

Trafo Ω x Superintend[®]

NEW! NOW WITH



NEW!



Marine

IMD Insulation
Monitoring device

Line Insulation Monitoring System

IM-01.INDM

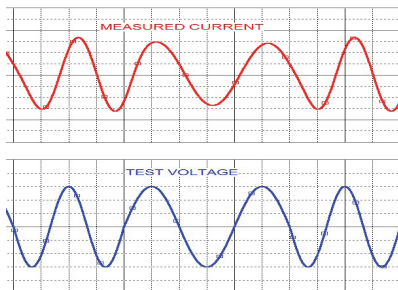


- NEW FEATURE! Modbus/TCP interface for remote monitoring and controlling!
- Visual user interface and easy installation
- Automatic recognition of the network impedance and capacitance (subharmonic distortion)
- Possibility for additional current/temperature monitoring and a potential free alarm contact (inbuilt)
- Possibility of connecting PE conductor monitoring units
- 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	10kΩ...10MΩ (22kΩ...4MΩ with better than 15% accuracy)
Capacitance measurement range	100nF...100uF
System frequency	DC, 1Hz - 500Hz
Measuring impedance	220kΩhm
Test voltage	30Vp max

Three alarm contacts with settable limits (potential free changeover)

Alarm contact	5A at 250VAC
Pre-alarm contact	5A at 250VAC
Current/temperature alarm contact	5A at 250VAC

Other functions

RS-485 serial connection for remote units

Modbus/TCP interface for remote monitoring and controlling

Memory logging with microSD card slot

Analog output of resistance 0...20 mA, with current loop transmitter CLT-01

High voltage couplers HVC-16AC, HVC-40AC and HVC-72AC enables insulation level monitoring of industrial isolated (IT) networks with voltages up to 1600 VAC, 4000 VAC or 7200VAC

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
Transformer monitoring and remote modules of IM-01.MED are also compatible with IM-01.INDM	

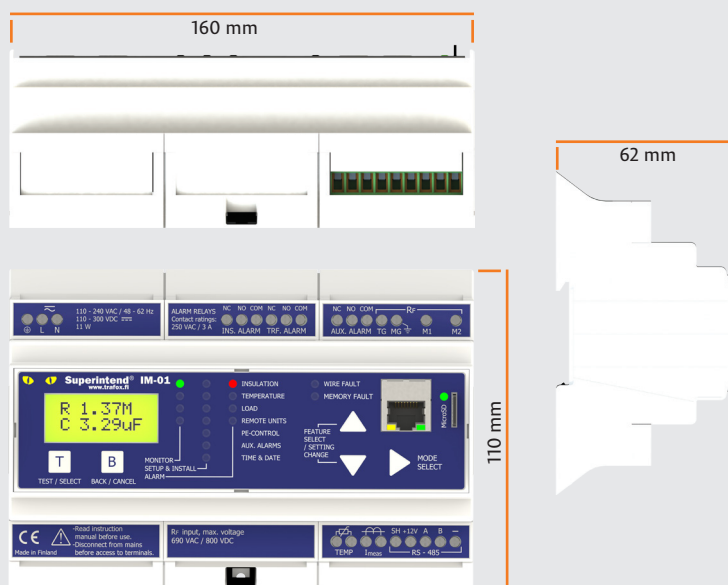
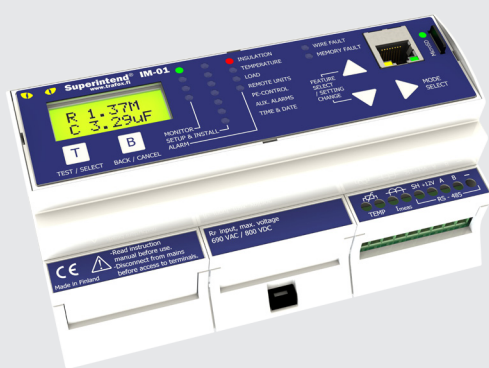
Standards

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
Marine	Lloyd's register Certificate No: LR21409170TA IEC 61557-8 IACS unified requirements E10 (Rev.8 Feb 2021)

