



ONLINE BUSHING MONITORING



NVS-100

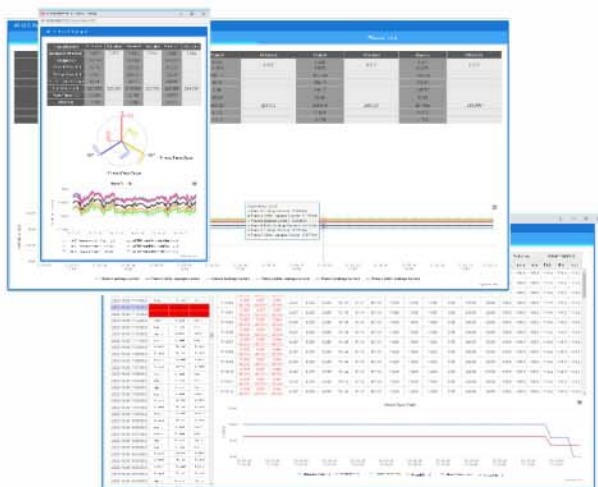
Bushing Monitoring Module for online monitoring system



Features

Realtime leakage current tracking is available with stable monitoring of the facility – Advanced information of Power Factor, C1, Watt/Loss, Phase angle of voltage and current.

MDAS-100 allows monitoring on deterioration of bushing by constantly measuring leakage current flows in the bushing and calculating C1 value of the objective bushing HV and LV sides both.



Trend tracking shows measured / calculated values and histories of the bushing status. MDAS-100 provides vector diagram for three phase analysis of the objective bushing and transformer at one sight.

Meet The Expert At Bushing Monitoring & Analysis

- ☑ Measuring real time bushing leakage current
- ☑ Realtime current & voltage trend graph display
- ☑ Voltage-current phase angle difference analysis per phase in vector diagram
- ☑ Power factor and capacitance(C1) value tracking
- ☑ 3 steps alarm with customizable standards

Diagnosis Function

- ☑ Building Database by location and date
- ☑ Reviewing saved diagnosis data
- ☑ Displaying monitors deterioration of bushing by measuring leakage current in graph and vector diagram
- ☑ Easily export data in excel format for user's database management

Diagnostic Monitoring Software

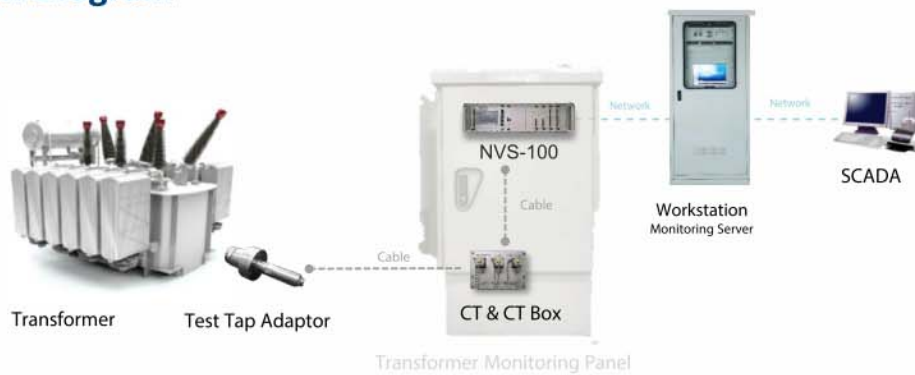
- ☑ i-TODs allows highly accurate analysis algorithm proven by field operators
- ☑ Trend tracking available with individual measuring point detail information

Supply Record

- ☑ KEPCO (Korea Electric Power Corporation)
 - supplied as total solution for substation monitoring system over 10 years
- ☑ Indonesia - PERTAMINA Hulu Rokan

