

MiniTrans^{Plus}

**weilekes
elektronik**

Measuring Equipment
for Cathodic Protection

GPS synchronized
Internal 30A Relay
Coupon Measurement
Touch Display

www.weilekes.de



GSM Transmission
GPS or DCF Time Reception



USB / RS232 / Ethernet
1x Contact Input (i.e. door)
1x Contact Output



4x DC and 4x AC Inputs
30A socket for switching and
rectifier PWM regulation

06/14

Remote Monitoring for Cathodic Protection

Internet connection of test points and rectifiers • Data Logging with up to 1KHz • Mains or Battery operated
Rectifier control with voltage or current regulation by patented PWM • Threat Detection • Waterresistant IP67

General

MiniTransPlus is the next sensor generation for remote monitoring and control for cathodic protection. With the experience gained in the last decade by having installed nearly 10,000 MiniTrans in rectifiers and 4,000 in test points, the MiniTransPlus brings CP remote monitoring / control an additional step forward.

Easy Setup by means of LCD Touch Display

The graphic display with capacitive touch allows quick and easy setups on site with no need of PC/Notebook configurations. In addition, the galvanic isolated USB connector allows data transfers with PC/Notebook.

8 Channel Measurement with Galvanic Isolation

Beside the 3 channel input as for the old MiniTrans, the new MiniTransPlus got an additional 4th input with galvanic isolation. This way the MiniTransPlus is able to measure 2x DC and 2x AC voltages, 1x DC and 1x AC current and galvanic isolated another 1x DC and 1x AC voltage, resulting in 8 channels overall.

On / Off Measurements and Data Logging combined

MiniTransPlus combines the requirements for On and Off multi-channel potential measurements for up to 4 samplings a day with the ability to perform continuous multi-channel data logging with min, max and median calculation, to provide sophisticated results also in stray current environments.

Coupon Measurement with Internal Relay

MiniTransPlus is able to full fill coupon measurement at single times a day or continuously for data logging with min, max and median calculation, depending on the user needs.

GPS Time Synchronization + Coordinates

The build in GPS receiver with its external GPS antenna allows synchronized measuring and/or switching in rectifiers and test points. Not only On / Off potential measurements are synchronized, but also coupon measurements of all test points can be measured exactly all at the same time.

Rectifier Control remotely with Instant Web Access

With the internal 30A / 100V electronic relay, not only the On and Off switching is done, but a complete rectifier control by Pulse Wide Modulation (PWM) is offered. The PWM function transforms existing simple rectifiers into a voltage and/or current regulated rectifier station with full remote control (patent pending). For example, MiniTransPlus can be setup by SMS, internet or manually to regulate the output to be exact 3.00 V without any additional equipment to be installed beside. Just by another user command the voltage regulation can be changed into a current regulation immediately.

Bluetooth 4.0 build in for Smartphone App Connection

Allows setup and visualization of values on-site from up to 10m distance, for example in a car beside the rectifier station.

Threat Detection (Patent OGE, former E.ON Ruhrgas)

In combination with the high resolution of 0.1 μ V of the microvolt input channel and 2 samples/s with real time transmission via GPRS/UMTS, the MiniTransPlus manages threat detection in stray current free environments.

WinTrans 2.0 Internet Software

The evaluation of all the data from MiniTransPlus and MiniTrans as well as the rectifier control is done with this internet based software.

Technical Data

Remote Monitoring and Controlling

for CP Measurements in Rectifiers and Test Points, with graphic LCD Touch Display, LTE, UMTS, GPRS, GPS, DCF, RS232, Bluetooth, USB and Ethernet

Channels

2x DC + 2x AC	common ground
1x DC Mic + 1x AC Mic	common ground
1x DC + 1x AC	galvanic isolated

Range, Resolution and Impedance

± 100 mV / 0.1 μ V	200 K Ω (DC + AC)
± 10 V / 0.1 mV	10 M Ω (DC + AC)
± 100 V / 1.0 mV	10 M Ω (DC + AC)

Sampling Rates (Normal Mode = German GW16)

Up to 4 complete single On and Off measurements / day or every 5, 10, 30, 60 or 120 min an On and Off measurement

Sampling Rates (Data Logging with Min, Max and Median)

1 channel	1000/s (= 1 KHz)
1-4 channels	10/s, 2/s, 1s, 2s, 5s, 10s, 30s, 1min, 5min

Low Pass Filters

16 Hz > 60 dB = Factor 1,000 50 Hz > 100 dB = Factor 100,000

Recording Capacity

32 MByte = 11,000,000 values = 127 days with 1s

Input and Output Contacts

One galvanic isolated input and output each (i.e. door contact)

Synchronisation

Build in GPS receiver and DCF receiver
Synchronisation mode depends if GPS or DCF antenna is connected

Time deviation

± 5 ms / 24h with GPS,	
± 20 ms / 24h with DCF	± 40 ms / 24h without GPS/DCF

Remotely Controlled Switching Cycles

In 0.1s steps, user configurable (i.e. 0.8s / 0.2s) with selectable night sleep modus

Switching Power

Build in electronic relay with 30 A 70 VAC / 100 VDC

Coupon measurement

E-On, E-Off, I-DC, I-AC switched via build in coupon relay
Delay time remotely selectable from 1ms to 200ms after switching

Rectifier control and regulation via PWM

Pulse Wide Modulation (patent pending)
with internal 30A or external 100A relay
allows standard rectifiers to be remotely regulated by voltage and/or current via MiniTransPlus

Battery and Life time with Internal Battery at Test Points

3,6V, 19Ah	5 years with 3 samplings / day
	2 years with 5min sampling
	1 year with 1s sampling

Life time easily to be doubled with a second but small external battery

External Power Supply / Solar Test Point

Wall plug transformer, 5V / 2A
or solar test point (Type: Kettner)

Housing, Dimension and Weight

IP67 waterresistant, 265 x 70 x 40 mm 450 g