General

Dimension (W x L x D)	IM-01.INDM	160 x 110 x 62 mm
	CLT-01	36 x 110 x 62 mm
	HVC-16AC	160 x 110 x 62 mm
	HVC-40AC	189 x 265 x 130 mm
	HVC-72AC	189 x 352 x 130 mm
	FLI-01	53,5 x 110 x 62 mm
Weight	CTM-01	181 x 90 x 67 mm, inner hole Ø 10 mm
	IM-01.INDM	0,35 kg
	CLT-01	0,08 kg
	HVC-16AC	0,24 kg
	HVC-40AC	4,10 kg
Case Material	HVC-72AC	5,90 kg
Mounting interface		DIN rail clamp or screw mounting

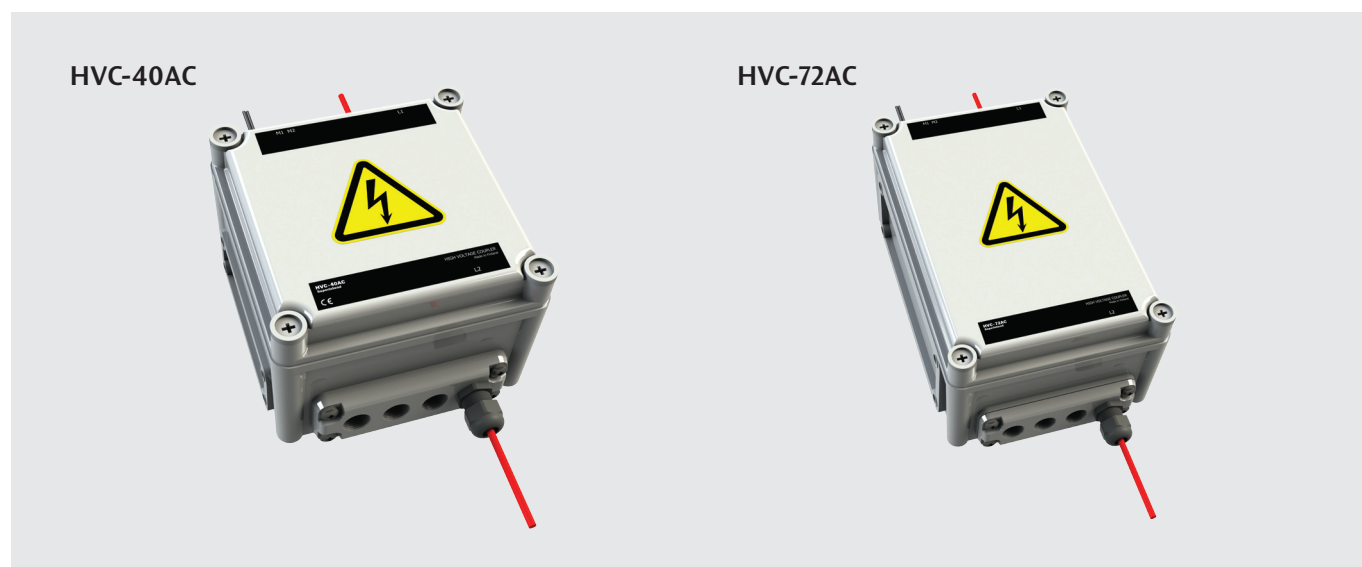
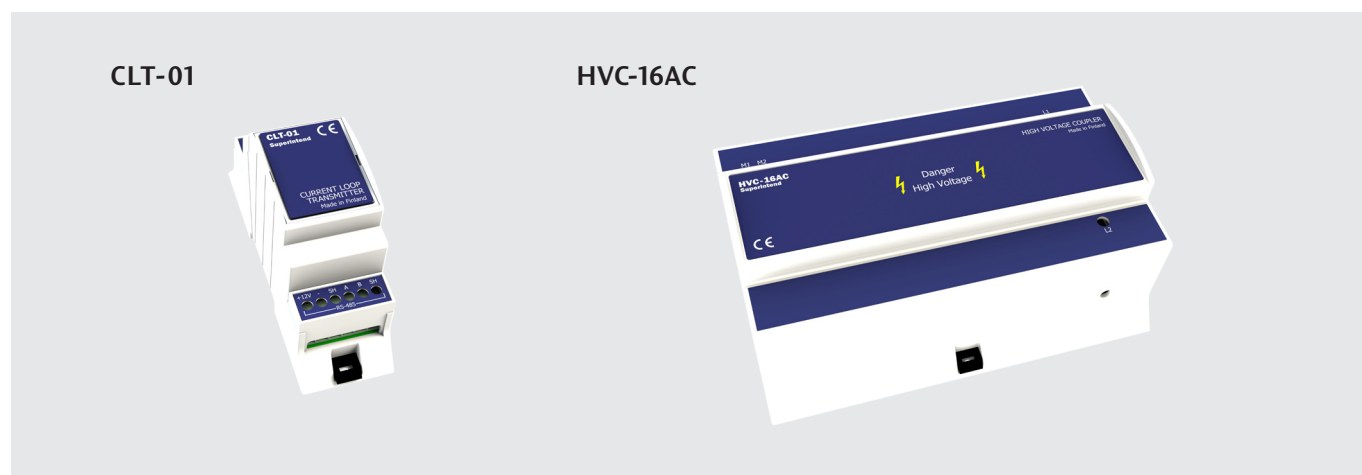
IM-01.INDM