Specification

System Diagram



Technical Specification

System Configuration

Test Tap Adaptor	Need drawing of bushing test tap for fabrication
Transformer Monitoring Panel	A panel that includes electrical apparatus for operating MDAS-100 as an online monitoring system
MDAS-100	Bushing Analysis Module
CT Box	Gaining current by cable connection from tap adaptor
CT	Installed within CT box and chained to the cable connection between CT box ports and tap adaptor. Current transform at certain ratio (ex. 100:1) and delivery of transformed current to current input of MDAS-100 for analysis
PT Source	For referential voltage source gaining
Workstation	An online monitoring server PC that provides diagnosis software (<i>i</i> -TODs)
<i>i</i> -TODs	Intelligent Total Online Diagnostic System (Online Monitoring Software), Can be integrated with other monitoring subjects

Environmental

Operating Temp.	-25°C ~ 55°C
Storage Temp.	-25°C ~ 75°C
Humidity	0~97%
Circuit to Circuit Insulation	> 2000 V
Circuit to Grounding Insulation	> 2000 V

Specification

Mechanical

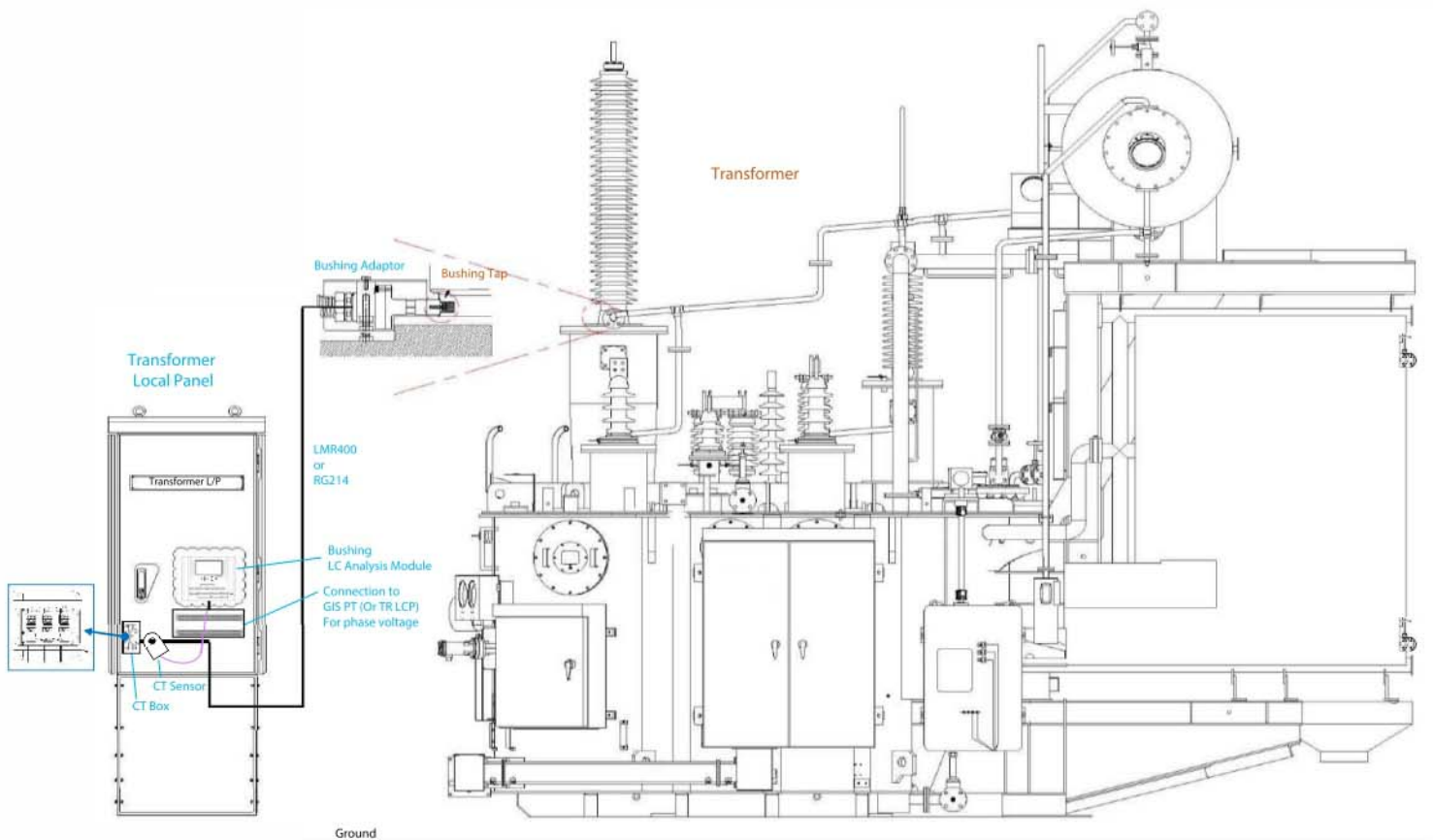
Power Supply	AC 220V / 60Hz (AC105~235V, 50~60Hz)
Enclosure Material	Aluminium
Display	3.5" TFT RGB 65K LCD, 480x320 Pixel, Resistive Touch Screen
Mounting Option	To be installed within a standalone panel Need electrical accessories: CT sensor, CT box, terminal block
Dimension	480 (W) x 130(D) x 132(H) mm
Weight	3,100 g

