

บริษัทผลิตภัณฑ์กระดาษไทย (SCG Paper)

- The machine is Turbine/Generator.
- The existing system is Bently Nevada, but only at Turbine.
- Some existing cards were failed and the spare parts are very high cost, moreover, they need to monitor the Generator as well.
- AST awarded to replace the failed existing system as well as installing a new system for the Generator.
- The new system is Rockwell Protection System which is certified API 670, the only standard for Turbine Vibration Protection System.



Overview

The protection and supervisory system described in this section relates to the solution for a single turbine. The following measurement regime has been assumed.

For Steam Turbine:-

Relative Vibration	4 channels (2-off X & Y)
Thrust	2 channels (dual redundant)
Speed/Phase measurement	2 channels (dual redundant)

For Gearbox:-

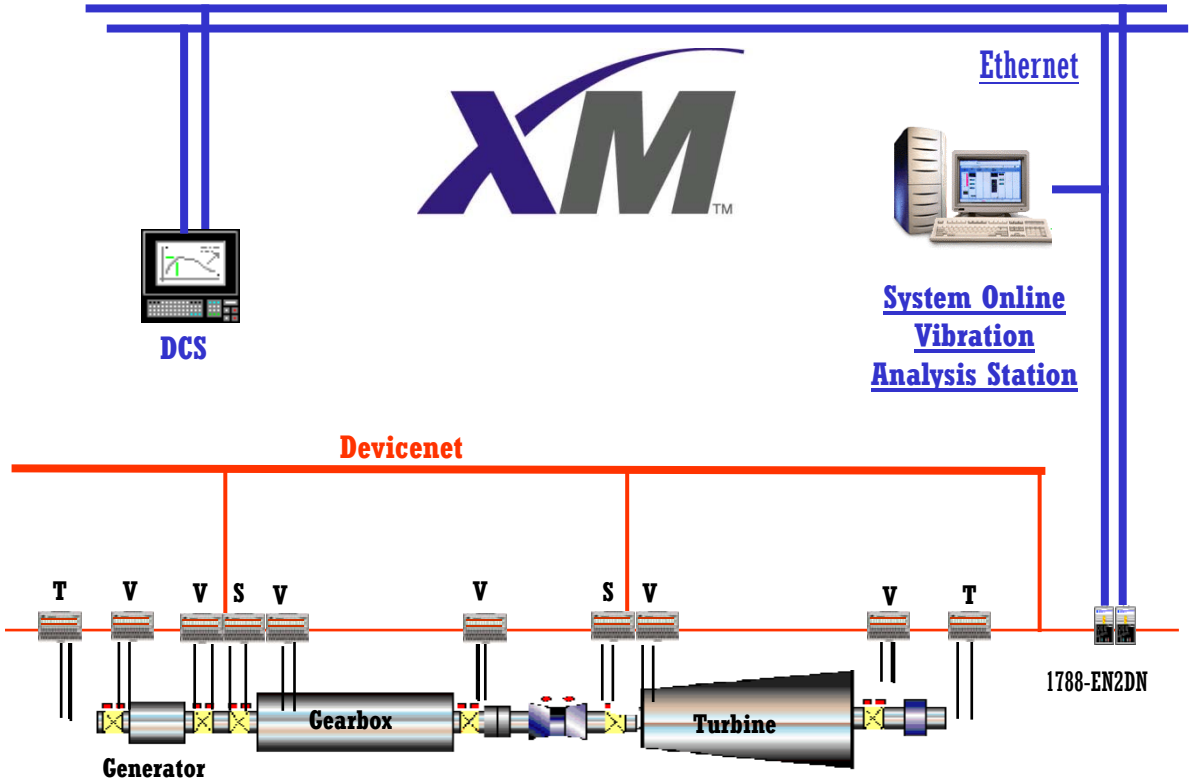
Relative Vibration	4 channels (2-off X & Y)

For Generator:-

Relative Vibration	4 channels (2-off X & Y)
Thrust	2 channels (dual redundant)
Speed/Phase measurement	2 channels (dual redundant)

