

APPLICATION CASE STUDY



DOC.NO. : AMTCS-19

HOST ORGANISATION : SANGHI TEXTILE LTD. (PAPER DIV.) ASSAM.
INDUSTRY : PAPER
APPLICATION : ID FAN
METHOD OF CONTROL : DAMPER CONTROL
OBJECTIVE : TO DEMONSTRATE THE ENERGY SAVINGS WHICH CAN BE ACHIEVED BY USING AC VARIABLE FREQUENCY DRIVE ON THE 100 HP ID FAN.
POTENTIAL USERS : PULP & PAPER & OTHER PLANTS

POWER CONSUMPTION BY PRESENT METHOD OF DAMPER CONTROL

CONSUMPTION	DAMPER POSITION OPENING
54 KW/HR	80%

ACTUAL POWER CONSUMPTION USING AC VARIABLE SPEED DRIVE & DAMPER POSITION FULLY OPEN

CONSUMPTION	DAMPER POSITION OPENING
34 KW/HR	100%

NET POWER SAVING : 54 KW - 34 KW = 20 KW/HR
MOTOR OPERATION : 24 HRS/DAY
UNITS SAVING/DAY : 480 KWH
UNITS SAVING/MONTH : 14,400 KWH
TARRIF RATE RUPEES : US \$ 9523.81 / UNIT
ENERGY SAVING/MONTH : US \$ 1214.28 APPROX.
ENERGY SAVING/YEAR : US \$ 14571.43 APPROX.
INVESTMENT : US \$ 8333.33

MERITS OF THE SYSTEM :

- 1 Matches air flow system demand which typically uses nearly 60% less fan motor energy than fix speed damper control method
- 2 Drastically reduces fan noise level
- 3 'Catch on fly function' of 'AXPERT' enables to catch running motor on fly without any tripping
- 4 Tolerates momentary input power supply loss (typically of 2 sec.) without tripping
- 5 Build in PID controller can be provided to control the flow and decide the frequency set point for the 'AXPERT' AC Variable Frequency Drive
- 6 Maintenance reduces
- 7 Power factor is maintained unity.

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