



The SCM is a microprocessor-based device that continuously monitors the insulation system for partial discharge activity as well as other parameters such as temperature and humidity. Application for the SCM includes switchgear, bus duct and cable systems. The basic standalone unit shown in the picture consists of three modules (from the left to the right): Power Supply, main CPU module and a 15-channel partial discharge module.

The basic unit may be extended with additional modules allowing for more economical or accurate way of monitoring multiple objects. The SCM can have up to six PD modules allowing monitoring up to 90 channels (within allowable signal cable distance) with one monitor. These multiple channels

can be of mixed signals, such as RFACTs on cable shield grounds and coupling capacitors located in switchgear.

The SCM offers a variety of additional inputs/outputs for monitoring temperatures humidity, With four dry C-form relay contacts and a 4-20 mA output, the RMM can easily be connected to the plant DCS or SCADA system.

Three communication interfaces including USB, Ethernet and an Isolated RS-485 providing flexibility for monitor networking, as well as for easy local communication to the instrument. All configuration and other features of RMM are available for any higher level plant automation system over MODBUS RTU communication protocol.

The RMM comes with IHM (Insulation Health Monitoring) software for data presentation and analysis and maintenance planning.



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## Technical Specifications

<b>Application</b>	Medium Voltage Switchgear and Cables
<b>Modules</b>	Three: Power supply, Main, PDM
<b>Mechanical dimensions, total</b>	7"x7"x4.5", DIN rail mount
<b>Power supply</b>	100 – 240 VAC, 50/60 Hz
<b>Operating temperature</b>	-30°C - +70°C
<b>Partial Discharge module (PDM) Inputs/Interfaces</b>	
PD sensor inputs	15 (EDI offers variety of PD sensors))
External synchronization input	1
Hardware noise filters flexibly configurable	By Amplitude, by Polarity, by Time Of Arrival
Interface	USB, RS-485
Internal data memory	8 MB (over one year of data)
Display/Keypad	Optional over DB25 connector
PDM Modules total	Up to six
Communication protocol	MODBUS RTU and proprietary
<b>Main CPU module Inputs/Outputs/Interfaces</b>	
<b>Temperature inputs</b>	7 from RTD 100Pt
<b>Ambient humidity input, RH%</b>	1 (EDI sensor required)
<b>Vibration inputs</b>	4 (EDI sensor required)
<b>4-20mA Inputs</b>	6 (can be flexibly used for smart sensors)
<b>Current input</b>	3 (EDI 5 Amps current sensor required)
<b>Voltage input</b>	3 (120 VAC)
<b>4-20mA output (passive)</b>	1
<b>C-form relay output</b>	4
<b>Ethernet, USB, RS485 (isolated)</b>	One of each interface
<b>Display/Keypad</b>	Optional over DB25 connector
<b>On board data memory</b>	8 MB
<b>Communication protocol</b>	MODBUS RTU and proprietary
<b>Signal cable length (RG-58)</b>	Up to 100 m
<b>EDI PD sensors for rotating equipment</b>	
<b>80 pF Coupling Capacitor</b>	5kV, 7.2kV, 16kV, 27kV
<b>Solid core radio-frequency current transformer</b>	0.9" ID
<b>Split core radio-frequency current transformer</b>	Split-core 2.6" ID, clamp-on 0.95" ID



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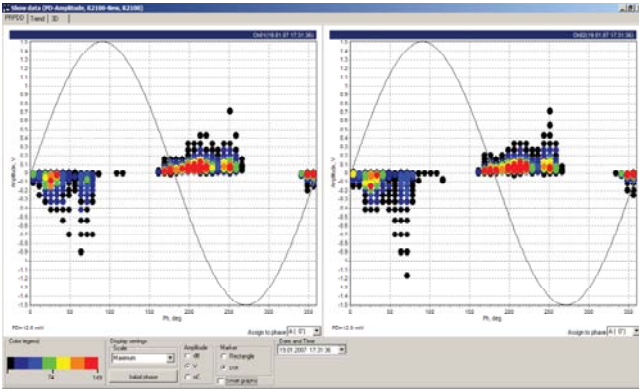
### IHM Software for RMM

IHM (Insulation Health Monitoring) is a versatile software product supporting all EDI Inc. portable instruments and continuous insulation condition monitoring systems that may be found on HV transformers, MV motors, switchgear, cables and other. IHM allows configuring instrumentation, downloading and storing the data into PC memory and data presentation and analysis.



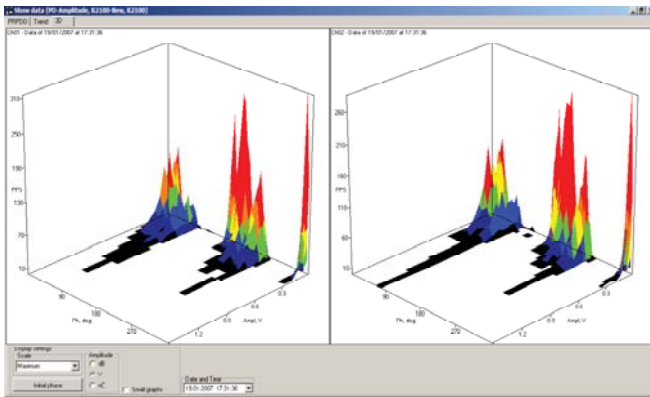
Screenshot of the trending plot for the SCM

Multiple additional parameters may be recorded and stored by RMM along with partial discharges. Trending display allows for viewing historical data and correlation between various measured characteristics.



Screenshot of the PRPDD plot for the SCM

PRPDD plot is an effective way to analyze a type of partial discharge, PD assignment in three-phase voltage system and other PD characteristics.



Screenshot of the 3-D plot for the SCM

This is a common way to present phase-resolved partial discharge data and investigate its structure.