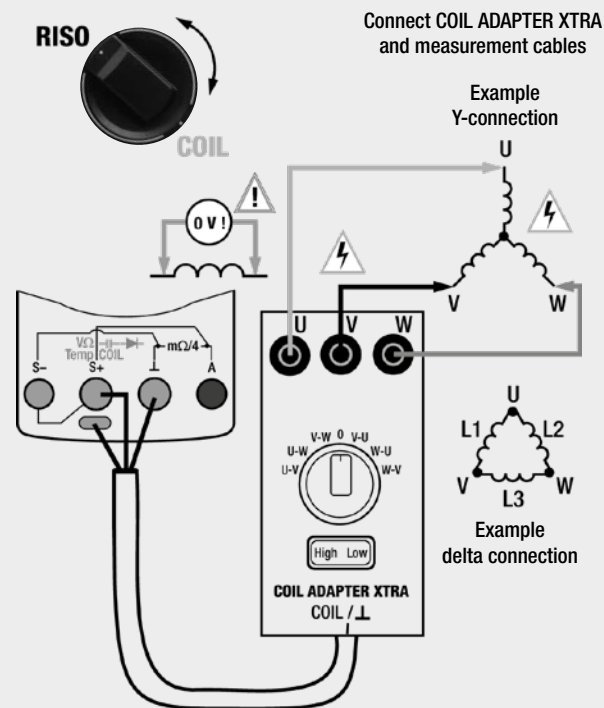


INTER-TURN SHORT CIRCUIT TEST WITH COIL ADAPTER XTRA

Surge tests with 1 kV within an inductance range of 10 μ H to 5 H (at 100 Hz) are possible in combination with the optional COIL ADAPTER XTRA. This range corresponds to motors in accordance with DIN standards with power ratings of roughly 160 VA to 80 MVA.

Inter-turn short circuits are readily detected within the coil by comparing the electrical characteristics of the windings in multi-phase motors with each other.

The METRAHIT IM XTRA and the COIL ADAPTER XTRA conduct testing with a 1 kV surge voltage (surge test). In this way, defects are detected which only occur when operating voltage is applied. Testing is possible for coils with inductances within a range of 10 μ H to 5 H, which corresponds to nominal power from approximately 160 VA to 80 MVA for 3-phase motors with a nominal voltage of 400 V. The sequence is semiautomatic.



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TESTED ACCESSORIES – FOR MEASURING TASKS



CURRENT CLAMP SENSOR
CP330

KELVIN CLIPS
KC4

KELVIN PROBES
KC27

FLEXIBLE CURRENT SENSOR
METRAFLEX 300M

PROBE WITH KEYS
Z270S

SAFE DIAGNOSIS OF HYBRID AND ELECTRIC VEHICLES

COIL ADAPTER XTRA

GOSSEN METRAWATT
CAMILLE BAUER

USPs

➤ Extended inductance range:

Low: 10 μ H to 50 mH

3-phase machines with 380 V >> ~ 80 MVA ... ~ 15 kVA

High: 5 mH to ~ 5 H

3-phase machines with 380 V >> ~ 160 kVA ... ~ 160 VA

Influencing factors: attenuation of non ideal inductances

➤ Simultaneous connection to 3 coils: L1-L2-L3, U1-V1-W1

➤ Rotary switch for coil selection

➤ Polarity reversal by means of the rotary switch

Additional Features

➤ Combined plug connector for METRAHIT IM E-DRIVE or XTRA

➤ Rotary switch position is signaled to the METRAHIT IM E-DRIVE



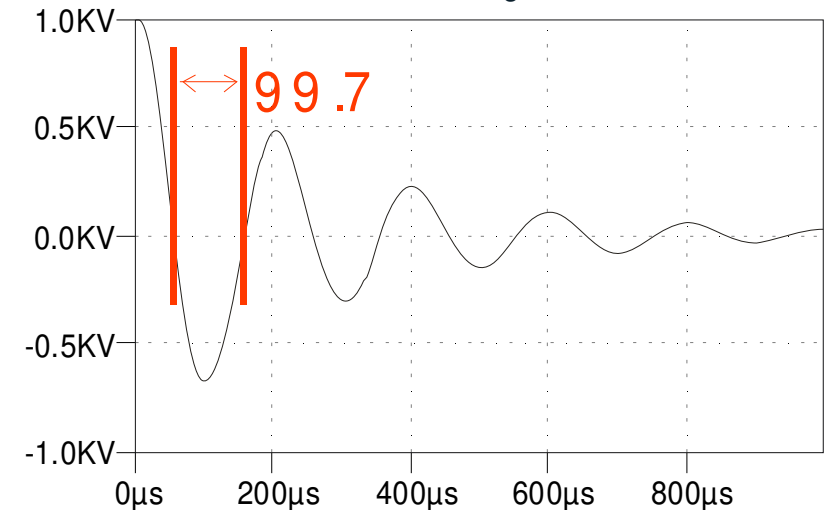
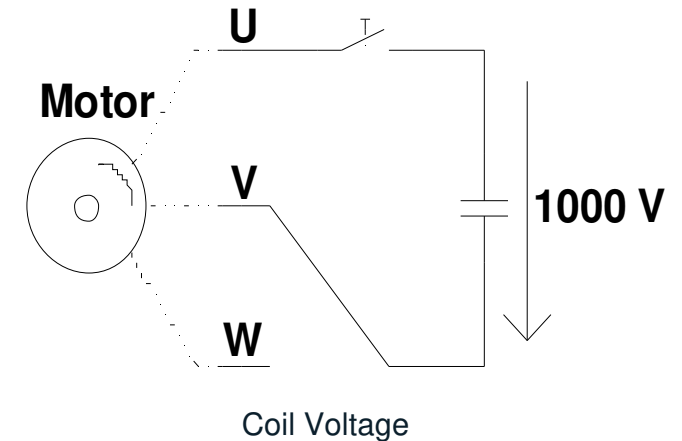
SAFE DIAGNOSIS OF HYBRID AND ELECTRIC VEHICLES

COIL ADAPTER XTRA



The Measuring Method

- **Surge voltage test with 1 kV**
Faults are generated under operating conditions.
- A capacitor is charged with test voltage.
- Automatic cyclical discharge at the test probes
- Discharge takes place via the motor winding which, in parallel with the capacitor, forms a resonant circuit.
- Decaying voltage is depicted in the diagram.
- Time between the first two zero crossovers is measured and indicated at the METRAHIT IM XTRA
- The time constant is proportional to the inductance.



SAFE DIAGNOSIS OF HYBRID AND ELECTRIC VEHICLES

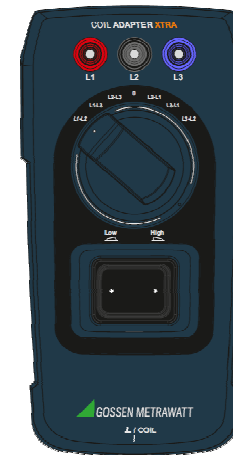
METRAHIT IM XTRA & COIL ADAPTER XTRA

METRAHIT IM E-DRIVE Coil Measurement

- **COIL measuring function:**
 - Single-phase unipolar
 - Single-phase bipolar
 - 3-phase unipolar
 - 3-phase bipolar
 - Coil (N windings)

Additional Features

- Tabular or graphic display of measurement results in a table
- Repetition of individual measurements
- Integrated measurement data memory



Coil				
Abweichung ---, = %				
Nr	+COIL	-COIL	COIL±	ACOIL1
1				
2				
3				

BUSINESS DEVELOPMENT

METRAHIT IM XTRA & COIL ADAPTER XTRA

GOSSEN METRAWATT
CAMILLE BAUER



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