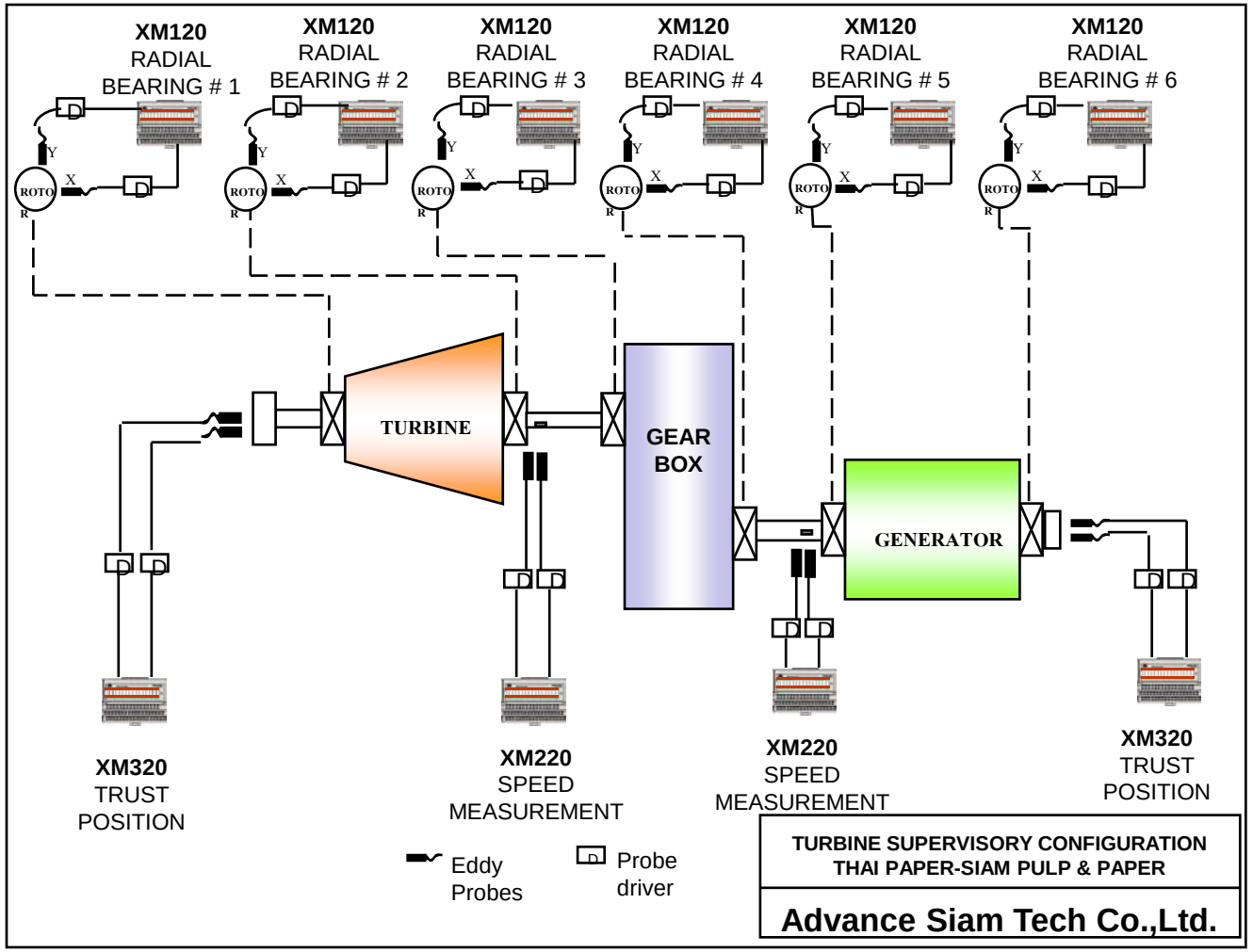
Facilities for dual 4-20mA current outputs per channel and module alarm relay contacts will interface with plant DCS system.

Schematic Diagram



V : Vibration Measurement Module
S : Speed Measurement Module
T : Thrust Position Module

Block Diagram





Bill of Material

ITEM	DESCRIPTION	@PRICE	Q'TY	TOTAL PRICE
	NEW VIBRATION SYSTEM INSTALLATION			
1	XM-120, 2 Channel Standard Module	฿108,000.00	4	฿432,000.00
	P/N: 1440-VST02-01RA			
2	XM Dynamic Modules Terminal Base	฿15,000.00	4	฿60,000.00
	P/N: 1440-TB-A			
3	XM-220 Dual Channel Speed Monitor	฿96,000.00	1	฿96,000.00
	P/N: 1440-SPD02-01RB			
4	XM Position Module Terminal Base	฿15,000.00	2	฿30,000.00
	P/N: 1440-TB-B			
5	XM-320, 2 Channel Position Module	฿89,500.00	1	฿89,500.00
	P/N: 1440-TPS02-01RB			
6	8mm Dia NCPU with 1.0 meter armoured cable,	฿15,500.00	12	฿186,000.00
	70mm body 3/8-24, P/N: EK-2106-70-00-1-10			
7	5/8mm, 8.0 meter extension cable with flexible	฿12,000.00	12	฿144,000.00
	conduit, P/N: EK-2170-1-80			
8	5/8mm - 9.0 meter probe driver	฿17,500.00	12	฿210,000.00
	P/N: EK-2108-9-001			
9	RSVIEW SE Station 25 Display	฿105,000.00	1	฿105,000.00
	P/N: 9701-VWSB025AENE			
10	XM-500 Devicenet to Ethernet Gateway	฿98,000.00	1	฿98,000.00
	P/N: 1440-GWEN2DN			
11	Cabinet	฿60,000.00	1	฿60,000.00
		SUB TOTAL		**฿1,510,500.00**

