

Load Transducer for 3-phase AC Loads

An ultra-fast and precise measurement transducer specifically developed for Machine Tool Monitoring applications. The LCU910 is a unique design based on the fastest available 32 bit Microcontroller and **18 bit** successive approximation AD Converters. A sampling rate of **150kHz** ensure precise and correct measurement even when used with Frequency Inverters with 20kHz PWM base frequencies and higher.

LCU910 measures true motor power [kW].

♦ micBus Output

Proprietary RS485 type Sensor Bus

♦ Hall Sensors

50Amp, 100Amp, 200Amp, 500Amp or 1000Amp available

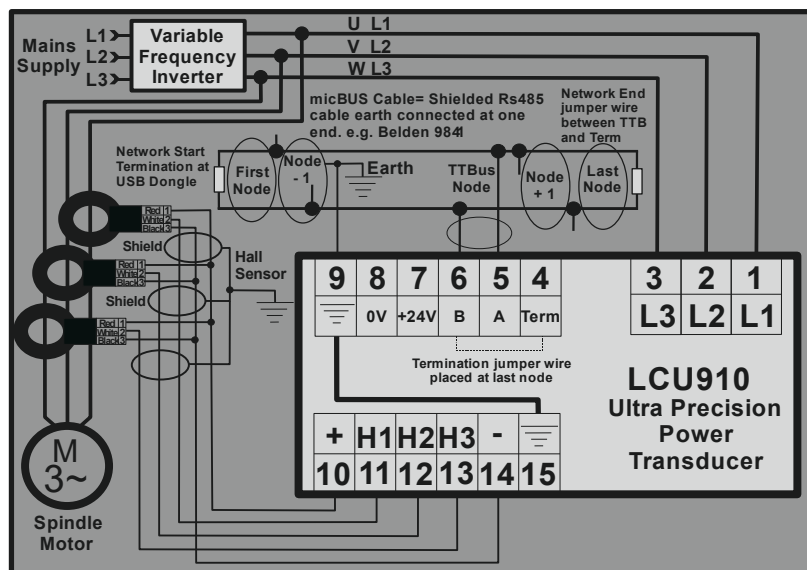
Technical Specification

Mechanical

Housing: Polycarbonate.
Mounting: 35 mm DIN-rail.
Protection Class: IP40.
Temp. Range: -15 to + 50 C.
Weight: App. 100g.
Dimensions: D 118 x B 45 x H 137,5 mm.

Electrical

Voltage Input: 3 x 0-500 VAC/VDC max.
Current Input: 3 x 50/100/200/500/1000 A, 0 Hz - 60kHz
Power Range: 39, 80, 160, 398 or 797 kW at 460 VAC.
Supply: 18-36 V DC max. 4.0 Watt.
micBUS output: RS485 - proprietary protocol.



Features

The LCU910 is designed primarily for measuring AC power delivered to motors driven by Variable Frequency Inverters. AC power is measured from the formula:

$$P_T = \frac{1}{T} \int_0^T (V(t) \times I(t)) dt$$

Where: T = period, $V(t)$ = voltage and $I(t)$ = current.

The LCU910 Power or Current Transducer is specifically developed to function as a load transducer for the **micPower** Range of Machine Tool Monitors.

A Power Transducer for Tool-Monitoring must be fast and accurate. Sometime the measurement speed is as high as one half period, unlike commercial power-meters, which measure power averaged over several seconds. The symmetric 3-phase measurement is necessary for the high accuracy measurement needed for Tool Monitoring applications.

Please note that most commercial Power Meters will not even be able to measure Power correctly after a Variable Frequency Inverter. The transducer interfaces to Tool Monitor Applications via the proprietary micBUS interface.

The three motor wires **must** pass through the external hall sensors in the **same direction** to the motor either from Top-Bottom or from Bottom-Up.