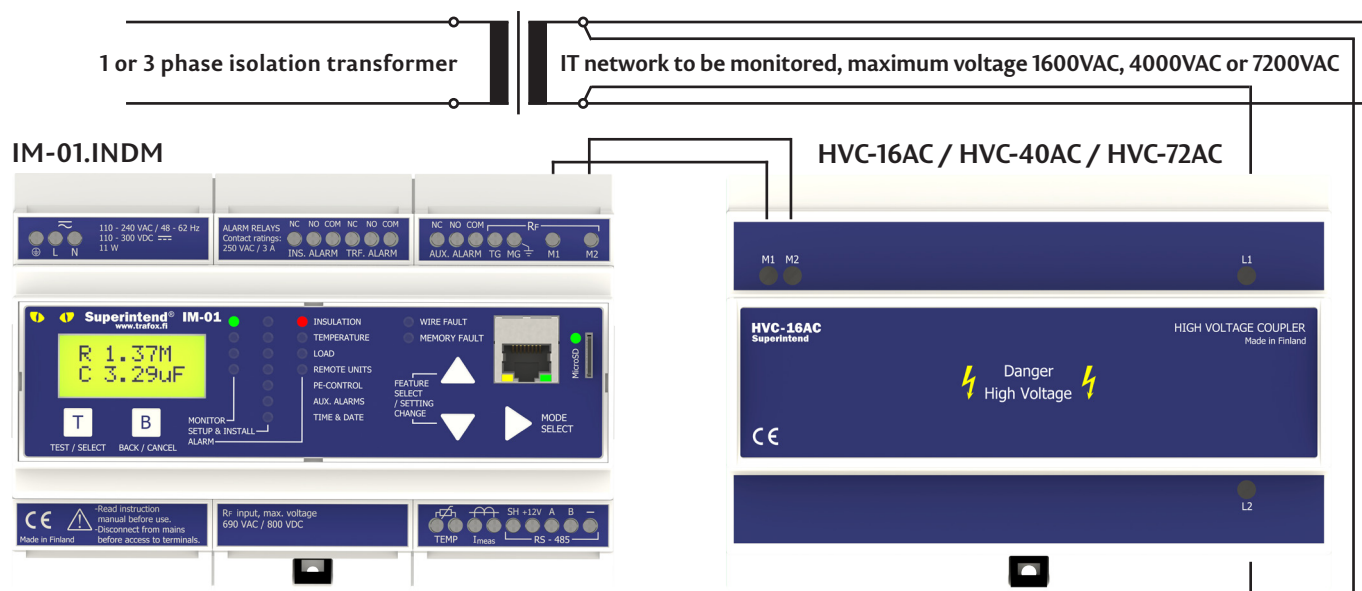
Accessories

Current loop transmitter: CLT-01

High voltage couplers: HVC-16AC, HVC-40AC and HVC-72AC



Principle of connecting high voltage couplers



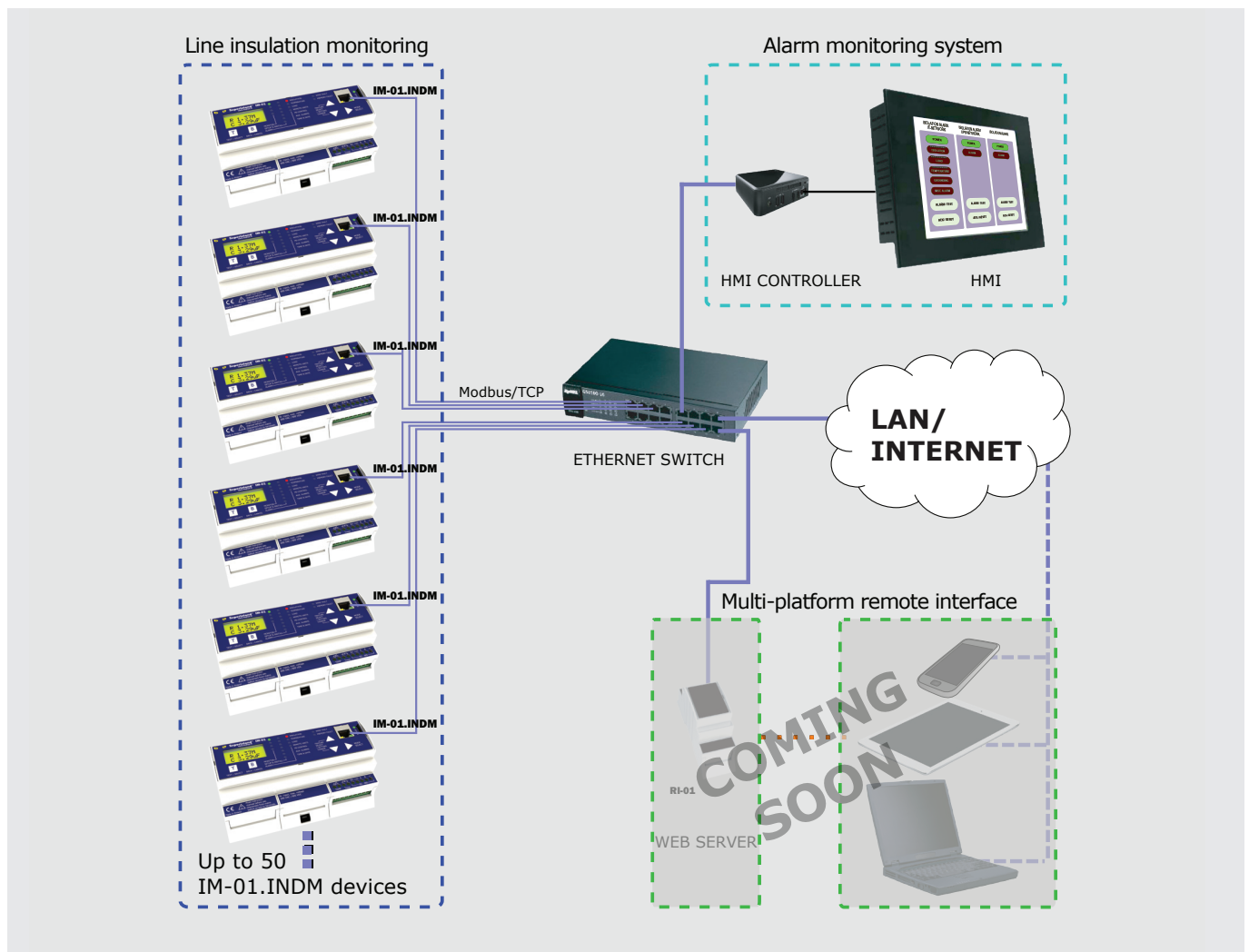
Insulation fault location systems, FLI-01 and CTM-01 for marine IT Networks!



- FLI-01 for injecting the fault location signal
- CTM-01 for detecting the fault location signal in 6 channels
- A total of 8 CTM-01 devices can be connected to one IM-01.INDM / FLI-01
- In other words, up to 48 circuits can be monitored
- Nominal System voltage with the Insulation fault location system: 180...240 VAC


The insulation fault location is shown on the CTM-01 which has detected the fault. The ID of that CTM-01 is shown on the FLI-01. The exact fault location is shown also on the IM-01.INDM.



Remote Monitoring and Controlling of line insulation



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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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