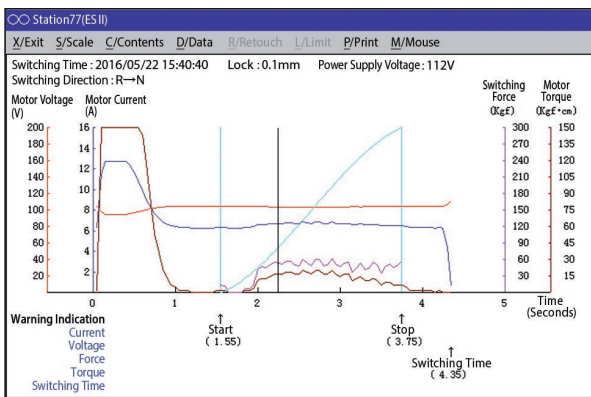


# Point Machine Monitor

Automatically measures point machine data

The Point Machine Monitor System automatically measures point machine switchover data, and monitors the status. The system assists in effective and preventive maintenance in addition to cause investigation in case of trouble.

## Automatically measures current and voltage, and calculates switching force

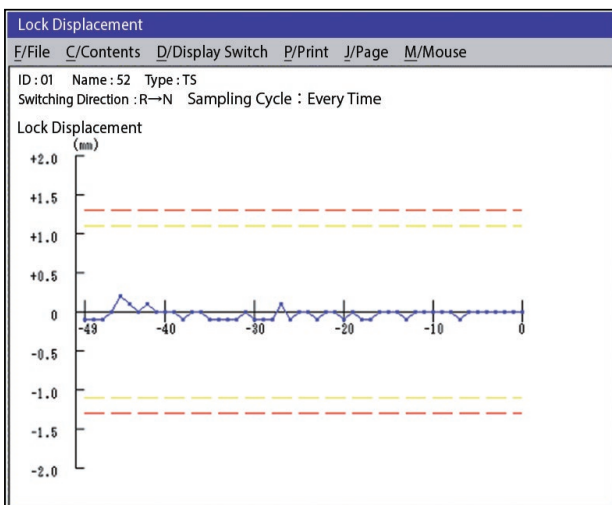


Example of graph display

Measurement of electric point machines are conducted by terminal(s) with measurement and transmission functions, installed in an equipment box or at the inside of the main body of an electric point machine. The system measures operating current and voltage per one switchover automatically and receives and collects data at the processor in equipment room. Hand shaft torque and switching force are calculated based on measured data. The collected data can be confirmed on display.

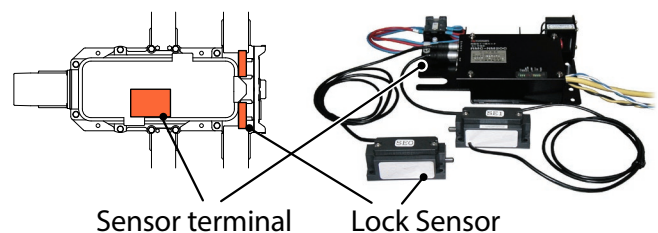
- Graph display of trend value data → Prediction of failure
- Alert by limit value management → Early detection of error
- Graph display of switchover data → Investigation of cause in case of trouble occurrence

## Supervision of lock displacement and point contact detector gap



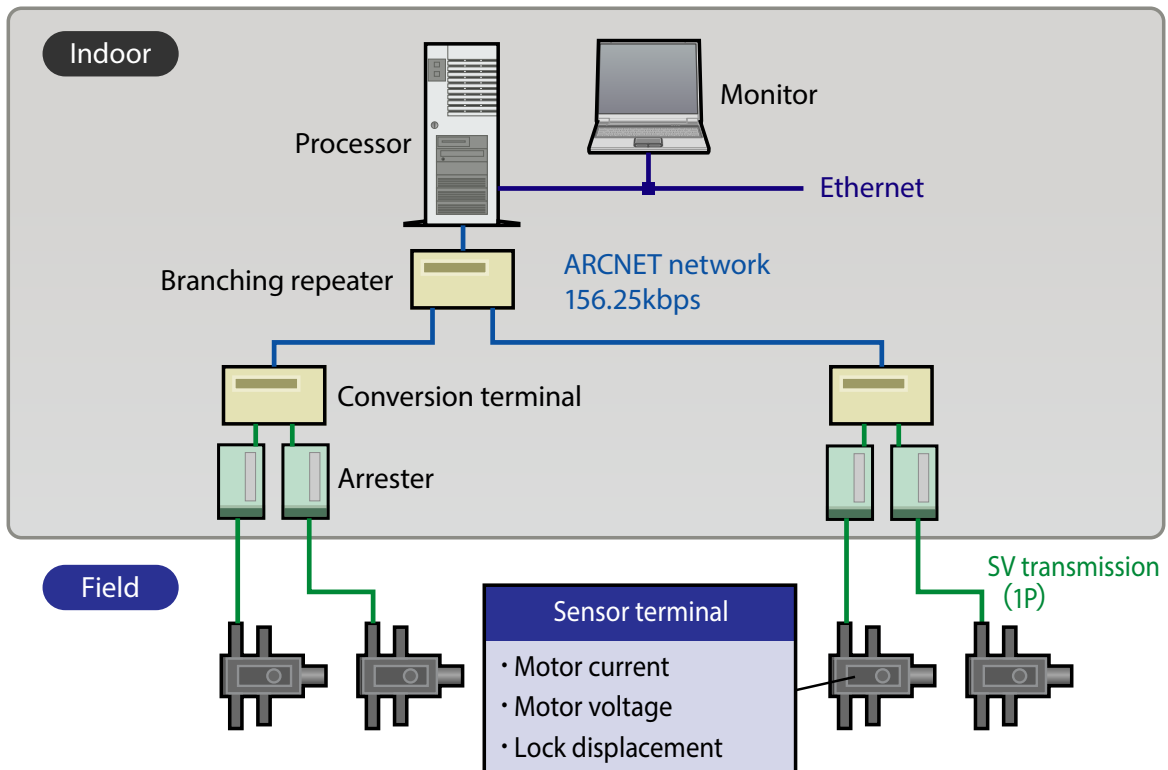
Example of lock displacement graph

The system measures lock displacement and point contact detector gap, and gathers these data. Lock displacement is measured using terminal(s) installed inside an electric point machine. These data can be seen in graph display, either per switchover or change, or in time series.



## Architecture & specifications

System architecture of NS-type electric point machine embedded type (example) and major specifications are as follows.



Transmission method / Transmission speed		SV transmission / 31.2 kbps
Current measurement	Number of inputs / resolution / range	2 / 0.05A / 0 - 25.55A
Voltage	Number of inputs / resolution / range	1 / 0.5 V / 0 - 150V
Operating environment	Power supply voltage	AC105±20V, 50 / 60Hz
	Operating temperature	-20 ~ +60°C
Lock displacement measurement	Number of inputs	2 (normal / reverse)
	Resolution / range	0.1mm / reference point ±2.0mm
Lock displacement display		3-stage LED display
Processor Limit value management items		<ul style="list-style-type: none"> <li>• Operating current</li> <li>• Lock displacement</li> <li>• Operating voltage</li> <li>• Hand shaft torque</li> <li>• Switching time</li> <li>• Switching force</li> </ul>