltage measurement range accuracy v. temperature