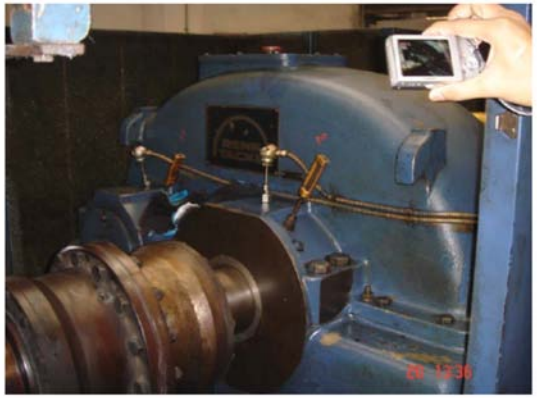


Bill of Installation

ITEM	DESCRIPTION	@PRICE	Q'TY	UNIT	TOTAL PRICE
1	Eddy Current Probe Holder, Aluminum	฿9,500.00	10	pcs*	฿95,000.00
2	Driver Box, SST plus accessories in box	฿15,000.00	3	boxes**	฿45,000.00
3	Multi Traid Cable, 4T X 1.00 sq.mm/FOIL	฿320.00	150	meters	฿48,000.00
4	Power Supply 24 V 5A	฿3,000.00	6	pcs	฿18,000.00
5	Installation ประกอบด้วย				
	1) ค่าติดตั้ง Sensor (เจาะติดตั้ง Sensor, ตั้ง Gap,	฿7,000.00	10	points*	฿70,000.00
	Plot Linerity curve, เดินสาย Flex)				
	2) ค่าลากสาย + Conduit มาที่ Driver Box	฿2,500.00	10	points*	฿25,000.00
	3) ค่าลากสาย + Conduit จาก Driver Box ไปที่	฿250.00	150	meters	฿37,500.00
	Control Room				
	4) ค่าติดตั้ง Cabinet พร้อม Wiring ในตู้	฿18,000.00	1	job	฿18,000.00
	Remark: * 2 sensors of Thrust Position and Speed measurement mounted to one point				
	** 1 Driver Box per 4 Drivers				
	SUB TOTAL				**฿356,500.00**
	VAT 7%				**฿24,955.00**
	GRAND TOTAL				**฿381,455.00**

AST

Thai Paper-Turbine's Sensors Installation





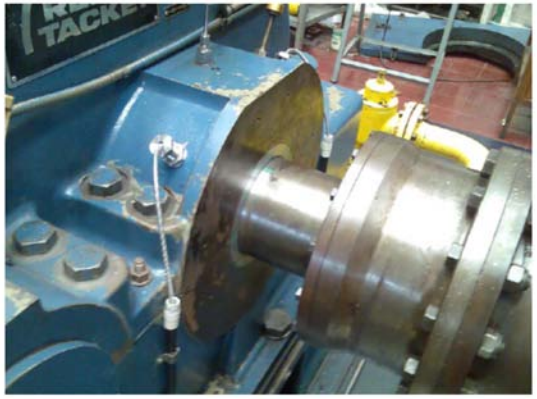




AST

Thai Paper-Turbine's Sensors Installation



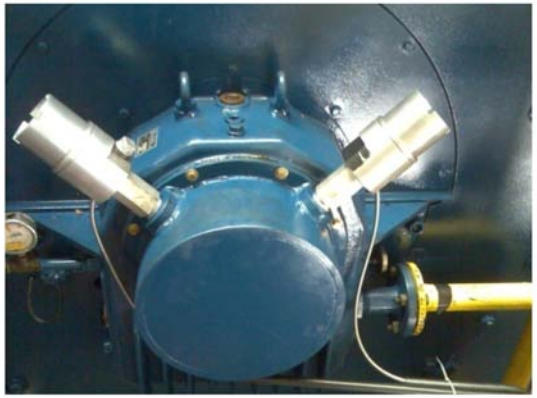




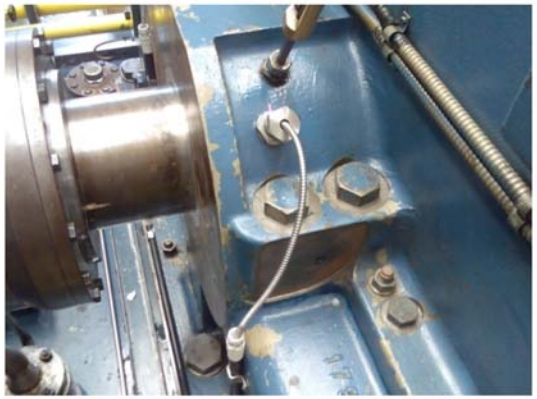


Thai Paper-Turbine's Sensors Installation









Thai Paper's Turbine Vibration Monitoring System

