

Trafo Ω x Superintend[®]



Industry

Offline IMD Insulation
Monitoring device

Offline Insulation Monitoring System

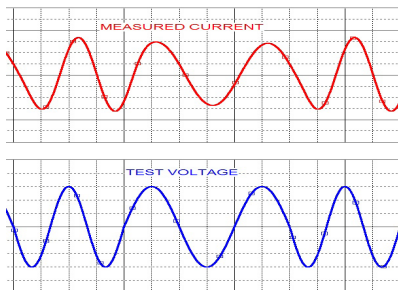


- NEW FEATURE! Modbus RTU interface for remote monitoring and controlling!
- Offline insulation monitoring with detection of network voltage
- Visual user interface and easy installation
- Automatic recognition of the network impedance and capacitance (subharmonic distortion)
- Temperature monitoring and alarm with additional sensor (PT100)
- Removable microSD memory card for analyzing the usage history and fault events
- Suitable for frequency converter applications

INSULATION RESISTANCE MEASUREMENT PRINCIPLE WITH 2 FREQUENCIES SHAPED LIKE SINE WAVES

Basics of the operation:

Device supplies continuously test signal pattern of two sinusoidal voltages to the insulated supply system. This signal causes a small injected current which flows through the insulation resistance and capacitance back to the PE- potential. The current amplitudes and phase angles of the both frequencies are measured and thereafter analyzed by using statistical analyses, and the resistance and capacitance values are calculated by using very ordinary electrical circuit theory and complex math. Depending on the resistance and the capacitance the frequencies are automatically adjusted for the best accuracy and response time. In the case of subharmonic noise in the power supply system due to motor drives, the lowpass filters and test frequencies, among other things, are automatically adjusted.



Typical wave forms above.

high nowadays because of large amounts of different kinds of switch mode power supplies connected in office environments or similar.

Practically every to the mains-connected device has an internal switch mode power supply having a radio interference filter with PE- connected capacitors from 1nF to 50nF. This insulation monitor device keeps log files of capacitance and resistance changes among other things in a microSD memory card. In case of trouble this log can be examined backwards to find the time stamp when a significant change has taken place in the resistance or capacitance. The changes or events in the power supply system can be tracked accordingly to those date and time.

Power supply specifications

Nominal Input voltage	110-240 VAC, 110-300 VDC (Schurter 0001.2503 (T800mA))
Nominal input current	0.04 A at 230 VAC
Line frequency	48 ~ 62 Hz

Measurement specification

Maximum input voltage	690 VAC / 800 VDC
Resistance measurement range	20kΩ...10MΩ (22kΩ...4MΩ with better than 15% accuracy)
Capacitance measurement range	100nF...100uF
System frequency	DC, 10Hz - 500Hz
Measuring impedance	220kΩhm
Test voltage	30Vp max
Threshold voltage of offline detection	50 VAC

Three alarm contacts with settable limits (potential free changeover)

Alarm contact	5A at 250VAC
Pre-alarm contact	5A at 250VAC
Transformer alarm contact	5A at 250VAC

Other functions

Modbus RTU (RS-485) interface for remote monitoring and controlling

Memory logging with microSD card slot

Offline detection with voltage detector V-03: The insulation monitoring works only if there is no voltage at the network. As soon as V-03 detects some voltage at the network, the insulation monitoring is disabled.

Suitable also for frequency converter solutions

Easy and explanatory user interface LEDs and backlit LCD display

Compatible also with 3 phase IT networks

Self-testing automatic Continuous

Self-testing immediate With TEST button

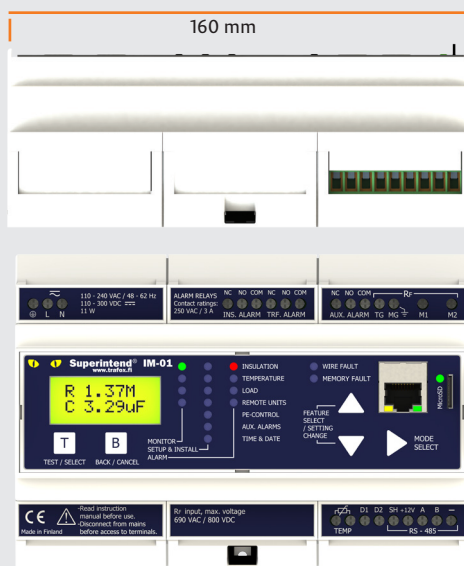
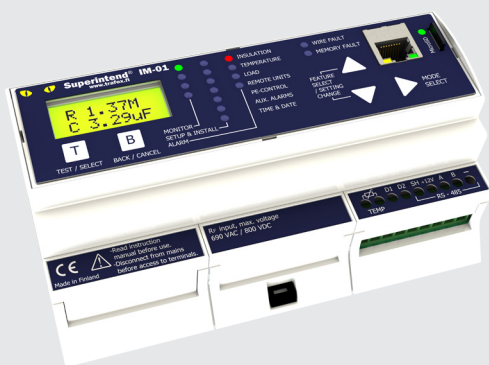
Standards

