Development, Production and Engineering of Industrial Electronics Zagreb

# SENSOR CONDITIONING UNIT PP-10

**Measurement Program** NU-14021

## Application

Sensor conditioning unit PP-10 is used for medium voltage level conditioning in substations and switchgears. Sensor conditioning unit is connected to the capacitive link integrated in the medium voltage cable connector and uses the method of unconventional measuring transformers.
Every sensor conditioning unit enables the measurement of three phase voltages. In this way, it is possible to substitute big and expensive medium voltage measurement transformers. By connecting conventional current transformers and sensor conditioning unit PP-10 to Measuring terminals MT-10S, it is possibe to measure all the energy parameters of every feeder, and to monitor the power flow in the system.

## Functional description

Sensor conditioning unit PP-10 is connected to capacitive link integrated in the medium voltage cable connector by means of adapter A-10. In this way, together with the input capacitor of sensor conditioning unit, a capacitive divider is created which conditions the input voltage 10(20) kV to the voltage level appropriate for electronic measurement. The resulting signal is amplified in high input resistance amplifier (1) and fed to the isolation circuit (2). In the output stage (3), voltage is transformed to a standard current signal ±20mA to eliminate noise influence.
Power supply circuit (4) generates galvanicaly insulated supply voltages for input and output circuits.

## Main features

- unconventional method of medium voltage conditioning
- phase voltage measurement of a medium voltage plant via capacitive link
- compact solution for measurement on a feeder – one sensor conditioning unit measure three phase voltages
- input/output galvanicaly insulated
- output current signal ±20mA immune to noise
- small dimensions
- economic solution for medium voltage measurement

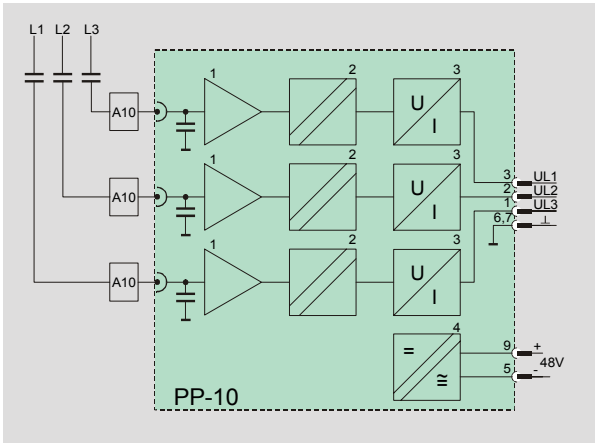


Fig. 1. Terminal diagram of Sensor conditioning unit PP-10

## Technical specification

***inputs:***
input voltage ..... 10 or 20 kV
connection capacitance 1 to 3 pF (other on demand)
connection..... adapter A-10 with integrated BNC connector and 1.8m triaxial cable

***output:***
current..... ±20mA
connection ..... 9-pin Sub-D connector

***indication:***
power.....LED green

***power supply:***
voltage.....24, 48, 110, 220 VDC
consumption .....<5VA

***operating temperature range:***..... -10$^{O}$C..+55$^{O}$C
***extended temperature range:***..... -20$^{O}$C..+60$^{O}$C

***mechanical data:***
dimensions.....140 x 160 x 30 mm

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