Data Processing

Measuring Base	Raw waveform of leakage current	
Tap Current Range	0~60mA - customizable	
Voltage Source.	Transformer/GIS PT Source input	
Sampling Rate	128 sample/cycle	
Magnitude Accuracy	±1%	
Phase Accuracy	0.08°	
Resolution	16-Bit AD Conversion	
Monitoring Coverage	1 SET of 3 phase transformer X (HV & LV) = 6 EA of bushings	
Input Channel	Voltage	6 CH (AC 0~230V - customizable)
	Current	6 CH (AC 0~60mA - customizable)
I/O	Digital Output	4 CH (+2 CH Optional)
	Digital Input (DC 5V)	2 CH (+1 CH Optional)
	Analog Input (4~20mA)	2 CH (+1 CH Optional)
	Analog Output	0 CH (+ 6 CH Optional)
Communication	Ethernet (IEC61850 Protocol, 10Mbps or 100Mbps) x 3 ports	
	RS485 (Modbus RTU, DNP 3.0: default baud rate: 9,600 bits/s) x 1 port	
Circuit to Circuit Insulation	> 2000 V	
Circuit to Grounding Insulation	> 2000 V	

Transformer Monitoring System

Bushing Site Plan - Design Drawing

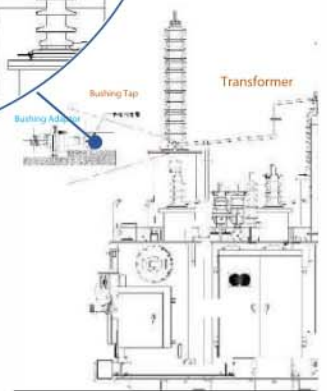
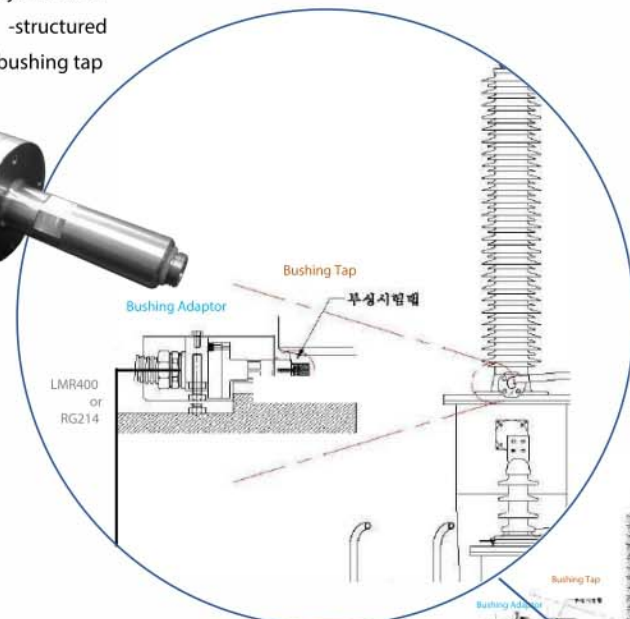


Transformer Monitoring System

Bushing Adaptor



Conjunction of
 two-parts-separate -structured
bushing adaptor with bushing tap





REGISTERED ADDRESS

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