Measurements	IEC 61557-8:2014
Safety	IEC 61010-1:2010 (3 rd Edition) IEC 60664-1 and IEC 60664-3
EMC	IEC 61326-2-4, CISPR 11 / EN55011, IEC61000-4-2, IEC61000-4-3, IEC61000-4-4, IEC61000-4-5, IEC61000-4-6, IEC61000-4-8, IEC61000-4-11 Tested / approved by Nemko

General

Dimension (W x L x D)	IM-01.IND_V-03 160 x 110 x 62 mm V-03 36 x 110 x 62 mm
Weight	IM-01.IND_V-03 0,35 kg V-03 0,08 kg
Case Material	Plastic
Mounting interface	DIN rail clamp or screw mounting

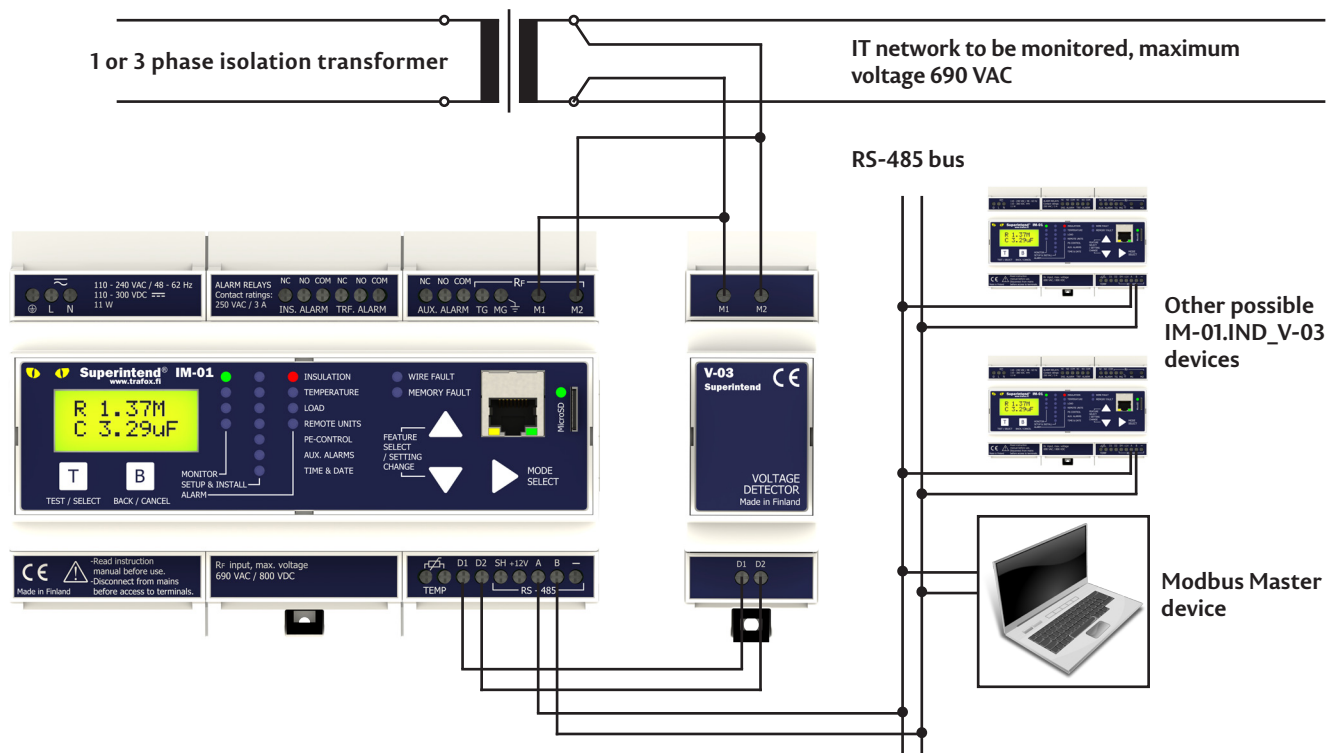
IM-01.IND_V-03



V-03



Principle of connecting IM-01.IND_V-03



Muuntosähkö

Trafox is a brand of Muuntosähkö Oy. We develop, manufacture and customise high-quality transformers, chokes, filters and Trafox Superintend® monitoring devices for a large number of applications.

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